GR10 Project 10-13 and 10-14

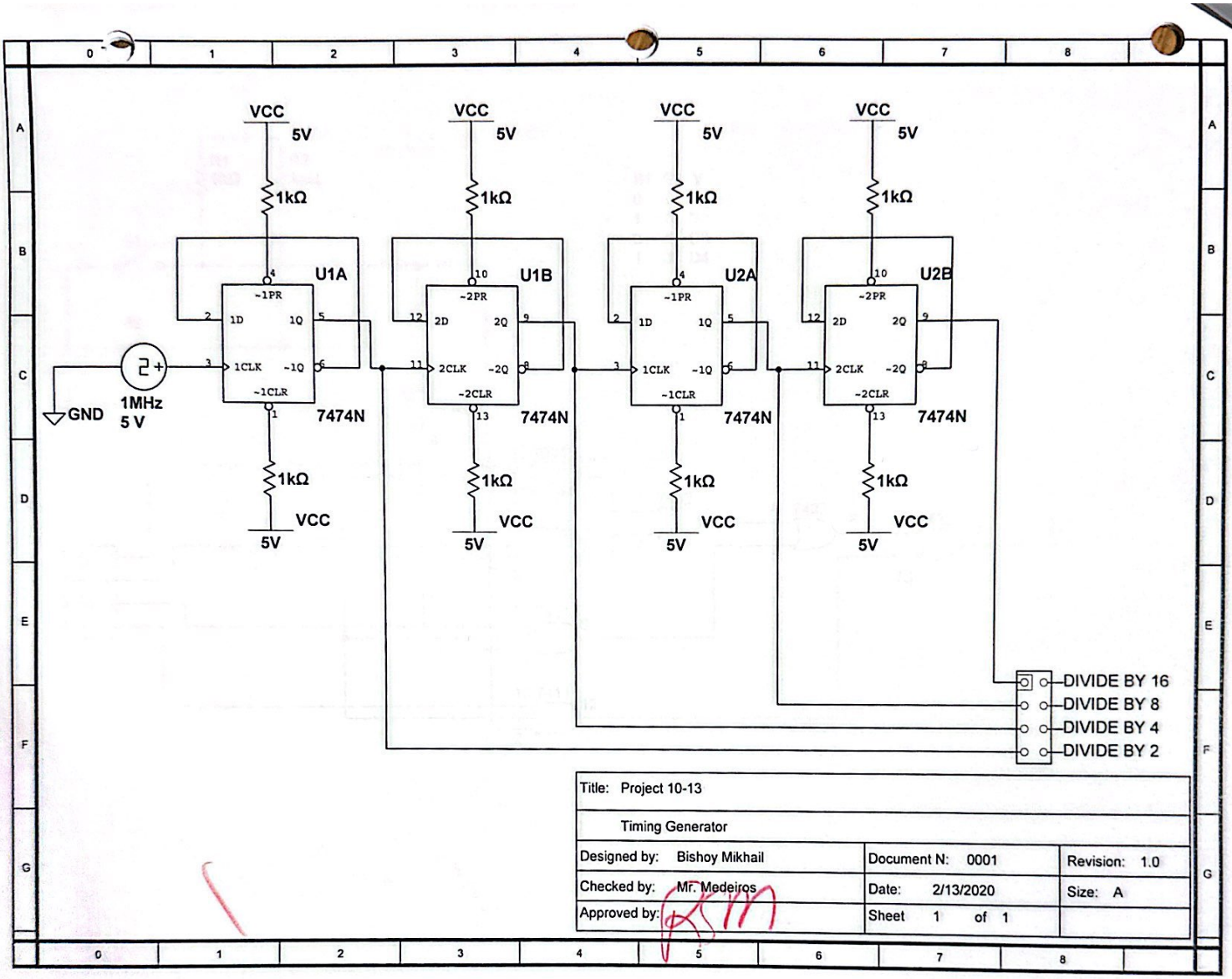
Timing Generator

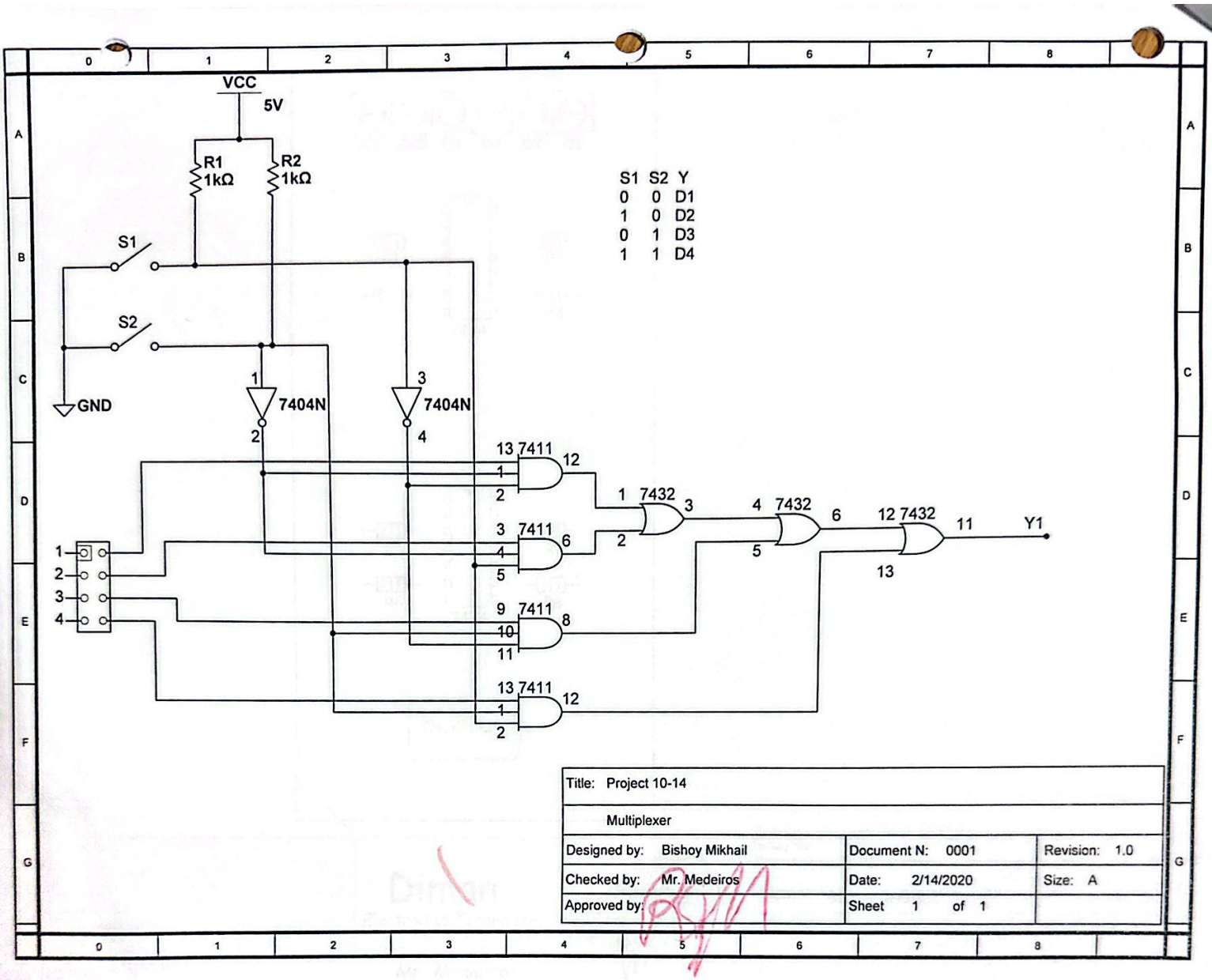
4 to 1 Multiplexer

Bishoy Mikhail

3/10/2020

B-Weeks





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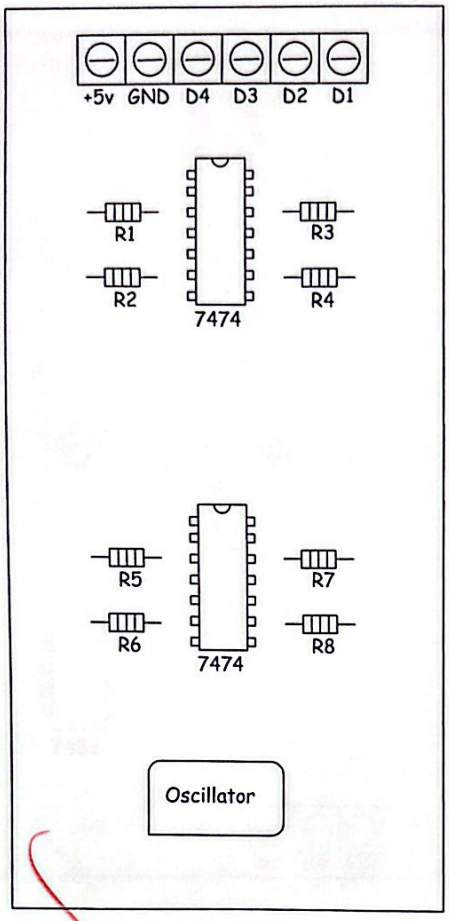
Multiplexer		
Designed by: Bishoy Mikhail	Document N: 0001	Revision: 1.0
Checked by: Mr. Medeiros	Date: 2/14/2020	Size: A
Approved by:	Sheet 1 of 1	



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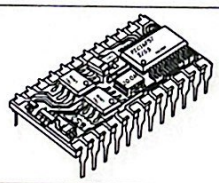
Instructor:
Mr. Medeiros



Drawing Title:
Project 10-13: Timing Generator Component View Diagram

Date:
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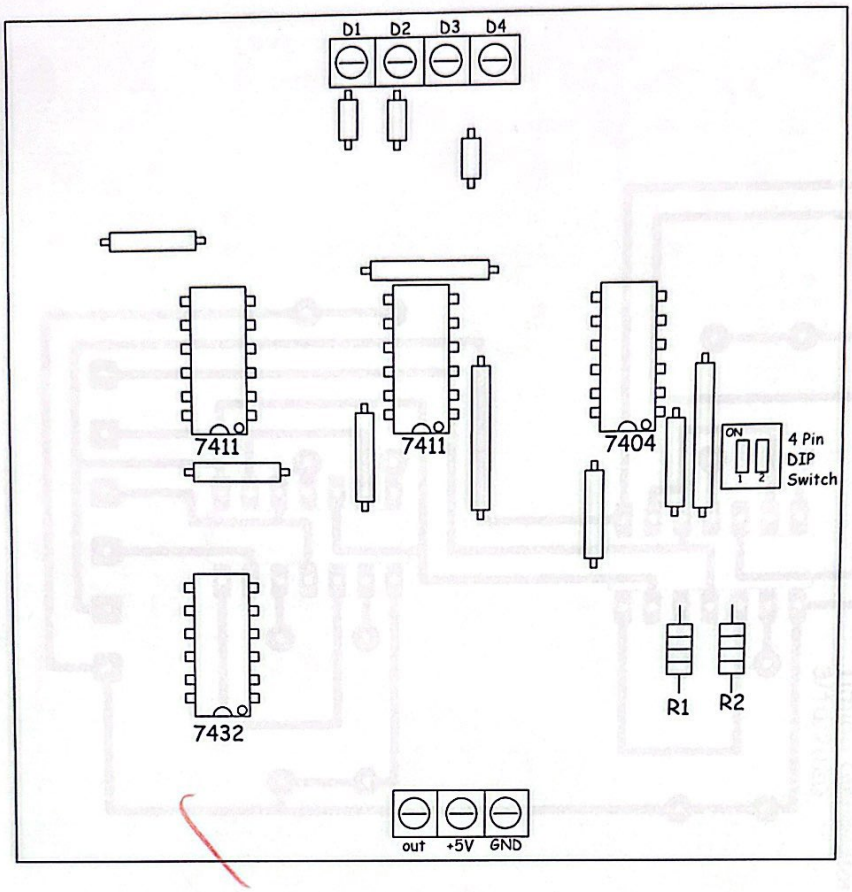
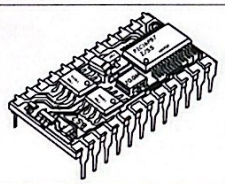
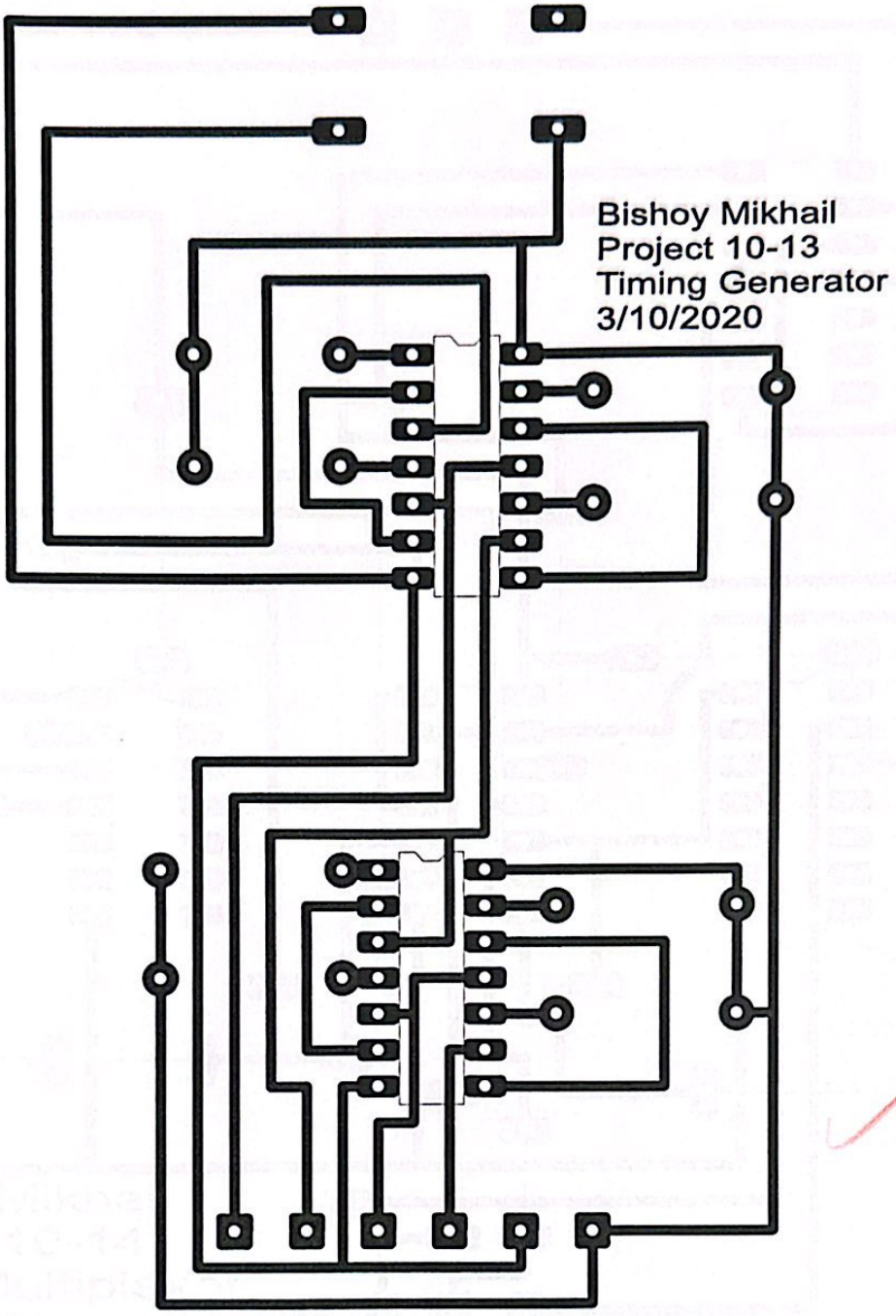
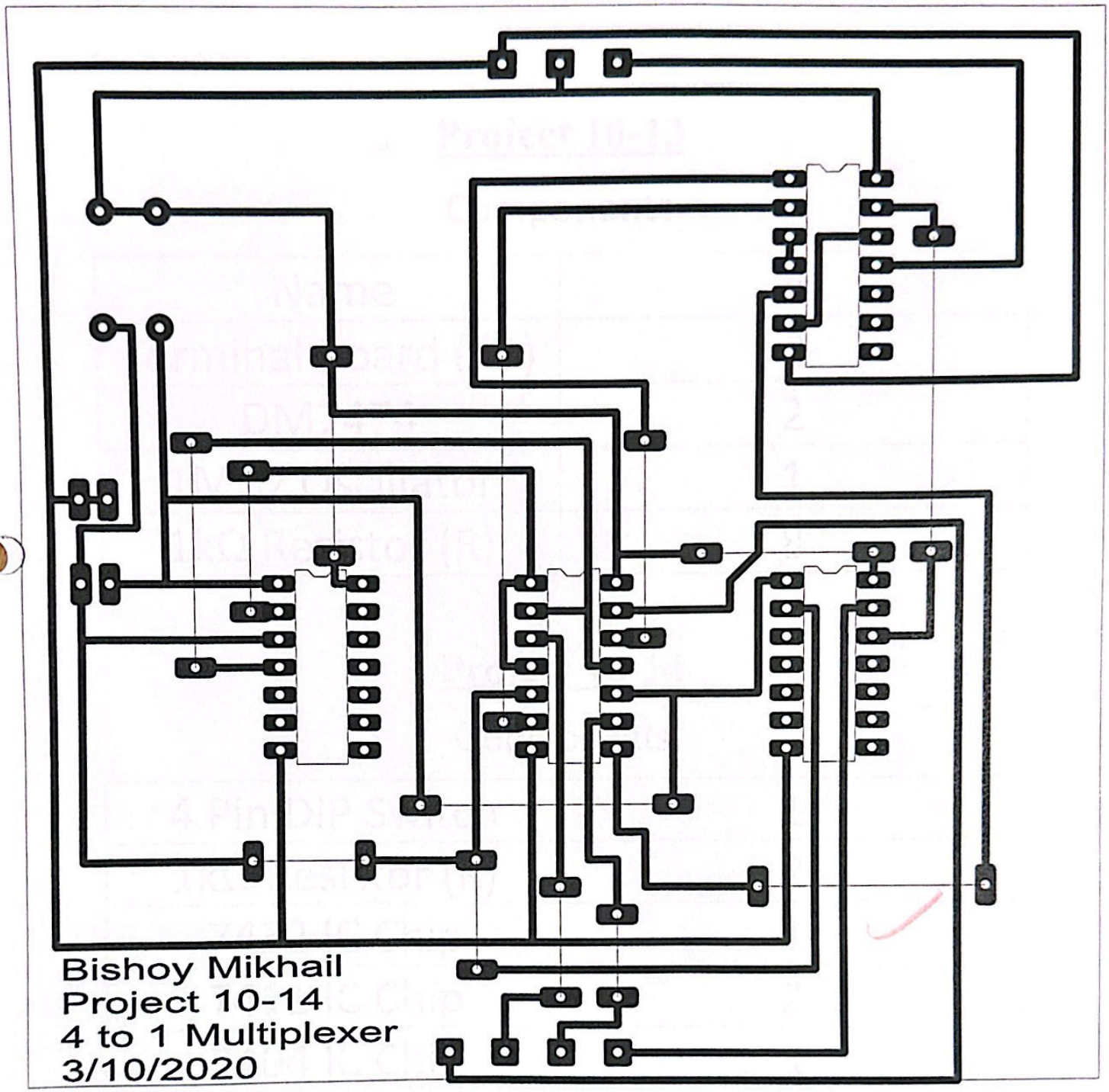
Name: Bishoy Mikhail

Page Number:
1 of 1



	Diman Electronics Technology Instructor: Mr. Medeiros		Drawing Title: Project 10-14 Component View Diagram	Date: 3-10-2020
			Name: Bishoy Mikhail	Page Number: 1 of 1





Bishoy Mikhail

Parts list

3/10/2020

Project 10-13

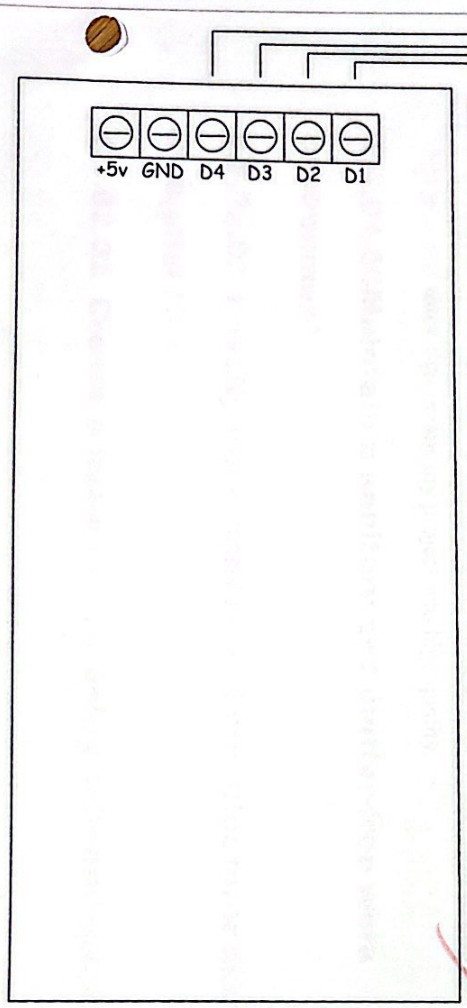
Components

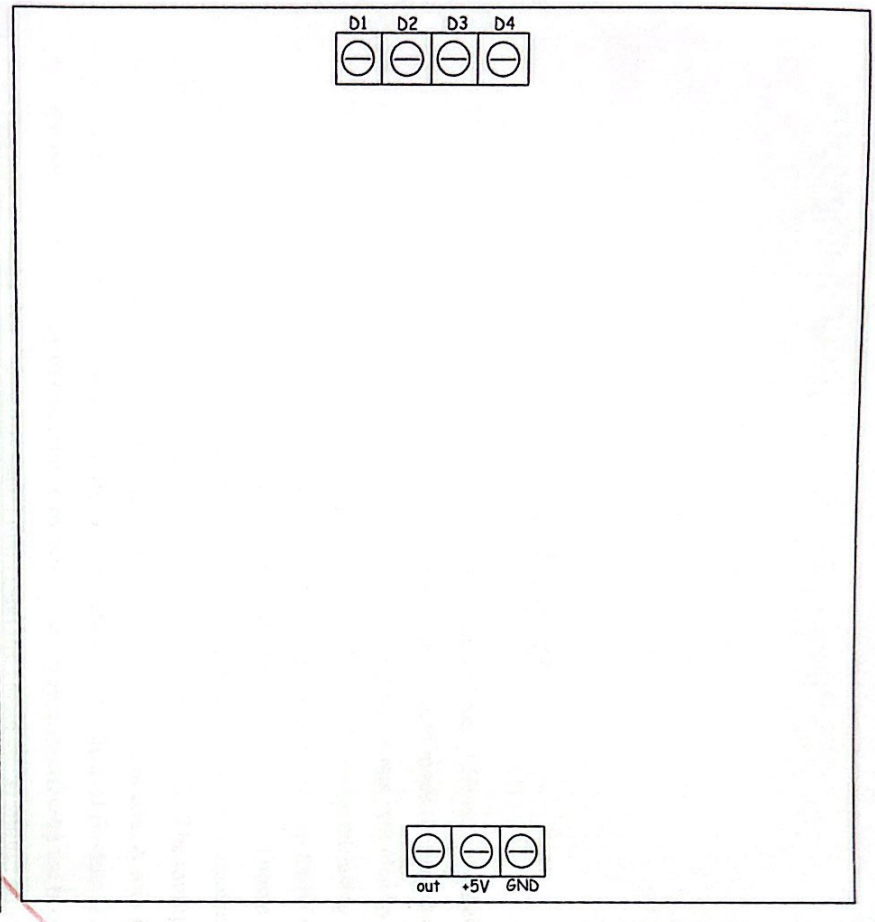
Name	#
Terminal Board (TB)	2
DM7474	2
1MHz Oscillator	1
1kΩ Resistor (R)	8

Project 10-14

Components

4 Pin DIP Switch	1
1kΩ Resistor (R)	2
7432 IC Chip	1
7411 IC Chip	2
7404 IC Chip	1
Terminal Board (TB)	3





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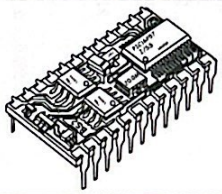

Drawing Title:
Project 10-13, 10-14: Interconnection Diagram

Date:
3-10-2020

Name: Bishoy Mikhail

Page Number:
1 of 1

Bishoy Mikhail

Electronics Technology

Timing Generator

4 to 1 Multiplexer

March 10, 2020

Tech Report

The task was to create a timing generator going into a multiplexer. This task was performed individually. A schematic was made using Digital Multisim. I then made the circuit on a breadboard and ensured it worked before moving on. A foil pattern was provided by the instructor and we copied it using PCB Design and Make. We made the circuit using D Flip Flops to divide a 1M frequency in half four different times, giving us four different frequencies. We did this by holding set and reset inactive and connecting D to Q(not). This is known as cascading. We them made a multiplexer board to interface with the timing generator. The same process was taken to create the board as the other timing generator board. The multiplexer used a series of combination gates to input four different frequency and output one. A four in DIP switch was used to toggle between the different frequencies. The finished product turned out well and took 5-7 school day to complete. Cowboy Chad enjoyed interfacing the boards and observing how it works. Mr. Medeiros stated that I (and the whole class) should go to the Special Olympics so I think that means my project was high quality. Yes I Does!

2.A.01.05Maintain a sanitary and clutter-free work environment.

2.F.02.03 Specify pin numbers and manufacturer markings on digital IC's.

2.B.02.02 Create a basic circuit using schematic software.