EXPERIMENT - 8

OBJECTIVE

To study and test DAC-0808 Circuit.

THEORY

A Digital-To-Analog Converter (DAC) transforms digital data into an analog signal. The DAC-0808 is an 8-bit DAC that converts inputs (0-255) into a proportional output voltage, commonly used in audio systems, signal processing, & control applications.

PROCEDURE

Connect +5v, +15v, -15v, & GND from Main Board to Experimental Board.

Supply (+/-12v) for Op-Amp is internally provided

Supply (+5v, GND) for the circuit is internally provided

The Amplifier circuit is internally provided to this circuit DAC using Op-Amp 741

Let us assume,

When LED glows it indicates logic HIGH or 1.

When LED dosen't glow it indicates logic LOW or 0.

When input switch is unpressed it indicates switch is in 'L' position

When input switch is pressed it indicates switch is in 'H' position.

D7 58	D6 57	D5 56	D4 55	D3 54	D2 53	D1 52	D0 51	Volts (T1) OPM
0	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0	0.668
0	0	1	0	0	0	0	0	1.34
0	0	1	0	0	0	0	0	2.68
1	0	0	0	0	0	0	0	5.35
1	1	0	0	0	0	0	0	8
1	1	1	0	0	0	0	0	9.36
1	1	1	1	0	0	0	0	9.95
1	1	1	1	1	1	1	1	10.46

Connect +5v, +15v,-15v, & GND from Main board to Experiment board.

Supply (+4,-15v) for Op-Amp is internally provided.

supply (+5v, GND) for the circuit is internally provided.

The Amplifier circuit is internally provided in the circuit by using Op-Amp 741.

Let us assume:

When LED glows it indicates logic HIGH or 1.

When LED doesn't glow it indicates logic low or 0.

When input switch is opened it indicates switch is in ...

1) Connect the AC Supply to the kit

2) Connect O0 to I1, O1 to I2, O2 to I3 ... & D7 to I8.

3) Connect (v+) of DPM-1 on main board to pin 6 of IC 741 & (v-) of DPM-1 on main board to GND of experimental Board. Select range 20v with the help of selector switch sws

4) Connect fixed supplies +5v, GND, +15v, & -15v, from main board to +5v, GND, +12v,& -12v of the module, respectively.

5) set the input switches (S1-S6) initially to 'L' position.

6) Switch ON the power supply of main board.

7) Observe the output at pin no 6 of IC 741 of Experimental Board on DPM-1,

8) Switch S1 to 'H' position.

9) Measure the output at pin 6 of IC 741. Similarily keep S2 & S3...S8 and note down the voltage (on DPM-1) at pin 6 of IC 741.

10) keep all the input switches at 'H' position and note down the voltage at pin 6 of IC 741 on DPM-1.

11) With each Manual Pulse we can see that the values gets incremented as shown in truth table.

12) Instead of manual Pulse we can provide by connecting 1Hz to CLK.

13) Counting will be faster

14) Set the input switch so to low to reset counting.

Down-Counter

15) Set the inputs switches s1 to LOW Position & S0 & S2 to High position

16) Observe the output at LEDs & verify truth table.

17) With each manual pulse we can see that the values gets decremented.

18) Instead of manual pulse we can provide fixed Clock by connecting 1Hz to CLK

19) The counting will be faster

20) Set the input switch to S0 to LOW position to reset counting.

RESULT

DAC-0808 circuit is studied & voltage is measured using vattmeter.

INPUT					
S1	S2	LED 4	LED 3	LED 2	LED 1
L	H	H	H	H	H
L	H	H	H	H	L
L	H	H	H	L	H
L	H	H	H	L	L
L	H	H	L	H	H
L	H	H	L	H	L
L	H	H	L	L	H
L	H	H	L	L	L
L	H	L	H	H	H
L	H	L	H	H	L
L	H	L	H	L	H
L	H	L	H	L	L
L	H	L	L	H	H
L	H	L	L	L	H
L	L	L	L	L	L

Conclusion :

DAC - 0808 circuit is studied & voltage is measured using
volt meter

Assessment of the Experiment / Assignment :

Timely Submission (07)	Presentation (06)	Understanding (12)	Total (25)	Signature of Teacher with date
07	06	11	24	BPatil 21/10/24