Stepper Motor

STEPPER MOTOR CONTINUOUS MODE ANTI-CLOCKWISE DIRECTION:
Start coding
A _____

    MOV AL, 80
    OUT 67, AL
    Loop1: MOV AL, 0A
    OUT 61, AL
    CALL Delay

    MOV AL, 09
    OUT 61, AL
    CALL Delay

    MOV AL, 05
    OUT 61, AL
    CALL Delay

    MOV AL, 06
    OUT 61, AL
    CALL Delay
    JMP Loop1
---Double Enter
Start coding
A _____

    Delay:
    PUSH BX
    PUSH CX
    MOV BX, 0007

    Loop3: MOV CX, FF00
    To: LOOP To
    DEC BX
    JNZ Loop3
    POP CX
    POP BX
    RET
--Double Enter and run the code by **G** _____
Q 1. Does your motor rotates in Anticlockwise direction? Yes/No

STEPPER MOTOR CONTINUOUS MODE CLOCKWISE DIRECTION
Start coding
A ____

    MOV AL, 80
    OUT 67, AL
    Loop1: MOV AL, 0A
    OUT 61, AL

CALL Delay

        MOV AL, 06
        OUT 61, AL
        CALL Delay

        MOV AL, 05
        OUT 61, AL
        CALL Delay

        MOV AL, 09
        OUT 61, AL
        CALL Delay

        JMP Loop1
---Double Enter
Start coding
A _____
        Delay:
        PUSH BX
        PUSH CX
        MOV BX, 0007
        Loop3: MOV CX, FF00

        To: LOOP To
        DEC BX
        JNZ Loop3
        POP CX
        POP BX
        RET
--Double Enter and run the code by **G** _____
Q 2. Does your motor rotates in Clockwise direction? Yes/No

DAC

PROGRAM 1 : RAMP WAVE GENERATION FOR DAC
        MOV AL, 89
        OUT 67, AL
        MOV AL, 01
        OUT 63, AL
        Do: INC AL
        OUT 61, AL
        JMP Do
Q 1. Did you get Ramp waveform as output on oscilloscope? Yes/No
PROGRAM 2 : SQUARE WAVE GENERATION FOR DAC
        MOV AL, 89
        OUT 67, AL
        MOV AL, 01
        OUT 63, AL

```
DO: MOV AL, 00
OUT 61, AL
CALL 4000
MOV AL, FF
OUT 61, AL
CALL 4000
JMP DO

DELAY ROUTINE
PUSH BX
PUSH CX
MOV BX, 0007
Loop: MOV CX, 0010
LOOP 4008
DEC BX
JNZ Loop
POP CX
POP BX
RET
```
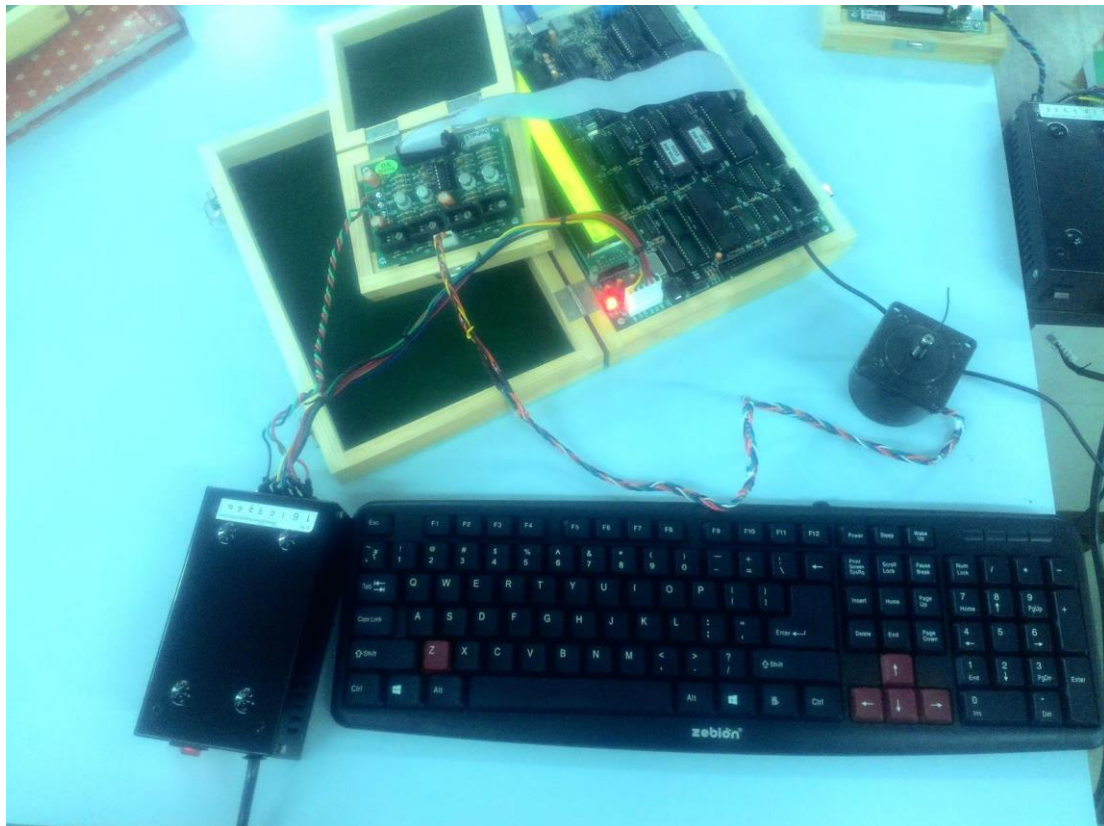
Wire connection

Experiment -11

Fig 1 Circuit connection of Dyna-86L (i.e.8086) with STP-PIO card (Stepper motor -process output image card)
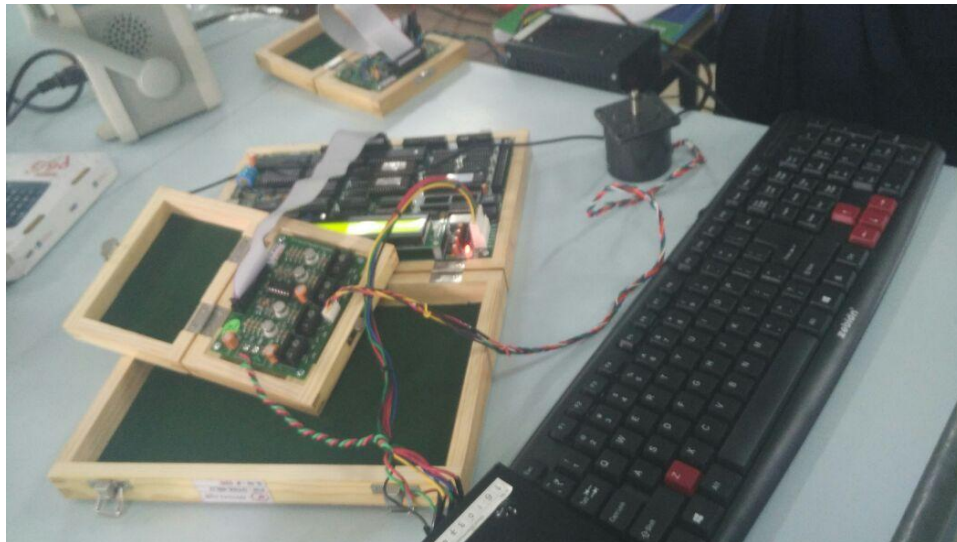
Fig 2 Circuit connection of Dyna-86L (i.e.8086) with STP-PIO card (Stepper motor -process output image card)

Fig 3 Dyna-86LU kit (Dynalog 8086 LCD USB kit)

Fig 4 STP-PIO card (Stepper motor card)
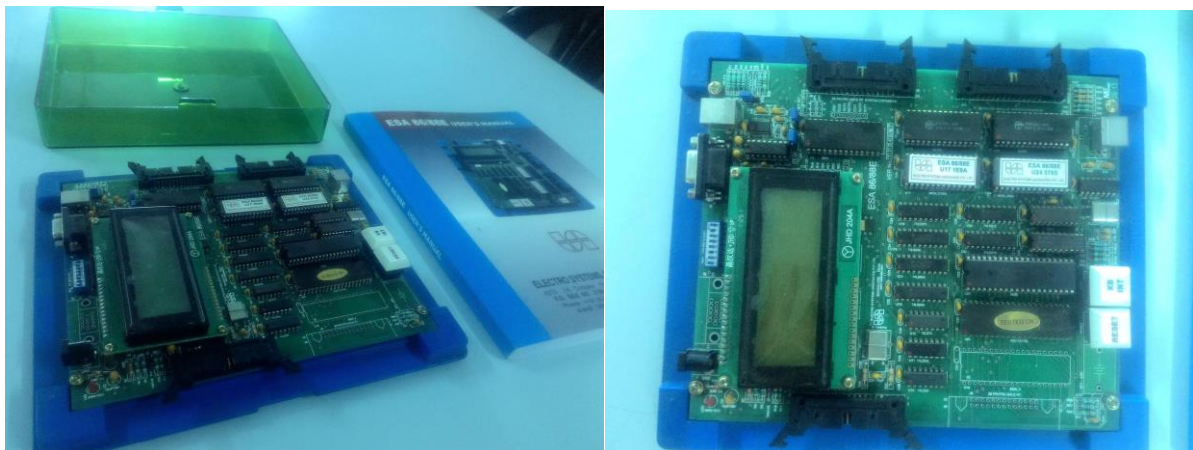
Fig 5 Old 8086 kit

Experiment 12
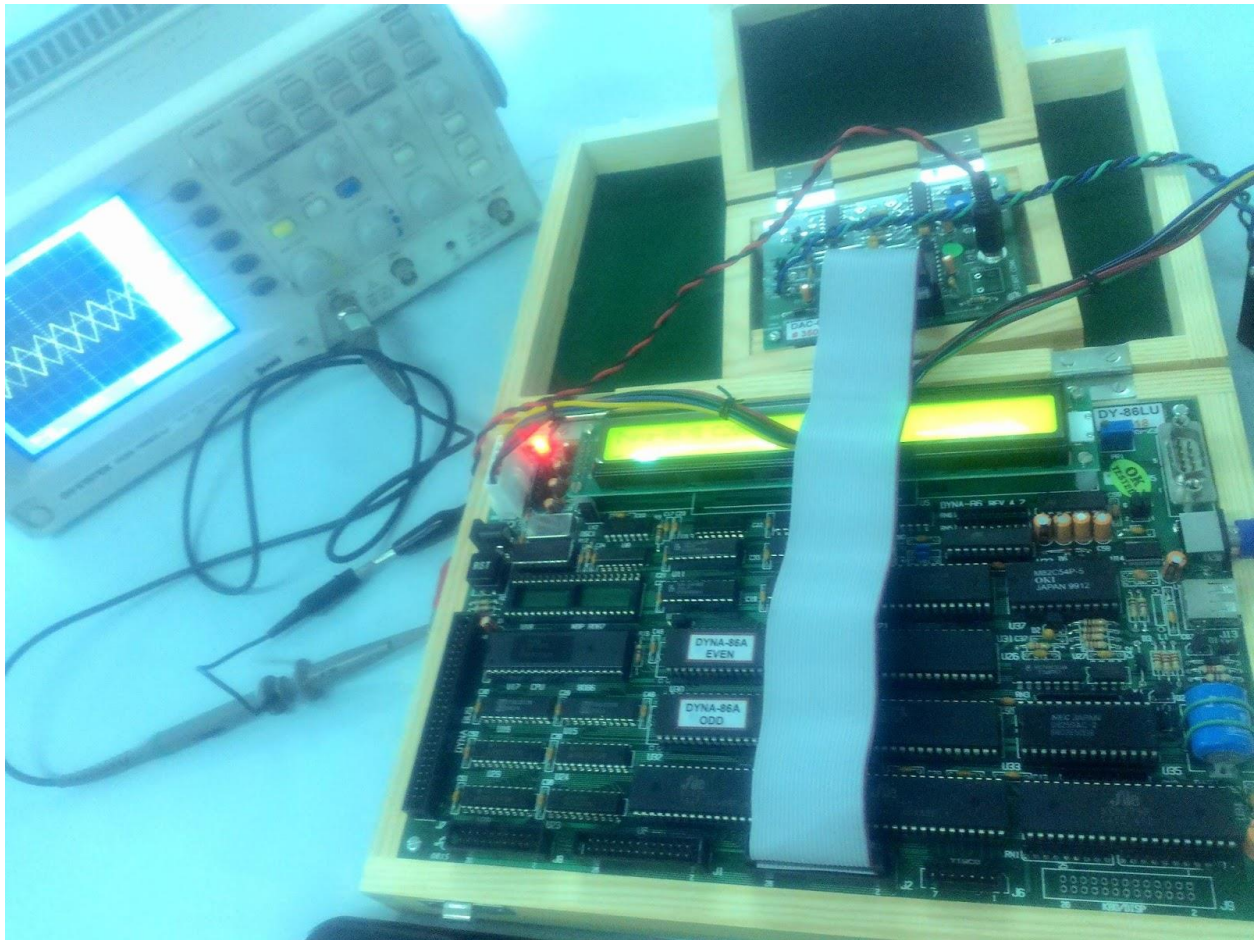**Aim:** Perform interfacing of DAC
*Images for reference are given below
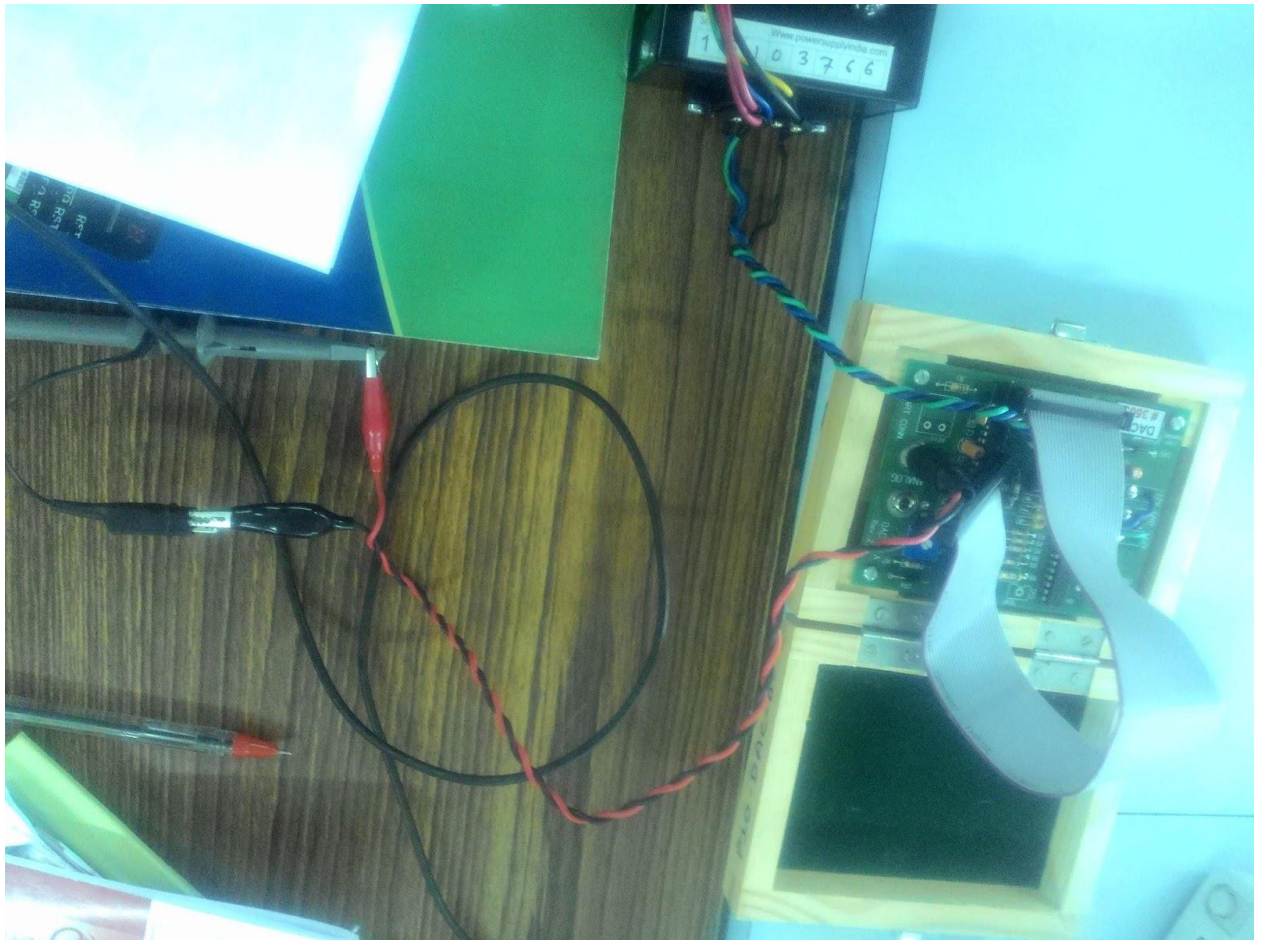
Fig 1 Circuit connection

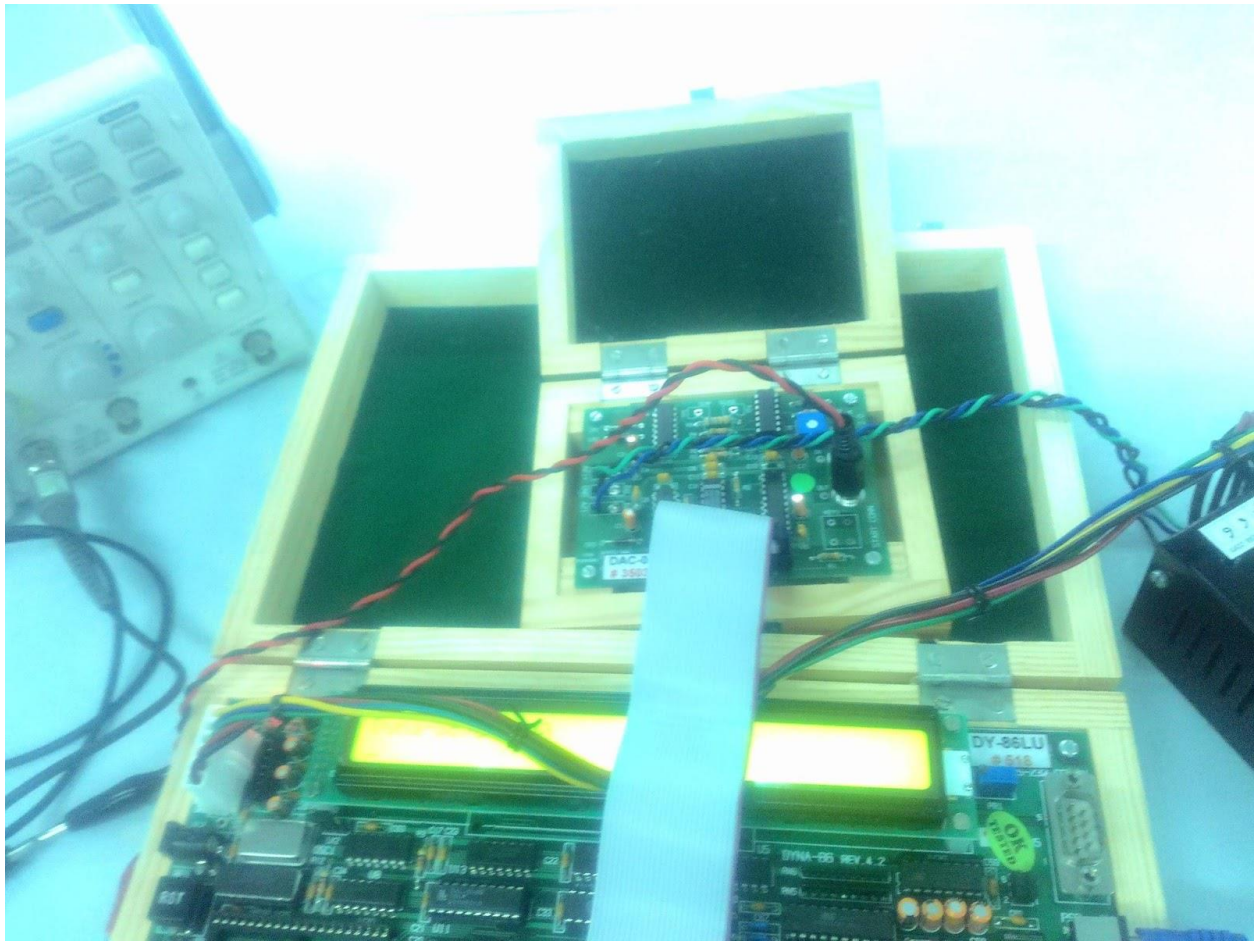**Fig 2** Circuit connection

Fig 3 Wire Connections
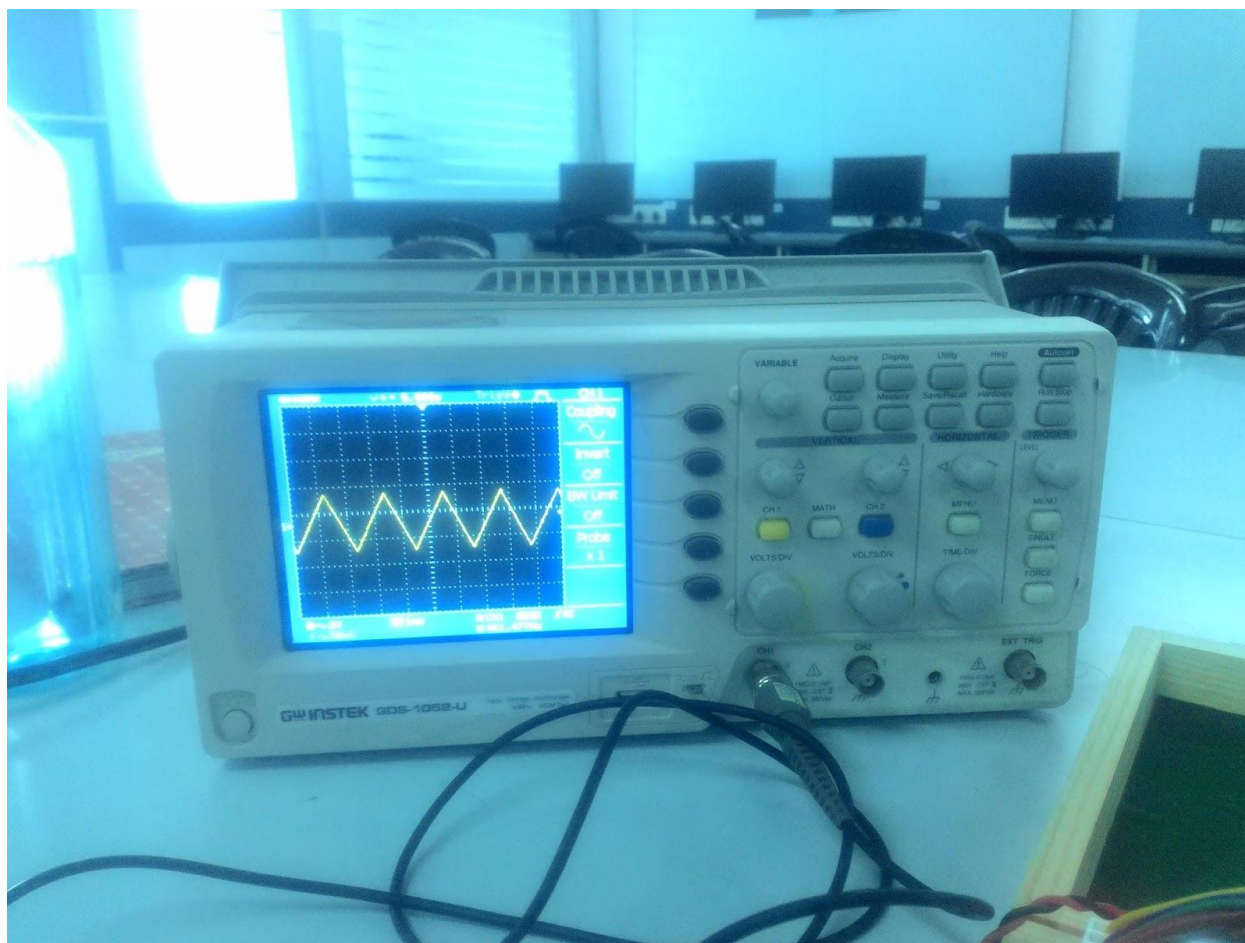
Fig 4 Circuit Connection

Fig 5 Triangular waveform as Output on Oscilloscope
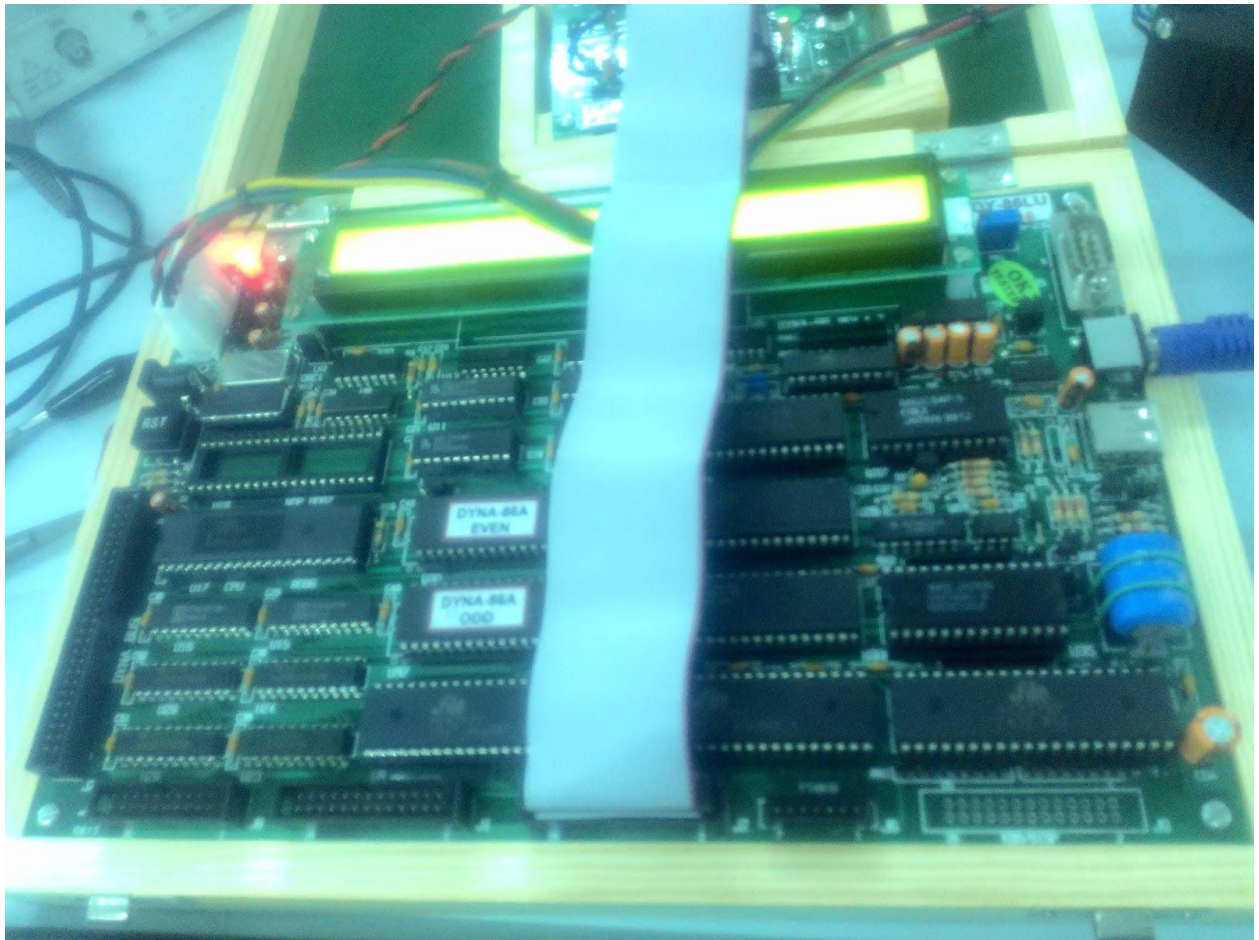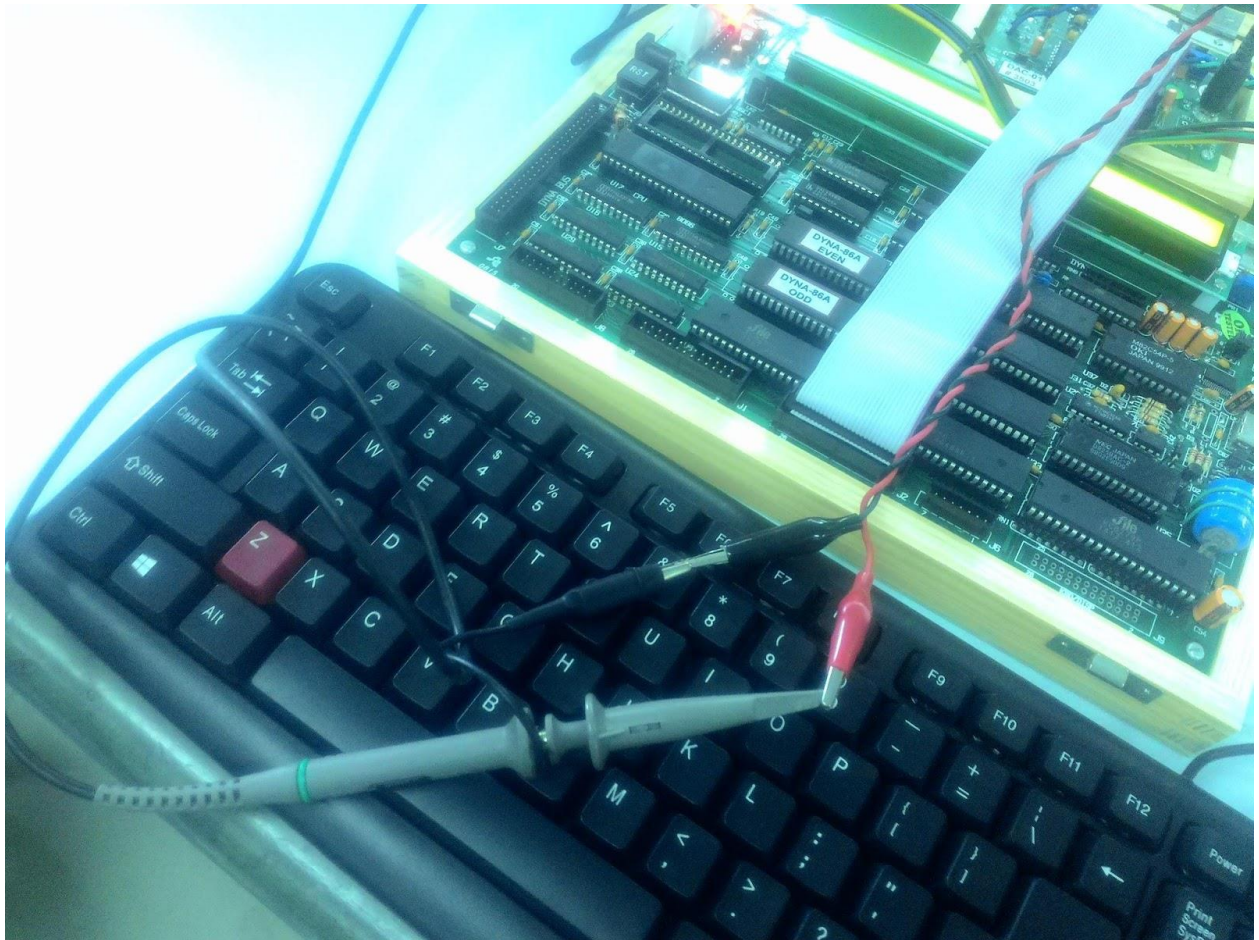
Fig 6 Circuit Connection

Fig 7 Wire Connection between oscilloscope and DAC card

Fig 8 DAC-01 card