

Procedure:

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- The PCIDIOT card is already connected to PCI slot of the PC
- Connect the FLAT cable coming out of the PCI card to the stepper motor driver board
- Connect the stepper motor connection to the driver board. Proper care should be taken while doing connection as wrong connection may spoil the entire board. The connection slots have to be properly identified.
- Connect the power supply to the driver board
- Call any one of the Lab Instructors and ensure the connections are correct before switching on the power supply
- Switch on the PC and Load Ubuntu Linux
- Login as Micro and password as micro
- Load the terminal window in Ubuntu Linux
- Enter a command `sudo virt-manager`
- When it prompt for the enter the password micro
- Load windows xp through Virtual manager
- Load the command window
- Change the directory `c:\micro`
- Using an dos command `chkdsk` identify the port address of the 8255
- Using edit command type the following program
- The Program shown below will rotate the stepper motor by 360 degrees i.e one full round.

Code:

```
MODEL SMALL
.STACK 100h
.DATA
CR EQU 0c2b3H
PA EQU 0c2b0H
PB EQU 0c2b1H
PC EQU 0c2b2H
message1 DB 'DEMONSTRATION PROGRAM FOR STEPPER MOTOR:',13,10,'$'
message2 DB 13,10,'The program is running...:',13,10,'$'
.CODE
START:
MOV AX,@DATA
MOV DS,AX
MOV AH,9h
MOV DX, OFFSET message1
INT 21h
MOV AH,9h
MOV DX, OFFSET message2
INT 21h
MOV DX,CR
MOV AL,80h
OUT DX,AL
MOV BL,50
begin: MOV AL,11h
instead of 11H
CALL OUT_A
CALL DELAY
MOV AL,22h
CALL OUT_A
```

```

CALL DELAY
MOV AL,44h
CALL OUT_A
CALL DELAY
MOV AL,88h
CALL OUT_A
CALL DELAY
DEC BI
JNZ begin
MOV AH, 4CH
INT 21H
OUT_A: MOV DX, PA
OUT DX AL
RET
DELAY: MOV CX, 0FFFFH
D1: MOV AX, 05FFFH
D1: DEC AX
JNZ D1
DEC CX
JNZ D2
RET
END START;

```

Assignment:

To rotate in other direction:

MOV AL,11h ; To rotate in opposite direction, change the data as 88H instead of 11H

MOV AL,22h ;To rotate in opposite direction, change the data as 44H instead of 22H

MOV AL,44h ;To rotate in opposite direction, change the data as 22H instead of 44H

MOV AL,88h ;To rotate in opposite direction, change the data as 11H instead of 88H

To increase the number of rotations:

BL = 150 from BL = 50 for 3 rotations.

Similarly multiple of 50 for any number of rotations we want.

Video: Uploaded on class room