

## EXPERIMENT-10A

### HARDWARE INTERFACING – ELEVATOR

**Aim:** To Interface an elevator to 8086 Microprocessor through 8255 Programmable

**Equipment's:** PC, 8255 Interfacing card (PCI Card) Elevator Interface

**Video recording of demonstration:**

[lab10A\_op\_2021A7PS0136U.mp4]

**Assembly language program for Elevator interface to ESA PCI-DIOT**

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MODEL SMALL

STACK 5000h

.DATA

msg1 DB 'Demo program for elevator interface', 13, 10, '\$'

msg2 DB 'Press switches on interface &lt;del&gt;', 13, 10, '\$'

msg3 DB 'This prog. is running ...', 13, 10, 'Press any key to exit', 13, 10, '\$'

DelayRate DW 0FFFFh

CR EBU 0C263h

PA EBU 0C260h

PB EBU 0C261h

PC EBU 0C262h

Fcode DB 00h, 03h, 06h, 09h

Fcb DB 0E0h, 0D3h, 0B6b, 79h

.code

MOV AX, @Data

MOV DS, AX

MOV AH, 9h

MOV DX, offset msg1

INT 21h

MOV AH, 9h

MOV DX, offset msg2

INT 21h

MOV AH, 9h

MOV DX, offset msg3

INT 21h

MOV DX, CR

MOV AL, 082h

OUT DX, AL

Loop1:

MOV AL, AH

OR AL, 0F0h

MOV DX, PA

OUT DX, AL

MOV DX, PB

```

LOOP2:
MOV CH, AH
MOV AH, 01H
INT 16H
JNZ EXIT0
MOV AH, CH
IN AL, DX
AND AL, 0FH
CMP AL, 0FH
JZ LOOP2
MOV SI, 00H
FINDF:
ROR AL, 01H
JNE FOUND
INC SI
JMP SHORT FINDF
FOUND:
MOV AL, FCOB[SI]
CMP AL, AH
JA Goup
CLEAR:
MOV AL, FCLR[SI]
MOV DX, PA
OUT DX, AL
JMP SHORT LOOP1
Goup:
CALL DELAY
INC AH
XCHG AL, AH
OR AL, 0F0H

```

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MOV DX, PA
OUT DX, AL
AND AL, 0FH
XCHG AH, AL
CMP AL, AH
JNZ Goup
JMP SHORT CLEAR
GODN:
CALL DELAYL
DEC AH
XCHG AH, AL
OR AL, 0F0H
MOV DX, PA
OUT DX, AL
AND AL, 0FH
XCHG AL, AH
CMP AL, AH
JNZ GODN
JMP SHORT CLEAR
MOV AH, 4CH
INT 21H
DELAY:
PUSH CX
PUSH AX
MOV CX, 0FFFFH
LOOP3:
MOV AX, 0AFFH
LOOP4:
DEC AX
JNZ LOOP4

```

```
LOOP LOOP3  
POP AX  
POP CX  
RET  
EXITP  
MOV AH, 4CH  
INT 21H  
END
```