

# Exp No: 11 - Waveform Generation Using DAC Interface.

| Input data in Hex | o/p voltage (V) |
|-------------------|-----------------|
| 00                | -5              |
| 01                | -4.96           |
| ⋮                 | ⋮               |
| 7F                | 0               |
| ⋮                 | ⋮               |
| FE                | 4.96            |
| FF                | 5               |

Pin Connection in Board

|   |         |
|---|---------|
| 0 | DAC1    |
| 0 | DAC2    |
| 0 | ADC i/p |
| 0 | GND     |

| Data Reg Address |
|------------------|
| DAC1 - C0        |
| DAC2 - C8        |

1. To generate square-wave at the output of DAC 2.

|       |      |          |      |          |
|-------|------|----------|------|----------|
| 0000: | 1000 | B0 00    | MOV  | AL, 00   |
| 0000: | 1002 | E6 C8    | OUT  | C8, AL   |
| 0000: | 1004 | E8 09 00 | CALL | 1010     |
| 0000: | 1007 | B0 FF    | MOV  | AL, FF   |
| 0000: | 1009 | E6 C8    | OUT  | C8, AL   |
| 0000: | 100B | E8 02 00 | CALL | 1010     |
| 0000: | 100E | EB F0    | JMP  | 1000     |
| 0000: | 1010 | B9 FF 05 | MOV  | CX, 05FF |
| 0000: | 1013 | E2 FE    | LOOP | 1013     |
| 0000: | 1015 | C3       | RET  |          |

2. To create a saw-tooth wave at the output of DAC 2.

|       |      |       |     |        |
|-------|------|-------|-----|--------|
| 0000: | 1000 | B0 00 | MOV | AL, 00 |
| 0000: | 1002 | E6 C0 | OUT | C0, AL |
| 0000: | 1004 | FE C0 | INC | AL     |
| 0000: | 1006 | 75 FA | JNZ | 1002   |
| 0000: | 1008 | EB F6 | JMP | 1000   |

3. 4. To generate triangular waveform at DAC 2 output.

|       |      |       |     |       |
|-------|------|-------|-----|-------|
| 0000: | 1000 | B3 00 | MOV | BL,00 |
| 0000: | 1002 | 88 D8 | MOV | AL,BL |
| 0000: | 1004 | E6 C8 | OUT | C8,AL |
| 0000: | 1006 | FE C3 | INC | BL    |
| 0000: | 1008 | 75 F8 | JNZ | 1002  |
| 0000: | 100A | B3 FF | MOV | BL,FF |
| 0000: | 100C | 88 D8 | MOV | AL,BL |
| 0000: | 100E | E6 C8 | OUT | C8,AL |
| 0000: | 1010 | FE CB | DEC | BL    |
| 0000: | 1012 | 75 F8 | JNZ | 100C  |
| 0000: | 1014 | EB EA | JMP | 1000  |