

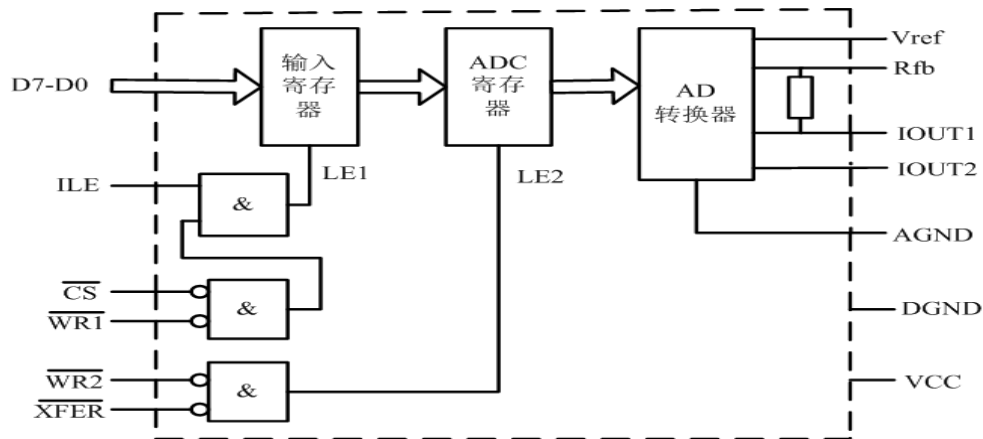
0832 实验

一、实验内容

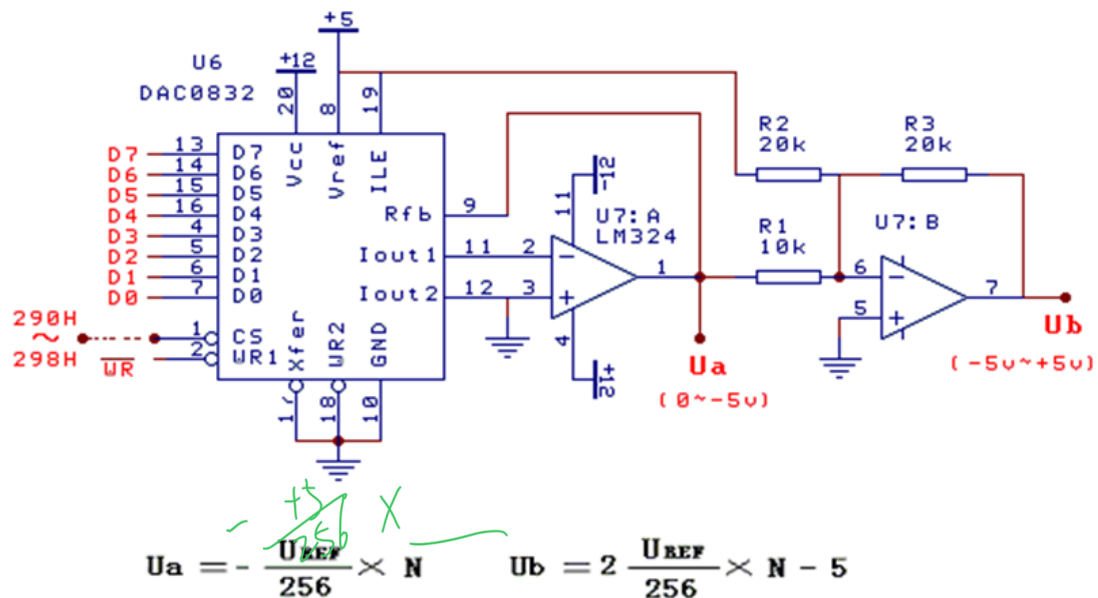
- 1、使用软件延时方法实现锯齿波、方波、三角波、梯形波。
- 2、使用 8253 产生 1ms 脉冲重新实现上述要求

二、0832 知识

1. 结构示意图



2.8 位 D/A 转换器 DAC0832 输入数据与输出电压的关系参考实验原理图：



(U_{REF} 表示参考电压, N 表示数数据), 这里的参考电压为PC机的+5V电源。

产生锯齿波只须将输出到 DAC0832 的数据由 0 循环递增即可

三、参考程序

1. 延时法，16 次产生锯齿波，最高点-5V

DATA SEGMENT

DATA ENDS

STACK1 SEGMENT PARA STACK

DW 20H DUP(0)

STACK1 ENDS

CODE SEGMENT

ASSUME CS: CODE, DS:DATA, SS:STACK1

START:

MOV AX, DATA

MOV DS, AX

MOV AL, 00H

AGAIN:

MOV DX, 280H

OUT DX, AL

CALL DELAY

ADD AL, 10H

JMP AGAIN

MOV AH, 4CH; 退出到 DOS，即结束程序运行

INT 21H

DELAY PROC NEAR

PUSH CX

MOV CX, 0FFFFH

L1: LOOP L1

MOV CX, 0FFFFH

L2: LOOP L2

POP CX

RET

DELAY ENDP

CODE ENDS

END START

2. 延时法，32 次产生锯齿波，最高点-5V

DATA SEGMENT

DATA ENDS

CODE SEGMENT

```

        ASSUME CS: CODE, DS:DATA
START:
        MOV  AX,  DATA
        MOV  DS,  AX

        MOV  AL,  00H
AGAIN:
        MOV  DX,  280H
        OUT  DX,  AL
        CALL DELAY
        ADD  AL,  08H
        JMP  AGAIN
        MOV  AH,  4CH
        INT  21H

DELAY  PROC NEAR
        PUSH CX
        MOV  CX,  0FFFFH
L1:     LOOP  L1
        MOV  CX,  0FFFFH
L2:     LOOP  L2
        POP  CX
        RET
DELAY  ENDP

CODE  ENDS
END  START

```

3. 延时法，16 次产生三角波，最高点-2.5V

DATA SEGMENT

DATA ENDS

CODE SEGMENT

```

        ASSUME CS: CODE, DS:DATA
START:
        MOV  AX, DATA
        MOV  DS, AX
        MOV  AL, 0H

DRAW_ASCEND_LINE: ;画上升的边
        MOV  DX, 280H
        OUT  DX, AL
        CALL DELAY
        CMP  AL, 80H
        JZ   DRAW_DESCEND_LINE ;跳转到画下降的边
        ADD  AL, 08H
        JMP  DRAW_ASCEND_LINE:

DRAW_DESCEND_LINE: ;画下降的边
        SUB  AL, 08H
        MOV  DX, 280H
        OUT  DX, AL
        CALL DELAY
        CMP  AL, 00H
        JZ   DRAW_ASCEND_LINE ;跳转到画上升的边
        JMP  DRAW_DESCEND_LINE
        MOV  AH,4CH ;退出到 DOS, 即程序运行结束
        INT  21H

DELAY  PROC    NEAR
        PUSH  CX
        MOV  CX,200H
L1:    LOOP  L1
        POP  CX
        RET
DELAY  ENDP
CODE  ENDS
END   START

```

4. //延时法，16 次产生梯形波，最高点-2.5V

```

DATA SEGMENT
DATA ENDS
CODE  SEGMENT

```

```

        ASSUME CS: CODE,  DS:DATA
START:
        MOV  AX, DATA
        MOV  DS, AX
        MOV  AL, 00H

DRAW_ASCEND_LINE: ;画上升的腰
        MOV  DX, 280H
        OUT  DX, AL
        CALL DELAY
        CMP  AL, 80H
        JZ   DRAW_HORIZON_LINE ;跳转到画梯形上底
        ADD  AL, 08H
        JMP  DRAW_ASCEND_LINE

DRAW_HORIZON_LINE: ;画梯形上底
        MOV  CX, 10H
AGAIN:
        OUT  DX, AL
        CALL DELAY
        LOOP AGAIN

DRAW_DESCEND_LINE: ;画下降的腰
        SUB  AL, 08H
        MOV  DX, 280H
        OUT  DX, AL
        CALL DELAY
        CMP  AL, 00H
        JZ   DRAW_ASCEND_LINE: ;跳转到画上升的腰
        JMP  DRAW_DESCEND_LINE
        MOV  AH, 4CH ;退出到 DOS, 即程序结束
        INT  21H

DELAY PROC NEAR
        PUSH CX
        MOV  CX, 200H
L1:     LOOP L1
        POP  CX
        RET
DELAY ENDP

```

CODE ENDS

END START