```
        MOV DAIFAZHI,#0H
 KEY22:
        JB KEY2,KEY33
        CLR LED
        MOV R6,#5            ;DELAY 10MS
        LCALL DELAY2MS
        JB KEY2,KEY33        ;KEY PRESS DEBOUNCE
        JNB KEY2,$           ;WAIT KEY PRESSED RELEASE
      SETB LED
      LCALL RESET
      LCALL VOICE          ;TWO LINE SEND CODE SUBPROGRAM
      INC VOICENUM         ;CODE VALUE ADD 1
        MOV A,VOICENUM
      CJNE A,#0F8H,XX4     ;WHETHER VOLUME REACH MAX. VALUE
XX4: JC KEY33
      MOV VOICENUM,#0F0H
KEY33:
       JB KEY3,KEY44
       CLR LED
      MOV R6,#5            ;DELAY 10MS
      LCALL DELAY2MS
      JB KEY3,KEY44        ; KEY PRESS DEBOUNCE
      JNB KEY3,$           ;WAIT KEY PRESSED RELEASE
      NOP
      INC CLKNUM
      SETB LED
KEY44:
      JB KEY4,KEY55
      CLR LED
      MOV R6,#5            ; DELAY 10MS
      LCALL DELAY2MS
      JB KEY4,KEY55        ; KEY PRESS DEBOUNCE
      JNB KEY4,$           ;WAIT KEY PRESSED RELEASE

      NOP
      DEC CLKNUM
      MOV A,CLKNUM
      CJNE A,#0H,XX5       ;   SEND CODE KEEP 100US AT LEAST
      MOV CLKNUM,#1
XX5:
      SETB LED
KEY55:
```

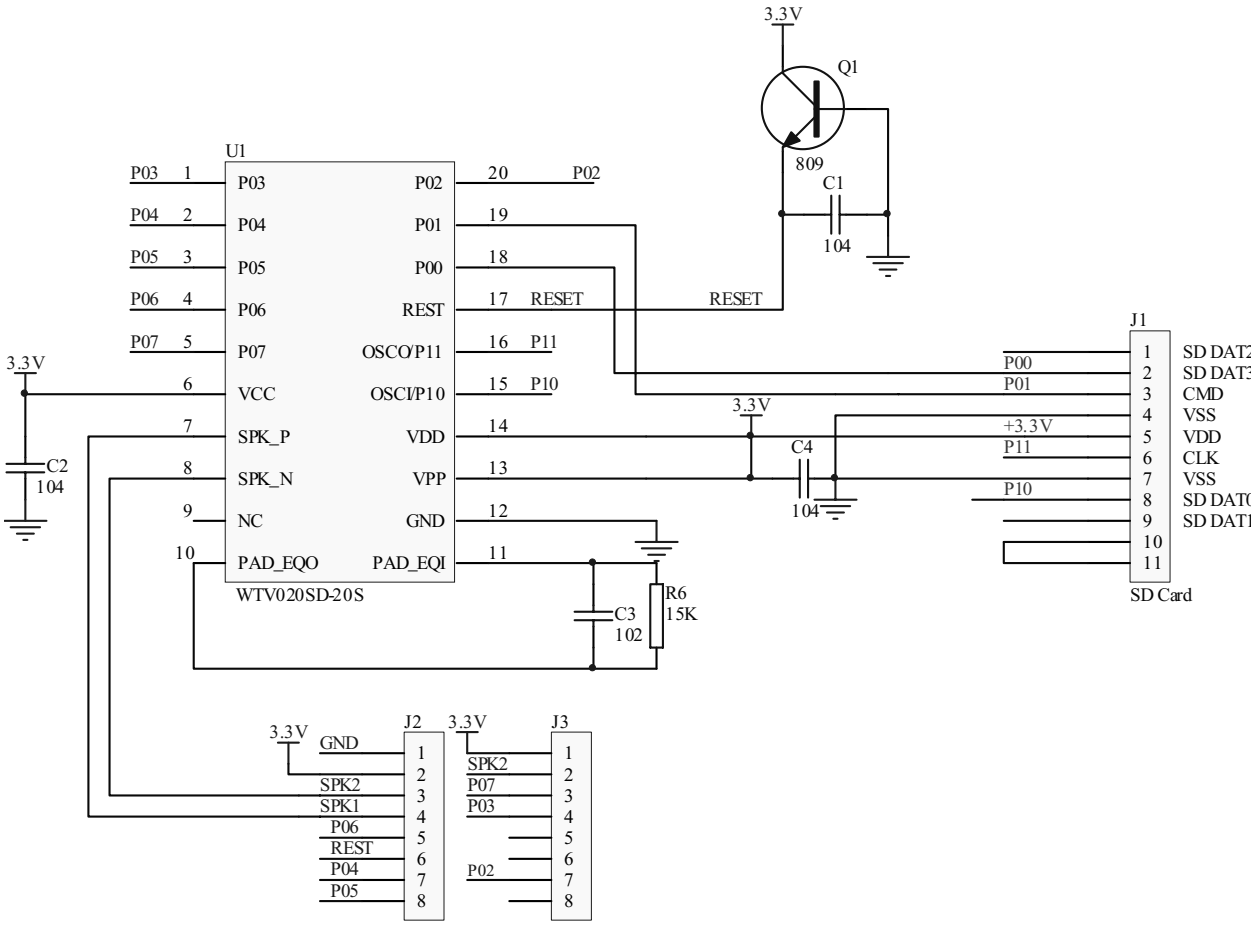
```
        JB KEY5,MAIN
        CLR LED
        MOV R6,#5              ; DELAY 10MS
        LCALL DELAY2MS
        JB KEY5,XX6            ;WAIT KEY PRESSED RELEASE
        JNB KEY5,$             ;WAIT KEY PRESSED RELEASE
        LCALL RESET
        MOV VOICENUM,#0F6H
        LCALL VOICE
        LCALL TWO_LINE
XX6:
      LJMP MAIN
TWO_LINE:                      ;///VOICE ADDRESS SEND CODE SUBPROGRAM
              CLR SCL
              MOV R6,#2
              LCALL DELAY1MS
              MOV A,#0
        LOOP1:
              CLR SCL
              RLC A
              MOV SDA,C
              MOV R6,CLKNUM
              LCALL DELAY50US
              SETB SCL
              MOV R6,CLKNUM
        LCALL DELAY50US
              DJNZ R5,LOOP1
              MOV R5,#08H
              MOV A,DAIFAZHI
     LOOP2:
              CLR SCL
              RLC A
              MOV SDA,C
              MOV R6,CLKNUM
              LCALL DELAY50US
              SETB SCL
              MOV R6,CLKNUM
       LCALL DELAY50US
              DJNZ R5,LOOP2
              MOV R5,#08H
              RET
```

```
VOICE:          ;////VOLUME VALUE SEND CODE SUBPROGRAM
        CLR SCL
        MOV R6,#2
        LCALL DELAY1MS
        MOV A,#0FFH
    LOOP3:
        CLR SCL
        RLC A
        MOV SDA,C
        MOV R6,CLKNUM
        LCALL DELAY50US
        SETB SCL
        MOV R6,CLKNUM
         LCALL DELAY50US
        DJNZ R5,LOOP3
        MOV R5,#08H
        MOV A,VOICENUM
    LOOP4:
        CLR SCL
        RLC A
        MOV SDA,C
        MOV R6,CLKNUM
        LCALL DELAY50US
        SETB SCL
        MOV R6,CLKNUM
        LCALL DELAY50US
        DJNZ R5,LOOP4
        MOV R5,#08H
        RET
RESET:
        CLR RST
        MOV R6,#3
        LCALL DELAY1MS
        SETB RST
        MOV R6,#130
        LCALL DELAY2MS
      RET
DELAY2MS:           ;DELAY 2MS SUBPROGRAM, CHANGE R6 VALUE CAN CHANGE DELAY TIME
L1:     MOV R7,#248
L2:     NOP
        NOP
        NOP
```

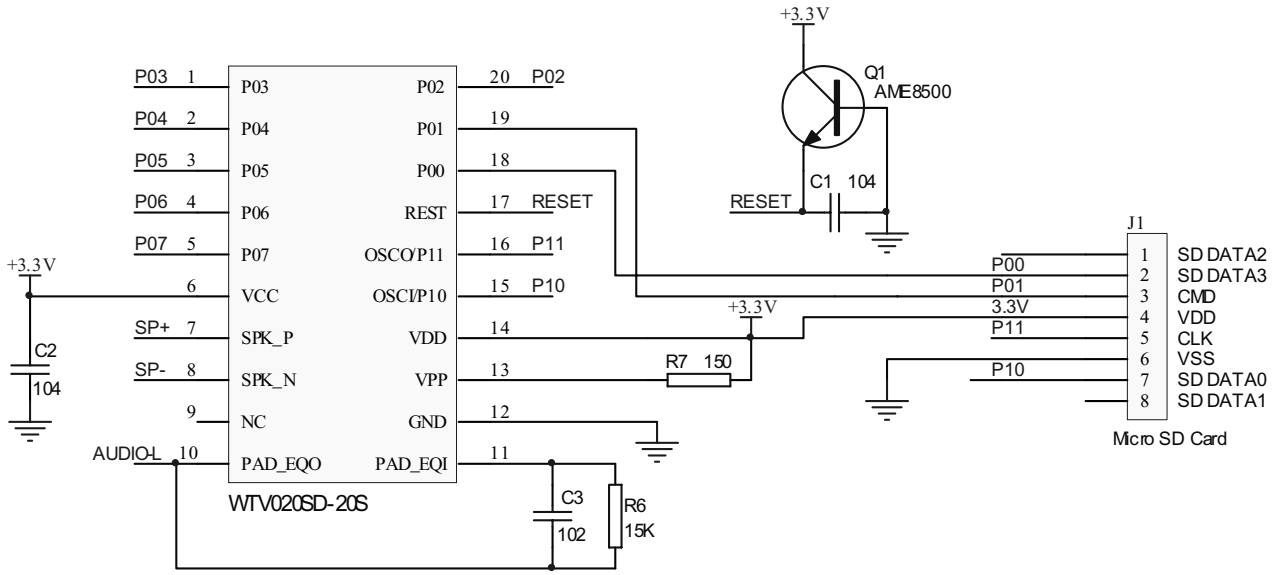
```
        NOP
        NOP
        NOP
        DJNZ R7,L2
        DJNZ R6,L1
        RET

DELAY50US:          ; DELAY 25UM SUBPROGRAM, CHANGE R4  VALUE CAN CHANGE DELAY TIME
L11:  MOV R7,#6
L22:
        NOP
        NOP
        DJNZ R7,L22
        DJNZ R6,L11
        RET
DELAY1MS:           ; DELAY 1MS SUBPROGRAM, CHANGE R6 VALUE CAN CHANGE DELAY TIME

L31:    MOV R7,#240
L32:        NOP
            NOP
          DJNZ R7,L32
          DJNZ R6,L31
         RET
            END
```

8.TYPICAL APPLICATION CIRCUIT

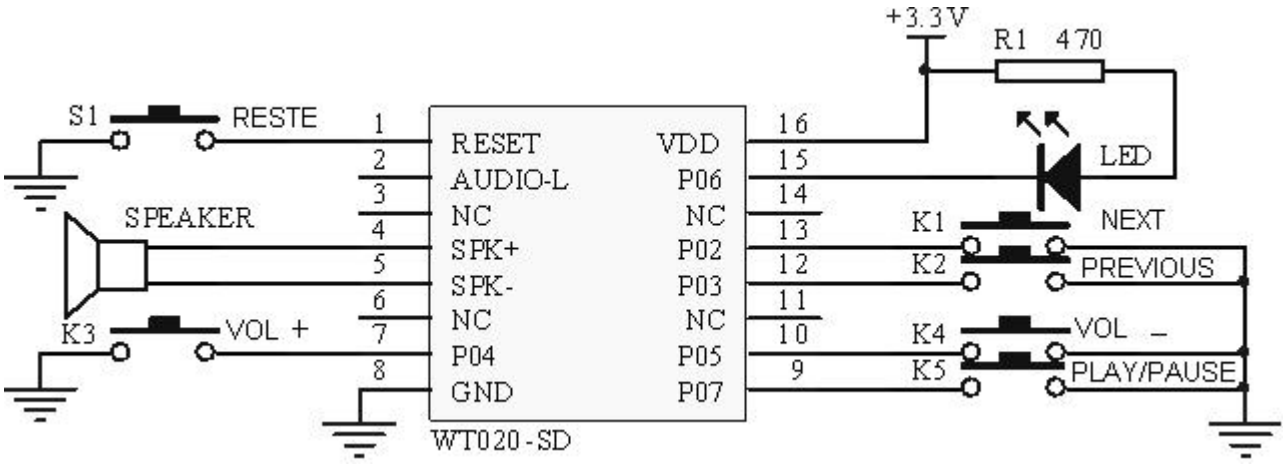
8.1.WTV020-SD-20S INNER CIRCUIT



8.2.WTV020-SD-16P INNER CIRCUIT



8.3.MP3 MODE APPLICATION CIRCUIT(PWM OUTPUT)

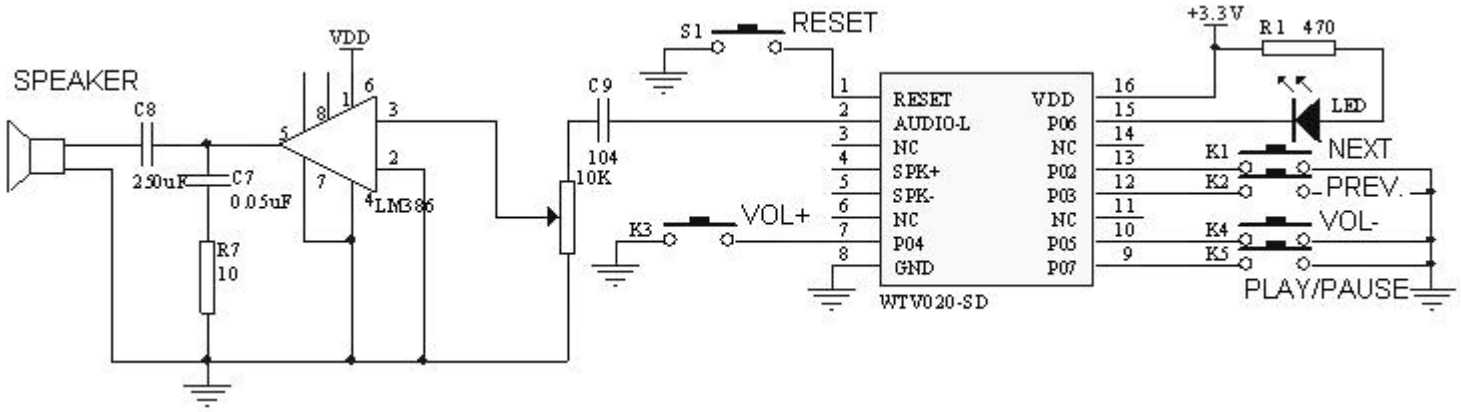


WTV020-SD-16P and WTV020-SD-20S,In PWM output, SPK+ ,SPK- connect to speaker .

In MP3 mode, edge trigger. Control I/Os by key short touch to GND, I/O P02 is PREVIOUS,P03 is NEXT,P04 is VOL+,P05 is VOL-,P07 is PLAY/STOP.

The power input is DC3.3v, if DC5V input, two serial diodes (IN4001 or 4007)connect to the positive input to low the voltage.

8.4.MP3 MODE APPLICATION CIRCUIT(DAC OUTPUT)

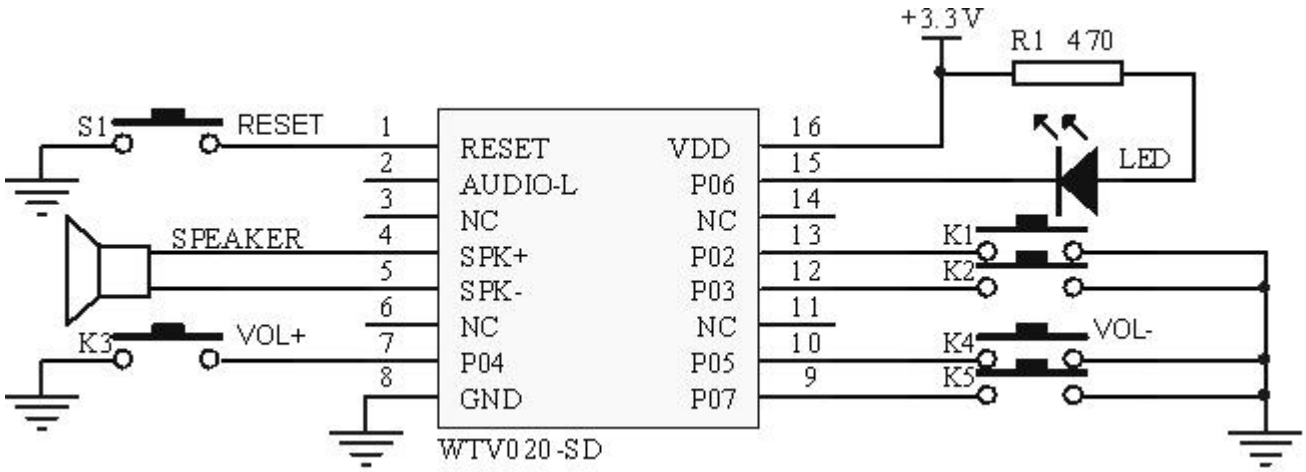


WTV020-SD-16P DAC output," Audio L" and module GND to amplifier. WTV020-SD-20S DAC output, "SPK+" and module GND to amplifier.

In MP3 mode, edge trigger. Control I/Os by key short touch to GND, I/O P02 is PREVIOUS,P03 is NEXT,P04 is VOL+,P05 is VOL-,P07 is PLAY/STOP.

The power input is DC3.3v, if DC5V input, two serial diodes (IN4001 or 4007)connect to the positive input to low the voltage.

8.5.KEY MODE(3 group of voice) APPLICATION CIRCUIT(PWM OUTPUT)



WTV020-SD-16P and WTV020-SD-20S in PWM output, "SPK+" ,"SPK-" to speaker .

In the key mode,edge trigger. GND short touch I/O to trigger voice. P02、P03、P04、P05、P07 trigger voice 1,voice 2, vol+,vol-,and voice 3 separately.

The power input is DC3.3v, if DC5V input, two serial diodes (IN4001 or 4007)connect to the positive input to low the voltage.