

```

#include      "8051.H"

LED          .EQU    P1.0
ADC_A       .EQU    P2.5
ADC_B       .EQU    P2.6
ADC_C       .EQU    P2.7
ADC_EOC     .EQU    P3.2

WAKTUMENIT  .EQU    $01          ;WAKTU
PENGIRIMAN SMS 01= 1 MENIT

                .ORG    $40

DATAADC1    .BLOCK  1
DATAADC     .BLOCK  1
DATABIN2BCD1 .BLOCK  1
DATABIN2BCD2 .BLOCK  1
DATAKIRIM   .BLOCK  1
DATAKIRIM1  .BLOCK  1
DATAKIRIM2  .BLOCK  1
BUFPDU1     .BLOCK  1
BUFPDU2     .BLOCK  1
BUFPDU3     .BLOCK  1
BUFPDU4     .BLOCK  1
BUFPDU5     .BLOCK  1
BUFPDU6     .BLOCK  1
BUFPDU7     .BLOCK  1
BUFPDU8     .BLOCK  1
BUFPDU9     .BLOCK  1
BUFPDU10    .BLOCK  1
BUFISI1     .BLOCK  1
BUFISI2     .BLOCK  1
BUFISI3     .BLOCK  1
BUFISI4     .BLOCK  1
BUFISI5     .BLOCK  1
BUFISI6     .BLOCK  1
BUFISI7     .BLOCK  1
BUFISI8     .BLOCK  1
BUFISI9     .BLOCK  1
BUFISI10    .BLOCK  1
STKIRIM     .BLOCK  1
HITDETIK   .BLOCK  1
HITMENIT    .BLOCK  1
DATAKOMA    .BLOCK  1
DATASUHULAMA .BLOCK  1

                .ORG    $60

```

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BUFKIRIM      .BLOCK  20

               .ORG    $0
               LJMP    START

START:         .ORG    $100
               MOV     SP, #20
               MOV     PSW, #00
               CLR     ADC_A
               CLR     ADC_B
               CLR     ADC_C
               SETB    LED
               MOV     DATAADC1, #0
               MOV     DATABIN2BCD1, #0
               MOV     DATABIN2BCD2, #0
               MOV     STKIRIM, #0
               MOV     HITMENIT, #0
               MOV     HITDETIK, #0
               MOV     DATAKOMA, #0
               MOV     DATASUHULAMA, #0

               LCALL   DELAY
               LCALL   DELAY

LOOP:         MOV     SP, #20

               LCALL   AMBILDATAADC

               MOV     A, DATASUHULAMA
               CJNE    A, DATAADC, SUHUBERUBAH
               LJMP    SUHUTIDAKBERUBAH
SUHUBERUBAH:  MOV     DATASUHULAMA, DATAADC
               LJMP    KIRIMDATA           ; SUHU
BERUBAH KIRIM KE HP

SUHUTIDAKBERUBAH:
               LCALL   TAMBAHKANDATAKOMA
               LCALL   DELAY1DETIK
               MOV     A, HITDETIK
               ADD     A, #1
               DA      A
               MOV     HITDETIK, A
               CJNE    A, #30, PASSLOOP
               MOV     HITDETIK, #0

KIRIMDATA:

```

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                                LCALL    PROC_PROSESDATAKEHP
                                MOV      HITMENIT,#0
                                MOV      HITDETIK,#0
PASSLOOP:
                                LJMP     LOOP

TAMBAHKANDATAKOMA:
                                MOV      A, DATAKOMA
                                ADD      A, #$1
                                DA       A
                                MOV      DATAKOMA,A
                                RET

```

```

;-----
; PENGIRIMAN DATA SMS KE HANDPHONE
;-----

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```

PROC_PROSESDATAKEHP:
                                LCALL    INITSERIALHP
                                MOV      A, DATAADC
                                SWAP     A
                                ANL      A, #$0F
                                ADD      A, #$30
                                MOV      BUFISI1,A
                                MOV      A, DATAADC
                                ANL      A, #$0F
                                ADD      A, #$30
                                MOV      BUFISI2,A

                                MOV      A, #'.'
                                MOV      BUFISI3,A
                                MOV      A, DATAKOMA
                                ANL      A, #$0F
                                ADD      A, #$30
                                MOV      BUFISI4,A

                                LCALL    KONVERSIKEPDU

                                MOV      R0, #BUFPDU1
                                MOV      R1, #BUFKIRIM

                                MOV      R2, #4
ISIKEBUFFKIRIM:
                                MOV      A, @R0
                                SWAP     A
                                ANL      A, #$0F

```

```

LCALL    KONVERSIKEASCII
MOV      @R1,A
INC      R1
MOV      A,@R0
ANL      A,#$0F
LCALL    KONVERSIKEASCII
MOV      @R1,A
INC      R0
INC      R1
DJNZ     R2, ISIKEBUFFKIRIM

LCALL    PENGIRIMAN_SMS
RET

```

```

;-----
;AMBILDATAADC:

```

```

CHANNEL0:  CLR      ADC_A
           CLR      ADC_B
           CLR      ADC_C
           LCALL    BACASENSOR
           LCALL    BIN2BCD
           MOV      DATAADC, DATABIN2BCD1
           RET

```

```

;-----
;ROUTINE PEMBACAAN SENSOR

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```

;-----
BACASENSOR:  MOV      R0,#0
           MOVX     @R0,A
TUNGGU1:    JB      ADC_EOC, TUNGGU1
TUNGGU2:    JNB     ADC_EOC, TUNGGU2
           MOVX     A,@R0
           RET

```

```

;-----
;ROUTINE KONVERSI KE PDU

```

```

;-----
KONVERSIKEPDU:
DATAKE1:    MOV      A, BUFISI1
           MOV      R3,#0
           LCALL    GESERKANAN
           MOV      BUFPDU1,A

           MOV      A, BUFISI2
           MOV      R4,#7

```

```

                                LCALL    GESERKIRI
                                ORL      A, BUFPDU1
                                MOV      BUFPDU1, A

DATAKE2 :                      MOV      A, BUFISI2
                                MOV      R3, #1
                                LCALL    GESERKANAN
                                MOV      BUFPDU2, A

                                MOV      A, BUFISI3
                                MOV      R4, #6
                                LCALL    GESERKIRI
                                ORL      A, BUFPDU2
                                MOV      BUFPDU2, A

DATAKE3 :                      MOV      A, BUFISI3
                                MOV      R3, #2
                                LCALL    GESERKANAN
                                MOV      BUFPDU3, A

                                MOV      A, BUFISI4
                                MOV      R4, #5
                                LCALL    GESERKIRI
                                ORL      A, BUFPDU3
                                MOV      BUFPDU3, A

DATAKE4 :                      MOV      A, BUFISI4
                                MOV      R3, #3
                                LCALL    GESERKANAN
                                MOV      BUFPDU4, A

                                MOV      A, BUFISI5
                                MOV      R4, #4
                                LCALL    GESERKIRI
                                ORL      A, BUFPDU4
                                MOV      BUFPDU4, A

DATAKE5 :                      MOV      A, BUFISI5
                                MOV      R3, #4
                                LCALL    GESERKANAN
                                MOV      BUFPDU5, A

                                MOV      A, BUFISI6
                                MOV      R4, #3
                                LCALL    GESERKIRI
                                ORL      A, BUFPDU5
                                MOV      BUFPDU5, A

```

```

DATAKE6:      MOV     A, BUFISI6
               MOV     R3, #5
               LCALL   GESERKANAN
               MOV     BUFPDU6, A
               MOV     A, BUFISI7
               MOV     R4, #2
               LCALL   GESERKIRI
               ORL    A, BUFPDU6
               MOV     BUFPDU6, A

DATAKE7:      MOV     A, BUFISI7
               MOV     R3, #6
               LCALL   GESERKANAN
               MOV     BUFPDU7, A

               MOV     A, BUFISI8
               MOV     R4, #1
               LCALL   GESERKIRI
               ORL    A, BUFPDU7
               MOV     BUFPDU7, A

DATAKE8:      MOV     A, BUFISI8
               MOV     R3, #7
               LCALL   GESERKANAN
               MOV     BUFPDU8, A
               MOV     A, BUFISI9
               MOV     R4, #0
               LCALL   GESERKIRI
               ORL    A, BUFPDU8
               MOV     BUFPDU8, A

               RET

GESERKIRI:    CJNE    R4, #0, GESERKIRI1
               RET

GESERKIRI1:   CLR    C
               RLC    A
               DJNZ   R4, GESERKIRI
               RET

GESERKANAN:   CJNE    R3, #0, GESERKANAN1
               RET

GESERKANAN1:

```

```

                                CLR C
                                RRC     A
                                DJNZ    R3, GESERKANAN
                                RET

KONVERSIKEASCII:
ASCIIA:      CJNE    A, #$A, ASCIIB
              MOV     A, #'A'
              RET
ASCIIB:      CJNE    A, #$B, ASCIIC
              MOV     A, #'B'
              RET
ASCIIC:      CJNE    A, #$C, ASCIID
              MOV     A, #'C'
              RET
ASCIID:      CJNE    A, #$D, ASCIIE
              MOV     A, #'D'
              RET
ASCIIE:      CJNE    A, #$E, ASCIIF
              MOV     A, #'E'
              RET
ASCIIF:      CJNE    A, #$F, ASCIANGKA
              MOV     A, #'F'
              RET
ASCIANGKA:   ADD     A, #$30
              RET

```

```

;-----
--
; RUTIN PENGIRIMAN DATA KE HANDPHONE UNTUK PROSES SMS
;-----
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```

```

PENGIRIMAN_SMS: CLR     LED
                 MOV     DPTR, #INITMODEM
                 LCALL   PROC_KIRIMDATA
                 LCALL   PROC_4XDELAY
                 LCALL   PROC_4XDELAY
                 MOV     DPTR, #SMS1
                 LCALL   PROC_KIRIMDATA
                 LCALL   PROC_4XDELAY
                 LCALL   PROC_4XDELAY
                 MOV     DPTR, #SMS2
                 LCALL   PROC_KIRIMDATA
                 LCALL   PROC_4XDELAY
                 LCALL   PROC_4XDELAY
                 LCALL   PROC_4XDELAY
                 MOV     DPTR, #SMSDATA1

```

```

                                LCALL    PROC_KIRIMDATA
                                MOV      DPTR,#SMSDATA2
                                LCALL    PROC_KIRIMDATA

                                MOV      R0,#BUFKIRIM
                                MOV      R2,#8
SENBUFFKIRIM:
                                MOV      A,@R0
                                LCALL    SENDCHR
                                INC      R0
                                DJNZ     R2,SENBUFFKIRIM

                                MOV      A,#26                                ;END OF SMS
                                LCALL    SENDCHR
                                SETB    LED

SELESAI:
                                LCALL    PROC_4XDELAY
                                LCALL    PROC_4XDELAY
                                RET

```

```

;-----
; RUTIN PENGIRIMAN STRING DARI LOOKUP TABLE
;-----

```

```

PROC_KIRIMDATA:
                                CLR      A
                                MOVC    A,@A+DPTR
                                CJNE    A,#0FFH,TULISDATA
                                RET
TULISDATA:
                                LCALL    SENDCHR
                                INC      DPTR
                                LJMP    PROC_KIRIMDATA

```

```

;-----
BIN2BCD:
                                MOV      DATABIN2BCD1,#0
                                MOV      R2,A
ULANGBCD:
                                MOV      A,DATABIN2BCD1
                                ADD     A,#1
                                DA      A
                                MOV      DATABIN2BCD1,A
                                DJNZ    R2,ULANGBCD
                                RET

```



```

;-----
SENDCHR:
        CLR    TI
        MOV    SBUF,A
TXLOOP:
        JNB   TI,TXLOOP
        RET

;-----
---
; INISIAL KOMUNIKASI SERIAL 19200,8,1,N UNTUK KE
HANDPHONE
;-----
---
INITSERIALHP:
        MOV    TMOD, #21h        ;
        MOV    TCON, #41h        ;
        MOV    TH1,  #0fdh        ; Set 19200 baud
with xtal=11.059mhz
        MOV    SCON, #50h        ; set serial
control reg for 8 bit data
                                           ; and mode 1
        ORL    87H,#80h
        RET

PROC_4XDELAY:
        LCALL  DELAY
        LCALL  DELAY
        LCALL  DELAY
        LCALL  DELAY
        RET

DELAY1DETIK:
DLY1:   MOV    R5,#100
DLY2:   MOV    R6,#100
DLY3:   MOV    R7,#50
DLY4:   DJNZ  R7,DLY4
        DJNZ  R6,DLY3
        DJNZ  R5,DLY2
        RET

DELAY:
DLD1:   MOV    R7,#$ff
        MOV    R6,#$FF

```

```
DLD2:          DJNZ    R6,DLD2
               DJNZ    R7,DLD1
               RET
```

```
INITMODEM     .BYTE    "ATH",0DH,0AH,0FFH
;HANGE MODEM
SMS1           .BYTE    "AT+CMGF=0",0DH,0AH,0FFH
;SET PDU FORMAT
SMS2           .BYTE    "AT+CMGS=23",0DH,0AH,0FFH
;KIRIM PERINTAH SEND SMS PANJANG DATA 23
SMSDATA1      .BYTE    "0011000D91"
               .BYTE    "261823306050F5",0FFH
;HEADER DAN NOMOR TELEPON TUJUAN
;
               81320306055
SMSDATA2      .BYTE    "0000AA04",0FFH
;DATA VALID DAN PANJANG DATA
```

```
.END
```