

มหาวิทยาลัยเชียงใหม่
Chiang Mai University

ภาคผนวก ก

โปรแกรมมอไนเตอร์

โปรแกรมมอนิเตอร์

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;*****
;
;   Program Monitor Distributed Real Time Control System   *
;
;               By                                       *
;
;   Mr.Somphop Rodumpron                                 *
;
;               ChiangMai University                     *
;*****

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0000      CPU      "8096.TBL"
0000      HOF      "INT8"
0000      INCL    "SFR.96"

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; SPECIAL FUNCTION REGISTERS OF THE MCS-96 MICROROLLER.

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0000 =      ZERO:      EQU    00H      ; ZERO REGISTER
0002 =      AD_COMMAND: EQU    02H      ; A/D COMMAND REGISTER
0002 =      AD_RESULT_LO: EQU    02H      ; A/D RESULT LO
0003 =      AD_RESULT_HI: EQU    03H      ; A/D RESULT HI
0003 =      HSI_MODE:   EQU    03H      ; HIGH SPEED INPUT MODE
0004 =      HSI_TIME:   EQU    04H      ; HIGH SPEED TRIGGER TIME
0004 =      HSO_TIME:   EQU    04H      ;
0006 =      HSO_COMMAND: EQU    06H      ; HSO COMMAND REGISTER
0006 =      HSI_STATUS: EQU    06H      ; HSI STATUS REGISTERS
0007 =      SBUF:       EQU    07H      ; SERIAL BUFFER
0008 =      INT_MASK:   EQU    08H      ; INTERRUPT MASK
0009 =      INT_PENDING: EQU    09H      ; INTERRUPT PENDING REGISTER
000A =      WATCHDOG:   EQU    0AH      ; WATCHDOG TIMER REGISTER
000A =      TIMER1:     EQU    0AH      ; TIMER 1

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000C =    TIMER2:           EQU  0CH    ; TIMER2
000E =    IOPORT0:        EQU  0EH    ; PORT 0 REGISTER
000E =    BAUD_RATE:      EQU  0EH    ; BAUD RATE REGISTER
000F =    IOPORT1:        EQU  0FH    ; PORT 1 REGISTER
0010 =    IOPORT2:        EQU  10H    ; PORT 2 REGISTER
0011 =    SP_STAT:        EQU  11H    ; SERIAL PORT STATUS
0011 =    SP_CON:         EQU  11H    ; SERIAL PORT CONTROL
0015 =    IOS0:           EQU  15H    ; I/O STATUS REGISTER 0
0016 =    IOS1:           EQU  16H    ; I/O STATUS REGISTER 1
0015 =    IOC0:           EQU  15H    ; I/O CONTROL REGISTER 0
0016 =    IOC1:           EQU  16H    ; I/O CONTROL REGISTER 1
0017 =    PWM_CONTROL:    EQU  17H    ; PWM CONTROL REGISTER
0018 =    SP:             EQU  18H    ; STACK POINTER
0000      INCL  "REG.96"

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; GENERAL PURPOSE REGISTERS FOR THE MCS-96 MICROCONTROLLER.

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0020      ORG  20H
0020      AX:           DFS  2          ; REGISTER A
0020 =    AL:           EQU  AX        ; REGISTER A LOW BYTE
0021 =    AH:           EQU  AX+1      ; REGISTER A HIGH BYTE
0022      AX0:          DFS  2          ; REGISTER A
0022 =    AL0:          EQU  AX0       ; REGISTER A LOW BYTE
0023 =    AH0:          EQU  AX0+1    ; REGISTER A HIGH BYTE
0024      BU:           DFS  2          ; REGISTER B
0024 =    BH:           EQU  BU        ; REGISTER B LOW BYTE
0025 =    BL:           EQU  BU+1     ; REGISTER B HIGH BYTE
0026      CX:           DFS  2          ; REGISTER C
0026 =    CL:           EQU  CX        ; REGISTER C LOW BYTE

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0027 =	CH:	EQU	CX+1	; REGISTER C HIGH BYTE
0028	CX0:	DFS	2	; REGISTER C
0028 =	CL0:	EQU	CX0	; REGISTER C LOW BYTE
0029 =	CH0:	EQU	CX0+1	; REGISTER C HIGH BYTE
002A	DX:	DFS	2	; REGISTER D
002A =	DL:	EQU	DX	; REGISTER D LOW BYTE
002B =	DH:	EQU	DX+1	; REGISTER D HIGH BYTE
002C	DX0:	DFS	2	; REGISTER D
002C =	DL0:	EQU	DX0	; REGISTER D LOW BYTE
002D =	DH0:	EQU	DX0+1	; REGISTER D HIGH BYTE
002E	EX:	DFS	2	; REGISTER E
002E =	EL:	EQU	EX	; REGISTER E LOW BYTE
002F =	EH:	EQU	EX+1	; REGISTER E HIGH BYTE
0030	FX:	DFS	2	; REGISTER F
0030 =	FL:	EQU	FX	; REGISTER F LOW BYTE
0031 =	FH:	EQU	FX+1	; REGISTER F HIGH BYTE
0032	GX:	DFS	2	; REGISTER G
0032 =	GL:	EQU	GX	; REGISTER G LOW BYTE
0033 =	GH:	EQU	GX+1	; REGISTER G HIGH BYTE
0034 =	GX0:	EQU	GX0	; REGISTER G
0034 =	GL0:	EQU	GLO	; REGISTER G LOW BYTE
0035 =	GH0:	EQU	GLO+1	; REGISTER G HIGH BYTE
0034	R0:	DFS	1	; DATA REGISTER 0
0035	R1:	DFS	1	; DATA REGISTER 1
0036	R2:	DFS	1	; DATA REGISTER 2
0037	R3:	DFS	1	; DATA REGISTER 3
0038	R4:	DFS	1	; DATA REGISTER 4
0039	R5:	DFS	1	; DATA REGISTER 5
003A	R6:	DFS	1	; DATA REGISTER 6

003B	R7:	DFS	1	; DATA REGISTER 7
003C	R8:	DFS	1	; DATA REGISTER 8
003D	R9:	DFS	1	; DATA REGISTER 9
003E	R10:	DFS	1	; DATA REGISTER 10
003F	R11:	DFS	1	; DATA REGISTER 11
0040	R12:	DFS	1	; DATA REGISTER 12
0041	R13:	DFS	1	; DATA REGISTER 13
0042	R14:	DFS	1	; DATA REGISTER 14
0043	R15:	DFS	1	; DATA REGISTER 15
0044	TOC:	DFS	1	; DATA TYPE OF COMMAND
0045	HEADD:	DFS	1	; DESINATION ADDRESS
0046	HEADS:	DFS	1	; SOURCE ADDRESS
0047	FSQ:	DFS	1	; FRAME SEQUENCE TRANSFER
0048	CHKS:	DFS	1	; CHECK SUM HEADDER
0049	CHKS1:	DFS	1	; CHECK SUM DATA
004A	SOH:	DFS	1	; START OF HEAD
004B	STX:	DFS	1	; START OF TEXT
004C	ETX:	DFS	1	; END OF TEXT
004D	ACK:	DFS	1	; ACKNOWLEDGE
004E	NAK:	DFS	1	; NEGATIVE ACKNOWLEDGE
004F	PC:	DFS	1	; PROGRAM COUNTER
0050	FLGI:	DFS	1	; FLAG INI SERIAL
0051	FLGR:	DFS	1	; FLAG RUN
0052	FLGST:	DFS	1	; FLAG STOP
0053	FLGSTA:	DFS	1	; FLAG STATUS
0054	FLGFTP:	DFS	1	; FLAG FILE TRANSFER PROTOCOL
0055	FLGINST:	DFS	1	; FLAG INSTALLATION
0056	STAFLG:	DFS	1	; FLAG Off line, Idle, Busy, Alarm
0057	INST:	DFS	1	; COUNTER INSTALL

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0058      COUNT:      DFS  1          ; COUNTER Printer

2018                      ORG  2018H

2018 FD                    DFB  0FDH

FFC0 =    PORTA:      EQU  0FFC0H    ; PORTA OF 8255
FFC1 =    PORTB:      EQU  0FFC1H    ; PORTB OF 8255
FFC2 =    PORTC:      EQU  0FFC2H    ; PORTC OF 8255
FFC3 =    PCONT:     EQU  0FFC3H    ; CONTROL PORT OF 8255
FFD0 =    P2A:        EQU  0FFD0H    ; PORTA OF 8255A
FFD1 =    P2B:        EQU  0FFD1H    ; PORTB OF 8255A
FFD2 =    P2C:        EQU  0FFD2H    ; PORTC OF 8255A
FFD3 =    PCT2:      EQU  0FFD3H    ; CONTROL PORT OF 8255A
0050 =    DPTR:      EQU  50H
0060 =    STATUS:    EQU  60H

200A                      ORG  200AH
200A 8040                  DWL  TIME
200C                      ORG  200CH
200C 1221                  DWL  SERINT
200E                      ORG  200EH
                          DWL  EXINT

2008                      ORG  2008H
                          DWL  HSI

2080                      ORG  2080H    ; DEFIND START UP ADDRESS CPU
2080 B10020                LDB  AL,#0
2083 E020FD                DJNZ AL,$
2086 A1005018              LD   SP,#5000H    ; SET STACK POINTER

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208A B18020      LDB  AL,#80H      ; DEFINE PORT CONTROL 8255
208D C701C3FF20  STB  AL,PCONT     ; PORTA,PORTB,PORTC = OUTPUT
2092 B12016      LDB  IOC1,#20H    ;ENABLE SERIAL
2095 B1130E      LDB  BAUD_RATE,#13H ;SET 9600 BITS/SEC
2098 B1800E      LDB  BAUD_RATE,#80H
209B B10911      LDB  SP_CON,#09H  ;SELECT MODE SERIAL MODE 1

209E 1125        CLR  BL
20A0 EF6301      LCALL SER
20A3 B10050      LDB  FLGI,#00H
20A6 B10051      LDB  FLGR,#00H
20A9 B10052      LDB  FLGST,#00H
20AC B10053      LDB  FLGSTA,#00H
20AF B10054      LDB  FLGFTP,#00H
20B2 B10055      LDB  FLGINST,#00H
20B5 B10056      LDB  STAFLG,#00H
20B8 A1014660    LD   STATUS,#4601H ; Number of RUN Cycle
20BC B10038      LDB  R4,#00H
20BF C66038      STB  R4,[STATUS]
20C2 A1004560    LD   STATUS,#4500H ; Status active
20C6 B10038      LDB  R4,#00H
20C9 C66038      STB  R4,[STATUS]
20CC A1004660    LD   STATUS,#4600H
20D0 B10138      LDB  R4,#01H
20D3 C66038      STB  R4,[STATUS]
20D6 B19138      LDB  R4,#91H
20D9 C701D3FF38  STB  R4,PCT2
20DE B11F38      LDB  R4,#1FH      ; INIT_PRINTER
20E1 C701D2FF38  STB  R4,P2C

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20E6 EF8A02          LCALL  DELAY
20E9 B13F38          LDB   R4,#3FH
20EC C701D2FF38      STB   R4,P2C
20F1 B00038          LDB   R4,00H          ;FLAG CHECK KX5
20F4 B1E720          LDB   AL,#0E7H       ; DISPLAY LED E7H READY

-----
20F7          MAIN:          ; DISPLAY LED E7H READY
20F7 C701C0FF20      STB   AL,PORTA
20FC 990050          CMPB  FLGI,#00H
20FF DF0F           JE    B_RET
2101 EF0A01          LCALL DATA
2104 2812           SCALL SETFLAG
2106 2867           SCALL P_RUN
2108 2888           SCALL P_STOP
210A 284A          SCALL P_INSTAL
210C 28C0          SCALL P_STATUS       ; Send Status Station
210E 28D8          SCALL P_STAFLG
2110 27E5          B_RET:          SJMP  MAIN

-----
2112 F2          SERINT:          PUSHF
2113 B10150          LDB   FLGI,#01H
2116 F3           POPF
2117 F0           RET

-----
2118 A1004050  SETFLAG:          LD    DPTR,#4000H
211C B25030          LDB   FL,[DPTR]
211F 990130          CMPB  FL,#01H        ; RUN
2122 D705          JNE  CMP2

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2124 B10151      LDB  FLGR,#01H      ; SET FLAG FOR RUN
2127 202C        SJMP B_FLAG
2129 990230  CMP2:  CMPB  FL,#02H      ; STATUS
212C D705        JNE   CMP3
212E B10153      LDB  FLGSTA,#01H    ; SET FLAG FOR STATUS
2131 2022        SJMP B_FLAG
2133 990330  CMP3:  CMPB  FL,#03H      ; STOP
2136 D705        JNE   CMP4
2138 B10152      LDB  FLGST,#01H     ; SET FLAG FOR STOP
213B 2018        SJMP B_FLAG
213D 990430  CMP4:  CMPB  FL,#04H      ; FTP
2140 D703        JNE   CMP5
2142 B10154      LDB  FLGFTP,#01H    ; SET FLAG FOR FTP
2145 990530  CMP5:  CMPB  FL,#05H
2148 D703        JNE   CMP6
214A B10155      LDB  FLGINST,#01H   ; SET FLAG INSTALL
214D 990630  CMP6:  CMPB  FL,#06H
2150 D703        JNE   B_FLAG
2152 B10156      LDB  STAFLG,#01H
2155 F0        B_FLAG:  RET
2156 990155  P_INSTAL:  CMPB  FLGINST,#01H
2159 D736        JNE   BP_RUN
215B EFD401      LCALL ACK1
215E B10055      LDB  FLGINST,#00H
2161 A1004660    LD   STATUS,#4600H
2165 B26031      LDB  FH,[STATUS]
2168 726031      ANDB FH,[STATUS]
216B C66031      STB  FH,[STATUS]
216E F0        RET

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216F 990151  P_RUN:      CMPB  FLGR,#01H
2172 D71D          JNE   BP_RUN
2174 A1014660     LD    STATUS,#4601H
2178 B26058      LDB   COUNT,[STATUS]      ; Number RUN cycle
217B 1109        CLRB  INT_PENDING
217D B16008      LDB   INT_MASK,#60H
2180 B10051      LDB   FLGR,#00H
2183 A1004660     LD    STATUS,#4600H
2187 B10231      LDB   FH,#02H
218A C66031      STB   FH,[STATUS]
218D EFF601      LCALL T_TEST
2190 FD          NOP
2191 F0          BP_RUN:  RET
2192          P_STOP:
2192 990152      CMPB  FLGST,#01H
2195 D736          JNE   BP_STOP
2197 B1E720      LDB   AL,#0E7H
219A B1F031      LDB   FH,#0F0H
219D A1004050     LD    DPTR,#4000H
21A1 B10030      LDB   FL,#00H
21A4 C701C1FF30  STB   FL,PORTB
21A9 C65030      STB   FL,[DPTR]
21AC A1804050     LD    DPTR,#4080H
21B0 C65031      STB   FH,[DPTR]
21B3 C65131      STB   FH,[DPTR]+
21B6 B10052      LDB   FLGST,#00H
21B9 A1004660     LD    STATUS,#4600H
21BD B10131      LDB   FH,#01H
21C0 C66031      STB   FH,[STATUS]

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21C3 B10038		LDB	R4,#00H
21C6 A1004560		LD	STATUS,#4500H
21CA C66038		STB	R4,[STATUS]
21CD F0	BP_STOP:	RET	
21CE 990153	P_STATUS:	CMPB	FLGSTA,#01H
21D1 D714		JNE	BP_STATUS
21D3 A1004560		LD	STATUS,#4500H
21D7 B26032		LDB	GL,[STATUS]
21DA 297B	S_STAUTS:	SCALL	TX
21DC B03207		LDB	SBUF,GL
21DF 3511FD	S_STATUS1:	JBC	SP_STAT,5,S_STATUS1
21E2 298F		SCALL	DELAY
21E4 B10053		LDB	FLGSTA,#00H
21E7 F0	BP_STATUS:	RET	
21E8 990156	P_STAFLG:	CMPB	STAFLG,#01H
21EB D705		JNE	P_FLG
21ED 2804		SCALL	SEND_FLAG
21EF B10056		LDB	STAFLG,#00H
21F2 F0	P_FLG:	RET	
21F3 A1004660	SEND_FLAG:	LD	STATUS,#4600H
21F7 B26032		LDB	GL,[STATUS]
21FA 295B		SCALL	TX
21FC B03207		LDB	SBUF,GL
21FF 3511FD	SFLG:	JBC	SP_STAT,5,SFLG
2202 71DF11		ANDB	SP_STAT,#0DFH
2205 F0		RET	
2206 FA	SER:	DI	
2207 1109		CLRB	INT_PENDING
2209 B16008		LDB	INT_MASK,#60H

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220C FB          EI
220D F0          RET
220E          DATA:
220E 2821  FRAME:  SCALL SYNCIDEL          ; SYN, DLE, DLE
2210 2843          SCALL SOH1
2212 990345      CMPB HEADD,#03H          ; Address baord MCS-96
2215 D70C          JNE  RETURN_MAIN          ; 01, 02, 03
2217 2890          SCALL STX1
2219 289D          SCALL WORK
221B 28E4          SCALL ETX1
221D 28F1          SCALL EDLE1
221F B10050      LDB  FLGI,#00H
2222 F0          RET
2223 B10050  RETURN_MAIN: LDB  FLGI,#00H
2226 B10031      LDB  FH,#00H
2229 A1004050    LD   DPTR,#4000H
222D C65031      STB  FH,[DPTR]
2230 F0          RET

2231 2932  SYNCIDEL:  SCALL RX
2233 3611FD  BSYN:    JBC  SP_STAT,6,BSYN          ; SYN
2236 71DF11      ANDB SP_STAT,#0DFH
2239 997E07      CMPB SBUF,#7EH
223C D7F5          JNE  BSYN
223E 3611FD  BDLE:    JBC  SP_STAT,6,BDLE          ;DLE
2241 71DF11      ANDB SP_STAT,#0DFH
2244 991007      CMPB SBUF,#10H
2247 D7F5          JNE  BDLE
2249 3611FD  BDLE1:  JBC  SP_STAT,6,BDLE1          ;DEL

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224C 71DF11      ANDB  SP_STAT,#0DFH
224F 991007      CMPB  SBUF,#10H
2252 D7F5        JNE   BDLE1
2254 F0          RET

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,*****
;                CHECK HEADER FOR PROTOCOL                *
,*****

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2255          SOH1:
2255 3611FD  SOH2:      JBC   SP_STAT,6,SOH2      ; START OF HEAD
2258 71DF11      ANDB  SP_STAT,#0DFH
225B B0074A      LDB   SOH,SBUF
225E 990107      CMPB  SBUF,#01H
2261 D7F2        JNE   SOH2
2263 3611FD  HEADADD:  JBC   SP_STAT,6,HEADADD  ; RECIVED OF HEADER
2266 71DF11      ANDB  SP_STAT,#0DFH
2269 B00745      LDB   HEADD,SBUF
226C 3611FD  HEADSOU:  JBC   SP_STAT,6,HEADSOU
226F 71DF11      ANDB  SP_STAT,#0DFH
2272 B00746      LDB   HEADS,SBUF
2275 3611FD  TOC1:      JBC   SP_STAT,6,TOC1
2278 71DF11      ANDB  SP_STAT,#0DFH
227B B00744      LDB   TOC,SBUF
227E 3611FD  FSQ1:      JBC   SP_STAT,6,FSQ1
2281 71DF11      ANDB  SP_STAT,#0DFH
2284 B00747      LDB   FSQ,SBUF
2287 990007      CMPB  SBUF,#00H
228A D7F2        JNE   FSQ1

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228C 1148          CLRB  CHKS
228E B04A48       LDB   CHKS,SOH
2291 944548       XORB  CHKS,HEADD
2294 944648       XORB  CHKS,HEADS
2297 944448       XORB  CHKS,TOC
229A 944748       XORB  CHKS,FSQ
229D 3611FD  CHKSUM: JBC   SP_STAT,6,CHKSUM
22A0 71DF11       ANDB  SP_STAT,#0DFH
22A3 980748       CMPB  CHKS,SBUF
22A6 D7F5         JNE   CHKSUM
22A8 F0           RET

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;*****
;
;          DATA PORTION          *
;*****

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```

22A9          STX1:
22A9 3611FD  STX2:          JBC   SP_STAT,6,STX2          ; START OF DATA
22AC 71DF11       ANDB  SP_STAT,#0DFH
22AF B0074B       LDB   STX,SBUF
22B2 99024B       CMPB  STX,#02H
22B5 D7F2         JNE   STX2
22B7 F0           RET

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;*****
;
;          RECEIVE LINE DETECT    *
;*****

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22B8 283D   WORK:      SCALL GET_DA
22BA B02228   LDB   CLO,ALO
22BD B0222F   LDB   EH,ALO
22C0 742849   ADDB  CHKS1,CLO ; CHECK SUM DATA
22C3 990028   CMPB  CLO,#00H
22C6 DF28     JE    WORK2
22C8 282D     SCALL GET_DA ; ADDRESS Reg.DX0
22CA B0222D   LDB   DH0,ALO
22CD 742249   ADDB  CHKS1,ALO ; CHECK SUM DATA
22D0 2825     SCALL GET_DA
22D2 B0222C   LDB   DL0,ALO
22D5 742249   ADDB  CHKS1,ALO ; CHECK SUM DATA
22D8 281D     SCALL GET_DA ; RECORD OF DATA
22DA 742249   ADDB  CHKS1,ALO
22DD 2818   WORK1:      SCALL GET_DA
22DF C62D22   STB   ALO,[DX0]+
22E2 742249   ADDB  CHKS1,ALO
22E5 C701C0FF22 STB   ALO,PORTA
22EA E028F0   DJNZ  CLO,WORK1
22ED 2808     SCALL GET_DA
22EF F0       RET
22F0 B1FF22   WORK2:      LDB   ALO,#0FFH
22F3 C62D22   STB   ALO,[DX0]+
22F6 F0       RET
22F7         GET_DA:
22F7 3611FD   GET_DA1:    JBC   SP_STAT,6,GET_DA1 ; START OF DATA
22FA 71DF11   ANDB  SP_STAT,#0DFH
22FD B00722   LDB   ALO,SBUF
2300 F0       RET

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```

2301          ETX1:
2301 3611FD  ETX2:      JBC   SP_STAT,6,ETX2
2304 71DF11          ANDB  SP_STAT,#0DFH
2307 B0074C          LDB   ETX,SBUF
230A 99034C          CMPB  EXT,#03H
230D D7F2           JNE   ETX2
230F F0             RET

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,*****
;          END OF FRAME          *
,*****

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2310          EDLE1:
2310 3611FD  EDLE2:      JBC   SP_STAT,6,EDLE2          ; DLE
2313 71DF11          ANDB  SP_STAT,#0DFH
2316 991007          CMPB  SBUF,#10H
2319 D7F5           JNE   EDLE2
231B 3611FD  EDLE3:      JBC   SP_STAT,6,EDLE3          ; DLE
231E 71DF11          ANDB  SP_STAT,#0DFH
2321 991007          CMPB  SBUF,#10H
2324 D7F5           JNE   EDLE3
2326 3611FD  ESYN:      JBC   SP_STAT,6,ESYN          ; SYN
2329 71DF11          ANDB  SP_STAT,#0DFH
232C 997E07          CMPB  SBUF,#7EH
232F D7F5           JNE   ESYN
2331 F0             RET
2332 2823          ACK1:      SCALL TX
2334 B04507          LDB   SBUF,HEADD
2337 3511FD  ACK2:      JBC   SP_STAT,5,ACK2

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233A 71DF11      ANDB  SP_STAT,#0DFH
233D F0          RET
233E 2825      CLEARACK: SCALL  RX
2340 3611FD    CLRACK:   JBC   SP_STAT,6,CLRACK
2343 71BF11      ANDB  SP_STAT,#0BFH
2346 99EC07      CMPB  SBUF,#0ECH
2349 D7F5        JNE   CLRACK
234B 280A        SCALL  TX
234D B10007      LDB   SBUF,#00H
2350 3511FD    CLRACK2: JBC   SP_STAT,5,CLRACK2
2353 71DF11      ANDB  SP_STAT,#0DFH
2356 F0          RET
2357 1126      TX:      CLRB  CL
2359 B10426      LDB   CL,#04H          ; ENABLE RS-485 TX
235C 710426      ANDB  CL,#04H
235F C701C2FF26 STB   CL,PORTC
2364 F0          RET
2365 1126      RX:      CLRB  CL
2367 B10026      LDB   L,#00H
236A 710026      ANDB  CL,#00H
236D C701C2FF26 STB   CL,PORTC
2372 F0          RET
2373 B10134    DELAY:  LDB   R0,#1H
2376 B15035    DEL1:   LDB   R1,#050H
2379 B1A036    DEL2:   LDB   R2,#0A0H
237C E036FD      DJNZ  R2,$
237F E035F7      DJNZ  R1,DEL2
2382 E034F1      DJNZ  R0,DEL1
2385 F0          RET

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```
2386 B13806 T_TEST:    LDB   HSO_COMMAND,#38H
2389 65FFFF0A         ADD   TIMER1,#0FFFFH
238D 640A04          ADD   HSO_TIME,TIMER1
2390 F0              RET
4080                ORG   4080H
4080                TIME:
0000                END
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มหาวิทยาลัยเชียงใหม่
Chiang Mai University

ประวัติการศึกษา

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