AP Note of MTV230M Development Tools

1. ICE TOOLS

1.1 Vender

(a) Microtek : Easy Pack 8051 3.3 v ICE mode
(b) HILO: 8051 ICE
(c) Others : Users may use another standard 8051 ICE which supports 3.3V.

1.2 ICE board (Supported by Myson)

(a) Mother board
MTV230ICE BOARD VER1.1 12/02/2000.
(b) Convert board
Dual Header 11 x 2(M) →44 PLCC <PN: APL-44> (for PLCC44 Type user).
MTV230ICE Board →42 SDIP <On board > (for SDIP42 Type user.)

1.3 Jump setting of ICE board

The ICE board can work in either ICE mode or ISP mode by jump setting.
1. ICE Mode
(a) Port 3.0 and 3.1 is use to I/O (b) Port 3.0 and 3.1 use to HSCL and HSDA

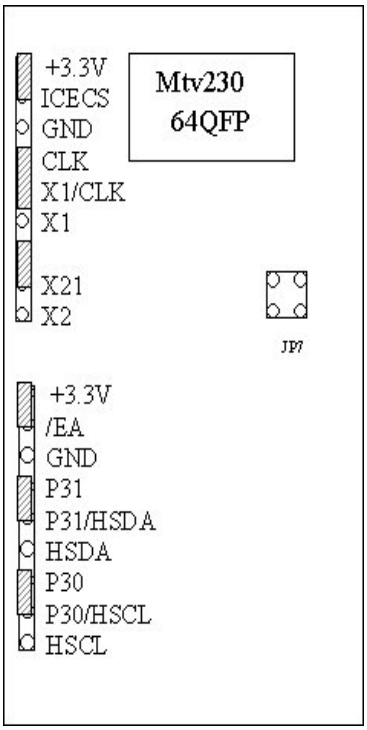

Figure 1 Port3.0 and port3.1 set as I/O

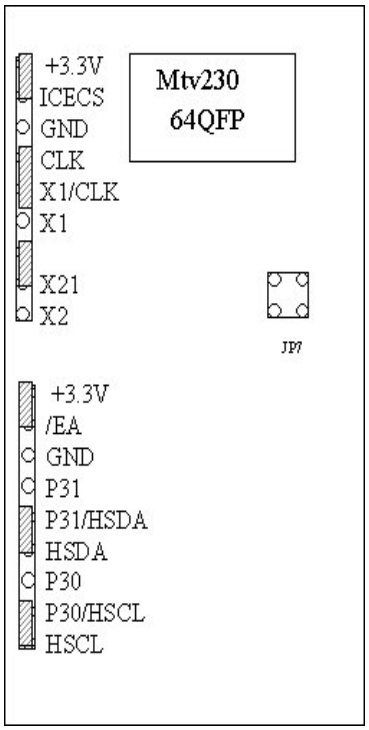

Figure 2 Port3.0 and port3.1 set as HSCLand HSDA

2. ISP mode --- updates the OSD font to the ICE board
There are standard Myson OSD fonts in the ICE . If users wish to program the new OSD fonts to ICE board, Myson supports the ISP tools to update the OSD fonts. There are two ways to update OSD fonts. One is to put the ICE board in the main board (target board), then use the ISP function to update OSD fonts. Another is to use the ICE board to update. The jump setting is described in the following figures.

(a) ICE board with main board

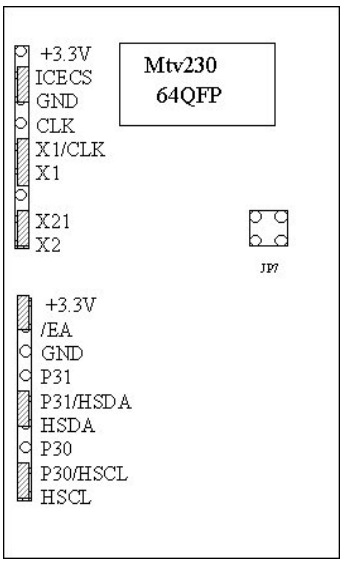

Figure 3 Jump setting of ISP mode

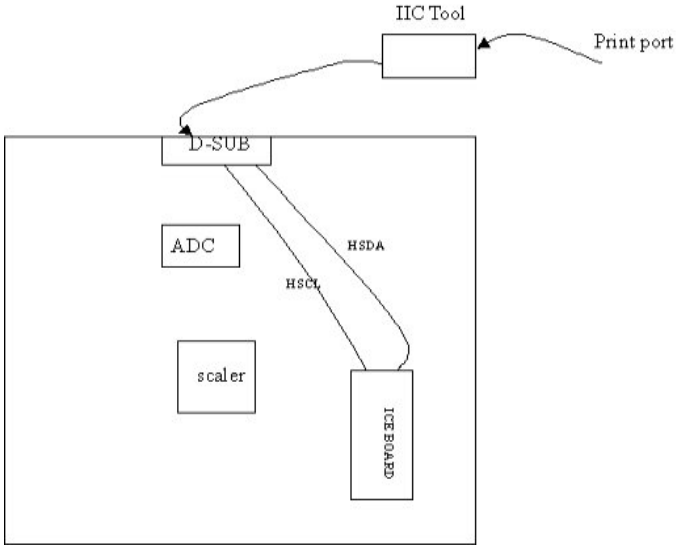

Figure 4 Update OSD fonts connect figure

(b) ICE board without main board

In this case you must solder R1, R2R3, R4, JP9, C5, C4, and Y1, and support 3.3V DC power supply.

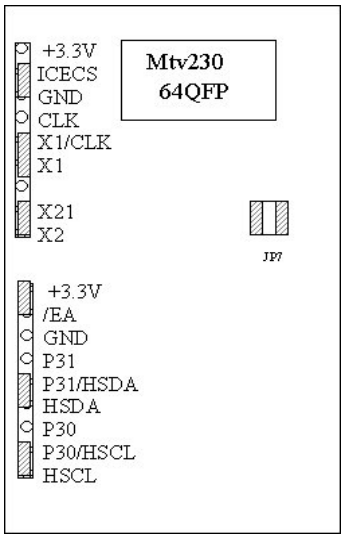

Figure 5 Alone ICE board update OSD Fonts jump setting

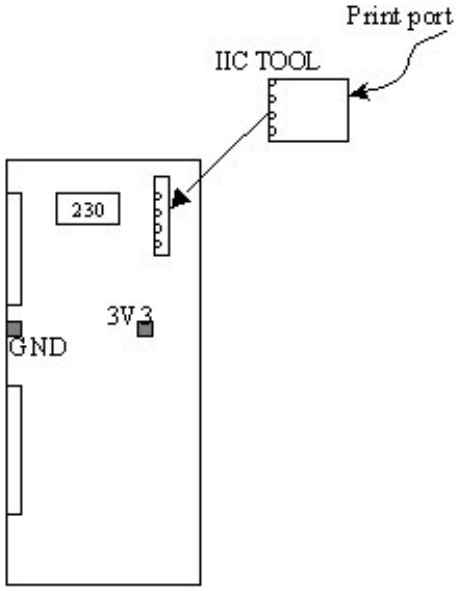

Figure 6 Alone ICE board update OSD fonts connect

Component	Value
R1	2KΩ
R2	2KΩ
R3	100Ω
R4	100Ω
C5	20pf
C4	20pf
Y1	12MHz

Table 1 ICE board component list

1.4 Memory setting of ICE board

Owing to XFR and AUXRAM are in area F00h~FFFh and 800~AFFh, so if users use Microtek 's Easypack ICE, memory setting must be set as shown in figure 7 and figure 8.

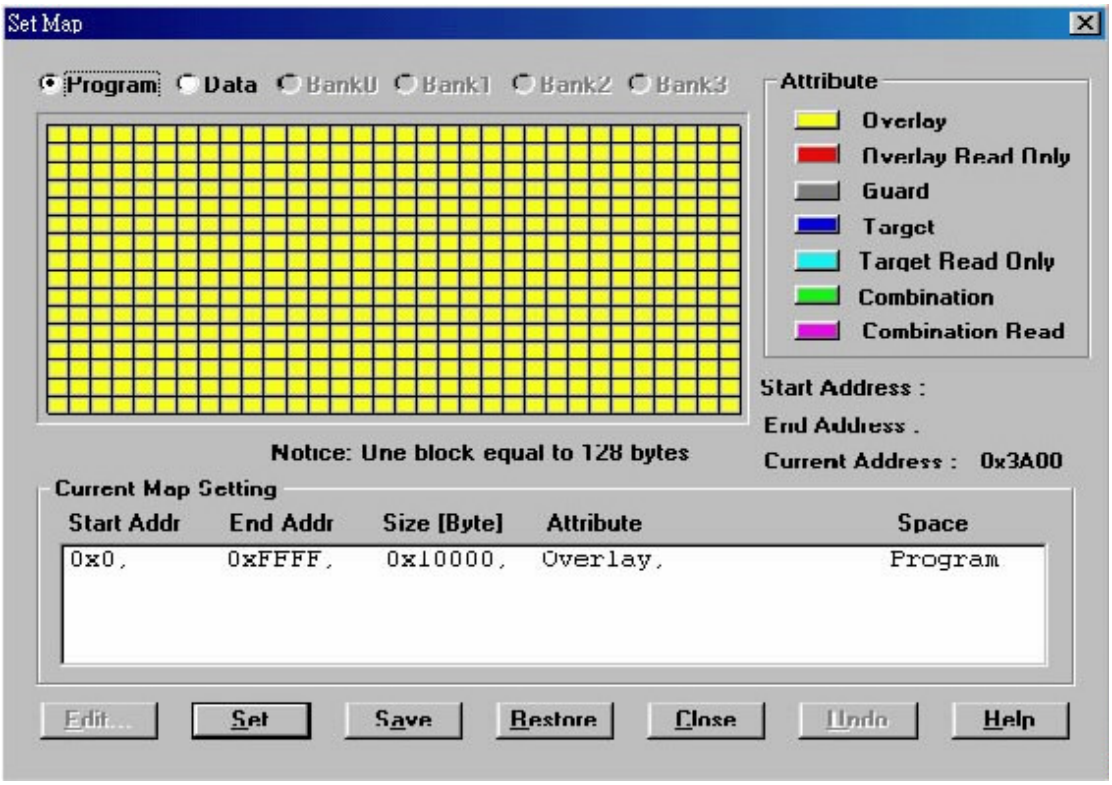

Figure 7 Program memory setting

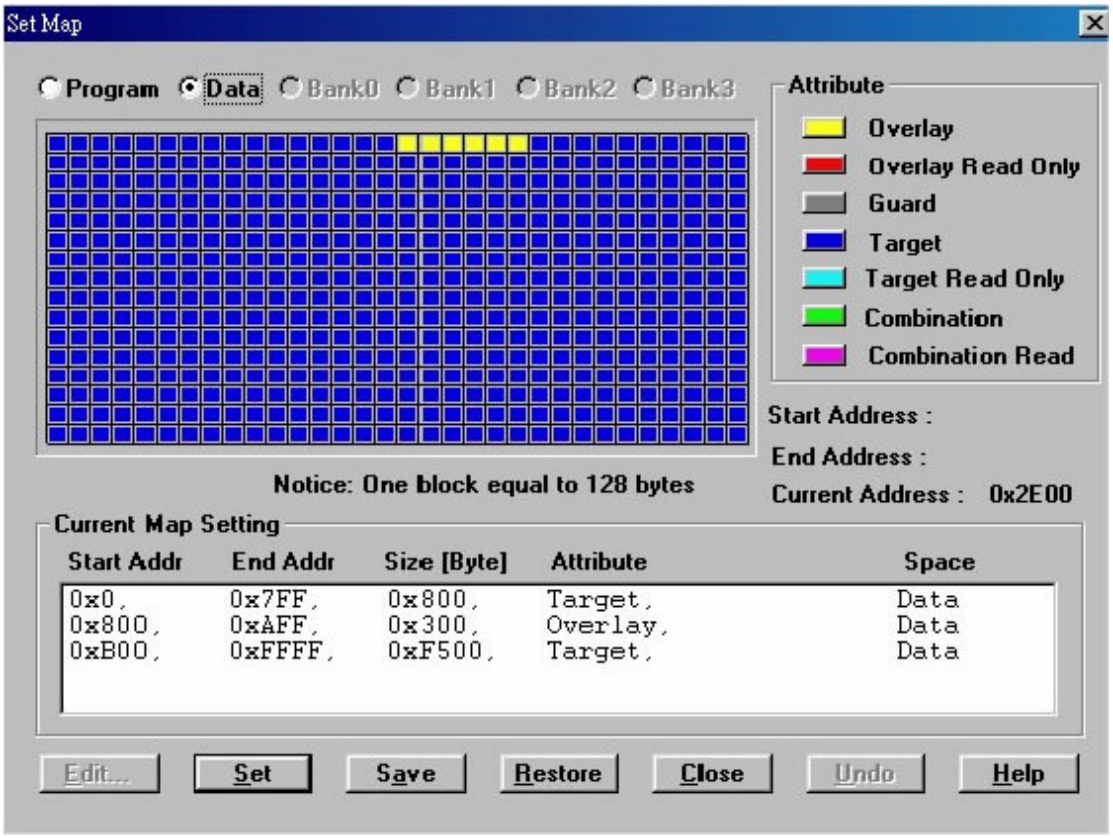

Figure 8 Data memory setting

In figure 7 and figure8, “Overlay” means to use memory in 8051 ICE, and “Target” means to use memory in MTV230 ICE board

2. WRITER

2.1 Single Writer

1. MTV230M Single Writer VER1.1
2. The single writer supports t42 SDIP and 44 PLCC types.
3. DC power supply: 12V-7V/500mA
4. Execute file: X30.exe
5. Manner: X30 m as a filename and X30 o as a filename , where m = MCU and o = OSD
6. c:\> X30 can show the help file.
7. The help file of single writer

```
---------- MTV X30MV Single Writer for DOS    Ver. 1.0    ----------
-       X30 [MTV type] [Command type] [file name]
-               [O or M]    P    [input file name]          -- Program
-               [O or M]    V    [input file name]          -- Verify
-               [O or M]    B                               -- Blank Check
-               [O or M]    E                               -- Erase
-               [O or M]    A    [input file name ]         -- AUTO
-               [O or M]    H                               -- Help
-               [O or M]    AP [input file name ]           -- AUTO with password
- Ex 1: X30 O as a X30.hex ,where O = 16K Word OSD memory space
- Ex 2: X30 M as a X30.hex, where 64 = 64kB MCU memory space
- Ex 3: X30 S gerenates updated X30SWhex.hex for AT89LV51(52)
```

- [input file name]: BIN,HEX,Sample input file,Auto recognize
- [output file name]: Sample output file

- Myson Technology Inc
- (03) 578-4866 ext. 1319 Danny Lin lin_mp@myson.com.tw
- (03) 578-4866 ext. 1379 Sunny Hsu hsu_yj@myson.com.tw
- (03) 578-4866 ext. 1339 Jeff Lee lee_cj@myson.com.tw
- Fax: (03) 564-5634
- http://www.myson.com.tw

Note: If auto with password function (x30 m ap [input file name]) is used, users must enter the password. The same password also has to be entered when using gang writer, which would not work if the entered password is incorrect.

2.2 The Gang Writer

The gang writer will be available by mid-January, 2001.

2.3 The Error message

Error message	Solution
Not MTVX30M single write.	The print port is not connected.
Not MTVX30M single write or the single write not powered on.	The writer board is not powered on.
F/W at Myson Single Writer is the old version. Press any key to get (X30SWhex.hex) at this directory. Please update AT89C51(52) by HILO or other programmers.	Please find the x30swhex.hex in same directory and use the 8051 writer to update this file to AT89LV52 on MTV 230 writer board . Put AT89LV52 to Writer board and try again.
Error in address 0000H...	The MTV230 may be malfunctioning or there is MTV230 on writer Board. Put the MTV230 to writer and try again.

Table2 Single writer Error message

3. COMPILER

Keil C51:
Version 5.x → 256 Byte Internal RAM & 128 Byte SFR & 256Byte XFR(F00h~FFFh)
Setting manner:
In Keil C51, please note that the addresses of XFR and AUXRAM are used in external RAM area F00h~FFFh and 800h~AFFh, as described in the following:

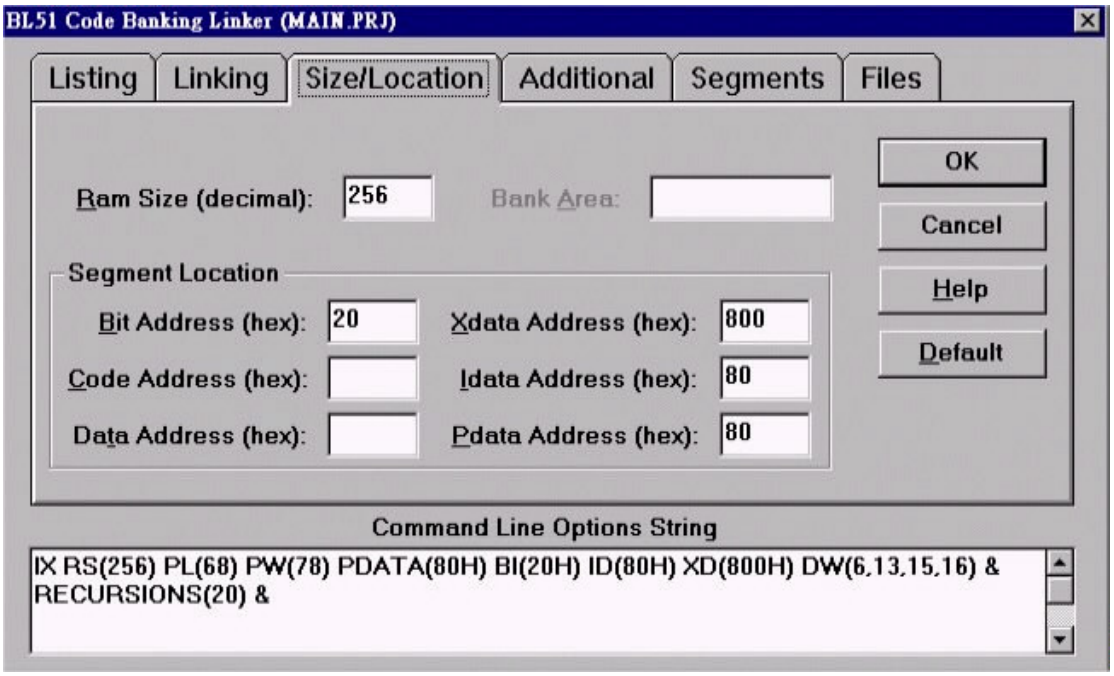

Figure 9 Keil c51 setting

4. ISP FUNCTION

Myson supports the ISP function to update the OSD font in MTV230 ICE board. You may update the OSD font by following steps

Step1: Run the 230isp.exe to go to the ISP mode (figure10)
Step2: Press the hot key **S** to change the mode to OSD mode (figure11)
Step3: Press the hot key **R** to read OSD data in ICE board (figure12)
Step4: Press the hot key **P** to program new OSD font to ICE board (figure13)
Step5: finish

Note: You can use the MYSON OSD Font edit to create the binary file, and use this to program the OSD font in MTV230.

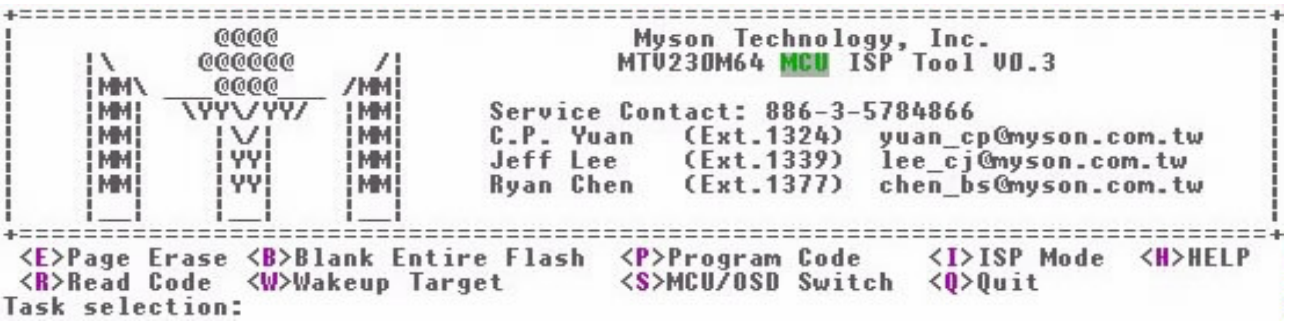

Figure 10 Entry to ISP mode

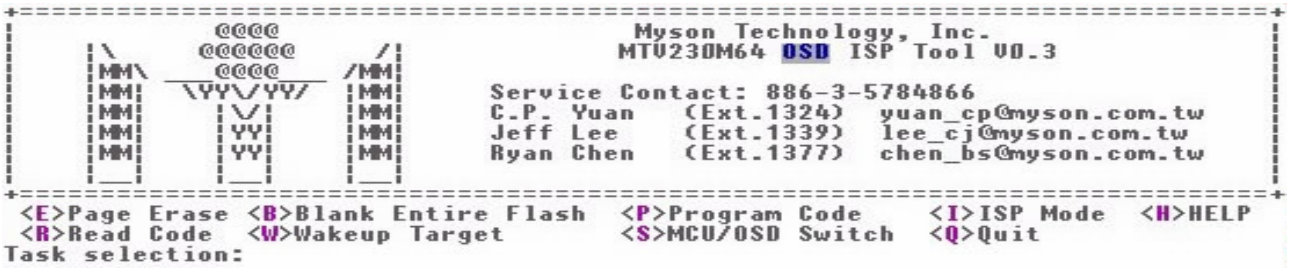

Figure 11 Entry to OSD mode

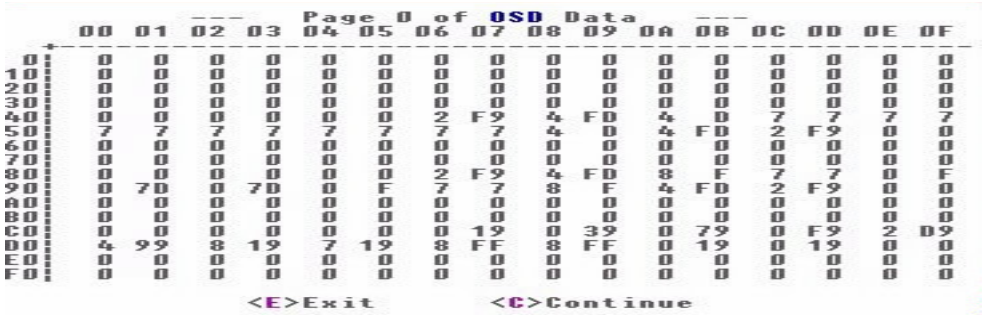

Figure 12 The OSD font data in ICE board

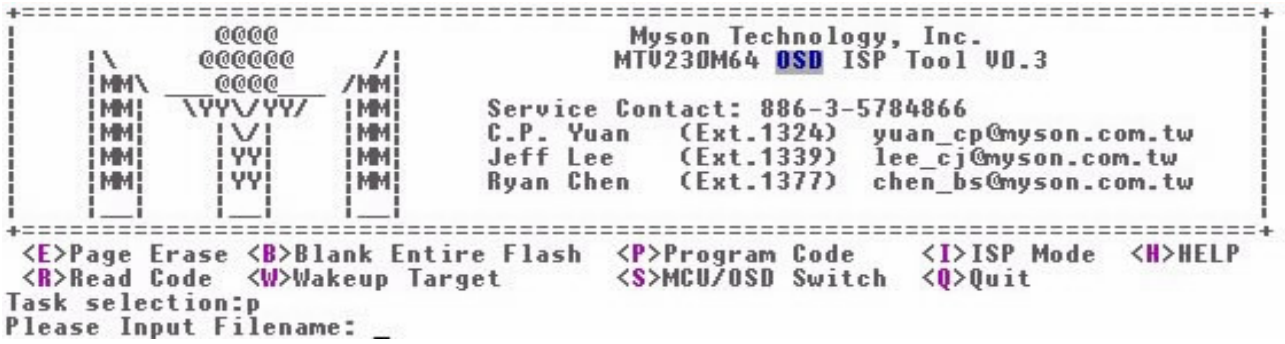

Figure 13 Program the OSD font

APPENDIX A

The standard 8051 internal register list

The MTV230 is 8051 based, so the internal register is the same as 8051. Any include files on 8051 can thus be introduced. The values of registers should be set according to the list below:

```
/*---------------------------------------------------------------------------
REG51.H
Header file for 8051.
Copyright (c) 1988-1997 Keil Elektronik GmbH and Keil Software, Inc.
All rights reserved.
---------------------------------------------------------------------------*/
```

```
/*   BYTE Register   */
sfr P0     = 0x80;
sfr P1     = 0x90;
sfr P2     = 0xA0;
sfr P3     = 0xB0;
sfr PSW    = 0xD0;
sfr ACC    = 0xE0;
sfr B      = 0xF0;
sfr SP     = 0x81;
sfr DPL    = 0x82;
sfr DPH    = 0x83;
sfr PCON = 0x87;
sfr TCON = 0x88;
sfr TMOD = 0x89;
sfr TL0    = 0x8A;
sfr TL1    = 0x8B;
sfr TH0    = 0x8C;
sfr TH1    = 0x8D;
sfr IE     = 0xA8;
sfr IP     = 0xB8;
sfr SCON = 0x98;
sfr SBUF = 0x99;


/*   BIT Register   */
/*   PSW     */
sbit CY     = 0xD7;
sbit AC     = 0xD6;
sbit F0     = 0xD5;
sbit RS1    = 0xD4;
sbit RS0    = 0xD3;
sbit OV     = 0xD2;
sbit P      = 0xD0;

/*   TCON   */
sbit TF1    = 0x8F;
sbit TR1    = 0x8E;
sbit TF0    = 0x8D;
sbit TR0    = 0x8C;
sbit IE1    = 0x8B;
sbit IT1    = 0x8A;
sbit IE0    = 0x89;
sbit IT0    = 0x88;

/*   IE     */
sbit EA     = 0xAF;
sbit ES     = 0xAC;
sbit ET1    = 0xAB;
sbit EX1    = 0xAA;
sbit ET0    = 0xA9;
sbit EX0    = 0xA8;

/*   IP     */
sbit PS     = 0xBC;
sbit PT1    = 0xBB;
sbit PX1    = 0xBA;
sbit PT0    = 0xB9;
```

```
sbit PX0    = 0xB8;
/*   P3    */
sbit RD      = 0xB7;
sbit WR      = 0xB6;
sbit T1      = 0xB5;
sbit T0      = 0xB4;
sbit INT1 = 0xB3;
sbit INT0 = 0xB2;
sbit TXD    = 0xB1;
sbit RXD    = 0xB0;

/*   SCON    */
sbit SM0    = 0x9F;
sbit SM1    = 0x9E;
sbit SM2    = 0x9D;
sbit REN    = 0x9C;
sbit TB8    = 0x9B;
sbit RB8    = 0x9A;
sbit TI      = 0x99;
sbit RI      = 0x98;
```