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; AT89S53.INC

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; Atmel AT89S53 Processor Declarations

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$SAVE

$NOLIST

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; Byte Registers

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P0 DATA 80H ; Port 0

SP DATA 81H ; Stack Pointer

DPL DATA 82H ; Data Pointer Low Byte

DP0L DATA 82H ; Alternate Definition

DPH DATA 83H ; Data Pointer High Byte

DP0H DATA 83H ; Alternate Definition

DP1L DATA 84H ; Data Pointer 1 Low Byte

DP1H DATA 85H ; Data Pointer 1 High Byte

SPDR DATA 86H ; SPI Data Register

PCON DATA 87H ; Power Control Register

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TCON DATA 88H ; Timer Control Register

TMOD DATA 89H ; Timer Mode Control Register

TL0 DATA 8AH ; Timer 0 Low Byte

TL1 DATA 8BH ; Timer 1 Low Byte

TH0 DATA 8CH ; Timer 0 High Byte

TH1 DATA 8DH ; Timer 1 High Byte

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P1 DATA 90H ; Port 1

WMCON DATA 96H ; Watchdog and Memory Control Register

SCON DATA 98H ; Serial Port Control

SBUF DATA 99H ; Serial Port Buffer

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P2 DATA 0A0H ; Port 2

IE DATA 0A8H ; Interrupt Enable Register 0

SPSR DATA 0AAH ; SPI Status Register

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P3 DATA 0B0H ; Port 3

IP DATA 0B8H ; Interrupt Priority Register

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T2CON DATA 0C8H ; Timer 2 Control

T2MOD DATA 0C9H ; Timer 2 Mode

RCAP2L DATA 0CAH ; Timer 2 Capture Low Byte

RCAP2H DATA 0CBH ; Timer 2 Capture High Byte

TL2 DATA 0CCH ; Timer 2 Low Byte

TH2 DATA 0CDH ; Timer 2 High Byte

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PSW DATA 0D0H ; Program Status Word

SPCR DATA 0D5H ; SPI Control Register

ACC DATA 0E0H ; Accumulator

B DATA 0F0H ; B Register

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; Bit Registers

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P0\_0 BIT 80H

P0\_1 BIT 81H

P0\_2 BIT 82H

P0\_3 BIT 83H

P0\_4 BIT 84H

P0\_5 BIT 85H

P0\_6 BIT 86H

P0\_7 BIT 87H

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;TCON (88H) Bit Registers

IT0 BIT 88H ; Interrupt 0 Type Control Bit

IE0 BIT 89H ; Interrupt 0 Edge Flag

IT1 BIT 8AH ; Interrupt 1 Type Control Bit

IE1 BIT 8BH ; Interrupt 1 Edge Flag

TR0 BIT 8CH ; Timer 0 Run Control Bit

TF0 BIT 8DH ; Timer 0 Overflow Flag

TR1 BIT 8EH ; Timer 1 Run Control Bit

TF1 BIT 8FH ; Timer 1 Overflow Flag

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;P1 (90H) Bit Registers

P1\_0 BIT 90H

P1\_1 BIT 91H

P1\_2 BIT 92H

P1\_3 BIT 93H

P1\_4 BIT 94H

P1\_5 BIT 95H

P1\_6 BIT 96H

P1\_7 BIT 97H

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T2 BIT 90H ; External input to Timer/Counter 2, clock out

T2EX BIT 91H ; Timer/Counter 2 capture/reload trigger & dir ctl

SS BIT 94H ; SPI: SS - Slave port select input

MOSI BIT 95H ; SPI: MOSI - Master data output, slave data input

MISO BIT 96H ; SPI: MISO - Master data input, slave data output

SCK BIT 97H ; SPI: SCK - Master clock output, slave clock input

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; SCON (98H) Bit Registers

RI BIT 98H ; Receive Interrupt Flag

TI BIT 99H ; Transmit Interrupt Flag

RB8 BIT 9AH ; 9th data bit received

TB8 BIT 9BH ; 9th data bit to be transmitted in modes 2 & 3

REN BIT 9CH ; Receive Enable

SM2 BIT 9DH ; Serial Port Mode Bit 2

SM1 BIT 9EH ; Serial Port Mode Bit 1

SM0 BIT 9FH ; Serial Port Mode Bit 0

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; P2 (A0H) Bit Registers

P2\_0 BIT 0A0H

P2\_1 BIT 0A1H

P2\_2 BIT 0A2H

P2\_3 BIT 0A3H

P2\_4 BIT 0A4H

P2\_5 BIT 0A5H

P2\_6 BIT 0A6H

P2\_7 BIT 0A7H

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; IE (A8H) Bit Registers

EX0 BIT 0A8H ; External Interrupt 0 Enable: 1=Enabled

ET0 BIT 0A9H ; Timer 0 Interrupt Enable: 1=Enabled

EX1 BIT 0AAH ; External Interrupt 1 Enable: 1=Enabled

ET1 BIT 0ABH ; Timer 1 Interrupt Enable: 1=Enabled

ES BIT 0ACH ; SPI and UART Interrupt Enable: 1=Enabled

ET2 BIT 0ADH ; Timer 2 Interrupt Enable: 1=Enabled

EA BIT 0AFH ; Global Interrupt Enable: 0=Disable all interrupts

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; P3 (B0H) Bit Registers (Mnemonics & Ports)

P3\_0 BIT 0B0H

P3\_1 BIT 0B1H

P3\_2 BIT 0B2H

P3\_3 BIT 0B3H

P3\_4 BIT 0B4H

P3\_5 BIT 0B5H

P3\_6 BIT 0B6H

P3\_7 BIT 0B7H

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RXD BIT 0B0H ; Serial data input

TXD BIT 0B1H ; Serial data output

INT0 BIT 0B2H ; External interrupt 0

INT1 BIT 0B3H ; External interrupt 1

T0 BIT 0B4H ; Timer 0 external input

T1 BIT 0B5H ; Timer 1 external input

WR BIT 0B6H ; External data memory write strobe

RD BIT 0B7H ; External data memory read strobe

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; IP (B8H) Bit Registers

PX0 BIT 0B8H ; External Interrupt 0 Priority Bit

PT0 BIT 0B9H ; Timer 0 Interrupt Priority Bit

PX1 BIT 0BAH ; External Interrupt 1 Priority Bit

PT1 BIT 0BBH ; Timer 1 Interrupt Priority Bit

PS BIT 0BCH ; Serial Port Interrupt Priority Bit

PT2 BIT 0BDH ; Timer 2 Interrupt Priority Bit

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;T2CON (C8H) Bit Registers

CP\_RL2 BIT 0C8H ; 0=Reload, 1=Capture select

C\_T2 BIT 0C9H ; 0=Timer, 1=Counter

TR2 BIT 0CAH ; 0=Stop timer, 1=Start timer

EXEN2 BIT 0CBH ; Timer 2 external enable

TCLK BIT 0CCH ; 0=Serial clock uses Timer 1 overflow, 1=Timer 2

RCLK BIT 0CDH ; 0=Serial clock uses Timer 1 overflow, 1=Timer 2

EXF2 BIT 0CEH ; Timer 2 external flag

TF2 BIT 0CFH ; Timer 2 overflow flag

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;PSW (D0H) Bit Registers

P BIT 0D0H ; Parity Flag

FL BIT 0D1H ; User Flag

OV BIT 0D2H ; Overflow Flag

RS0 BIT 0D3H ; Register Bank Select Bit 0

RS1 BIT 0D4H ; Register Bank Select Bit 1

F0 BIT 0D5H ; User Flag 0

AC BIT 0D6H ; Auxiliary Carry Flag

CY BIT 0D7H ; Carry Flag

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$RESTORE