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; Declarations for Silabs C8051F54x based microcontroller.

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; Devices: C8051F540/1/2/3/4/5/6/7

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$SAVE

$NOLIST

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; SFRPage 0x00 and SFRPage 0x0F Registers

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P0 DATA 080H ; Port 0 Latch

SP DATA 081H ; Stack Pointer

DPL DATA 082H ; Data Pointer Low

DPH DATA 083H ; Data Pointer High

SFR0CN DATA 084H ; SFR Page Control

SFRNEXT DATA 085H ; SFR stack next page

SFRLAST DATA 086H ; SFR stack last page

PCON DATA 087H ; Power Control

TCON DATA 088H ; Timer/Counter Control

TMOD DATA 089H ; Timer/Counter Mode

TL0 DATA 08AH ; Timer/Counter 0 Low

TL1 DATA 08BH ; Timer/Counter 1 Low

TH0 DATA 08CH ; Timer/Counter 0 High

TH1 DATA 08DH ; Timer/Counter 1 High

CKCON DATA 08EH ; Clock Control

PSCTL DATA 08FH ; Program Store R/W Control

CLKSEL DATA 08FH ; System clock select

P1 DATA 090H ; Port 1 Latch

TMR3CN DATA 091H ; Timer/Counter 3 Control

TMR3RLL DATA 092H ; Timer/Counter 3 Reload Low

TMR3RLH DATA 093H ; Timer/Counter 3 Reload High

TMR3L DATA 094H ; Timer/Counter 3 Low

TMR3H DATA 095H ; Timer/Counter 3 High

CLKMUL DATA 097H ; Clock Multiplier

SCON0 DATA 098H ; UART0 Control

SBUF0 DATA 099H ; UART0 Data Buffer

CPT0CN DATA 09AH ; Comparator 0 Control

CPT0MD DATA 09BH ; Comparator 0 Mode

CPT0MX DATA 09CH ; Comparator 0 Mux

CPT1CN DATA 09DH ; Comparator 1 Control

CPT1MD DATA 09EH ; Comparator 0 Mode

OSCIFIN DATA 09EH ; Internal Oscillator Fine Control

CPT1MX DATA 09FH ; Comparator 1 Mux

OSCXCN DATA 09FH ; External Oscillator Control

P2 DATA 0A0H ; Port 2 Latch

SPI0CFG DATA 0A1H ; SPI0 Configuration

OSCICN DATA 0A1H ; Internal Oscillator Control

SPI0CKR DATA 0A2H ; SPI0 Clock rate control

OSCICRS DATA 0A2H ; Internal Oscillator Coarse Control

SPI0DAT DATA 0A3H ; SPI0 Data Buffer

P0MDOUT DATA 0A4H ; Port 0 Output Mode

P1MDOUT DATA 0A5H ; Port 1 Output Mode

P2MDOUT DATA 0A6H ; Port 2 Output Mode

SFRPAGE DATA 0A7H ; SFR Page Select

IE DATA 0A8H ; Interrupt Enable

SMOD0 DATA 0A9H ; Serial Port 0 Control

EMI0CN DATA 0AAH ; EMIF Control

SBCON0 DATA 0ABH ; UART0 Baud Rate Generator Control

SBRLL0 DATA 0ACH ; UART0 Baud Rate Generator Low

SBRLH0 DATA 0ADH ; UART0 Baud Rate Generator High

P3MAT DATA 0AEH ; Port 3 Match

P3MDOUT DATA 0AEH ; Port 3 Mode

P3MASK DATA 0AFH ; Port 3 Mask

P3 DATA 0B0H ; Port 3 Latch

P2MAT DATA 0B1H ; Port 2 Match

P2MASK DATA 0B2H ; Port 2 Mask

FLSCL DATA 0B6H ; Flash Scale

FLKEY DATA 0B7H ; Flash access limit

IP DATA 0B8H ; Interrupt Priority

SMB0ADR DATA 0B9H ; SMBus0 Slave address

ADC0TK DATA 0BAH ; ADC0 Tracking Mode Select

SMB0ADM DATA 0BAH ; SMBus0 Address Mask

ADC0MX DATA 0BBH ; AMUX0 Channel select

ADC0CF DATA 0BCH ; AMUX0 Channel configuration

ADC0L DATA 0BDH ; ADC0 Data Low

ADC0H DATA 0BEH ; ADC0 Data High

SMB0CN DATA 0C0H ; SMBus0 Control

SMB0CF DATA 0C1H ; SMBus0 Configuration

SMB0DAT DATA 0C2H ; SMBus0 Data

ADC0GTL DATA 0C3H ; ADC0 Greater-Than Compare Low

ADC0GTH DATA 0C4H ; ADC0 Greater-Than Compare High

ADC0LTL DATA 0C5H ; ADC0 Less-Than Compare Word Low

ADC0LTH DATA 0C6H ; ADC0 Less-Than Compare Word High

XBR2 DATA 0C7H ; Port I/O Crossbar Control 2

TMR2CN DATA 0C8H ; Timer/Counter 2 Control

REG0CN DATA 0C9H ; Regulator Control

LIN0CF DATA 0C9H ; LIN 0 Configuration

TMR2RLL DATA 0CAH ; Timer/Counter 2 Reload Low

TMR2RLH DATA 0CBH ; Timer/Counter 2 Reload High

TMR2L DATA 0CCH ; Timer/Counter 2 Low

TMR2H DATA 0CDH ; Timer/Counter 2 High

PCA0CPL5 DATA 0CEH ; PCA0 Capture 5 Low

PCA0CPH5 DATA 0CFH ; PCA0 Capture 5 High

PSW DATA 0D0H ; Program Status Word

REF0CN DATA 0D1H ; Voltage Reference Control

LIN0DAT DATA 0D2H ; LIN0 Data

LIN0ADR DATA 0D3H ; LIN0 Address

P0SKIP DATA 0D4H ; Port 0 Skip

P1SKIP DATA 0D5H ; Port 1 Skip

P2SKIP DATA 0D6H ; Port 2 Skip

P3SKIP DATA 0D7H ; Port 3 Skip

PCA0CN DATA 0D8H ; PCA0 Control

PCA0MD DATA 0D9H ; PCA0 Mode

PCA0PWM DATA 0D9H ; PCA0 PWM Control

PCA0CPM0 DATA 0DAH ; PCA0 Module 0 Mode

PCA0CPM1 DATA 0DBH ; PCA0 Module 1 Mode

PCA0CPM2 DATA 0DCH ; PCA0 Module 2 Mode

PCA0CPM3 DATA 0DDH ; PCA0 Module 3 Mode

PCA0CPM4 DATA 0DEH ; PCA0 Module 4 Mode

PCA0CPM5 DATA 0DFH ; PCA0 Module 5 Mode

ACC DATA 0E0H ; Accumulator

XBR0 DATA 0E1H ; Port I/O Crossbar Control 0

XBR1 DATA 0E2H ; Port I/O Crossbar Control 1

CCH0CN DATA 0E3H ; Cache control

IT01CF DATA 0E4H ; INT0/INT1 Configuration

EIE1 DATA 0E6H ; Extended Interrupt Enable 2

EIE2 DATA 0E7H ; Extended Interrupt Enable 2

ADC0CN DATA 0E8H ; ADC0 Control

PCA0CPL1 DATA 0E9H ; PCA0 Capture 2 Low

PCA0CPH1 DATA 0EAH ; PCA0 Capture 2 High

PCA0CPL2 DATA 0EBH ; PCA0 Capture 3 Low

PCA0CPH2 DATA 0ECH ; PCA0 Capture 3 High

PCA0CPL3 DATA 0EDH ; PCA0 Capture 4 Low

PCA0CPH3 DATA 0EEH ; PCA0 Capture 4 High

RSTSRC DATA 0EFH ; Reset Source Configuration/Status

B DATA 0F0H ; B Register

P0MAT DATA 0F1H ; Port 0 Match

P0MDIN DATA 0F1H ; Port 0 Input Mode

P0MASK DATA 0F2H ; Port 0 Mask

P1MDIN DATA 0F2H ; Port 1 Input Mode

P1MAT DATA 0F3H ; Port 1 Match

P2MDIN DATA 0F3H ; Port 2 Input Mode

P1MASK DATA 0F4H ; Port 1 Mask

P3MDIN DATA 0F4H ; Port 3 Input Mode

PSBANK DATA 0F5H ; Program Space Bank Select

EIP1 DATA 0F6H ; External Interrupt Priority 1

EIP2 DATA 0F7H ; External Interrupt Priority 2

SPI0CN DATA 0F8H ; SPI0 Control

PCA0L DATA 0F9H ; PCA0 Counter Low

PCA0H DATA 0FAH ; PCA0 Counter High

PCA0CPL0 DATA 0FBH ; PCA0 Capture 0 Low

PCA0CPH0 DATA 0FCH ; PCA0 Capture 0 High

PCA0CPL4 DATA 0FDH ; PCA0 Capture 4 Low

PCA0CPH4 DATA 0FEH ; PCA0 Capture 4 High

VDM0CN DATA 0FFH ; VDD Monitor Control

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; Bit Definitions

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; TCON 0x88

TF1 BIT TCON.7 ; Timer 1 Overflow Flag

TR1 BIT TCON.6 ; Timer 1 On/Off Control

TF0 BIT TCON.5 ; Timer 0 Overflow Flag

TR0 BIT TCON.4 ; Timer 0 On/Off Control

IE1 BIT TCON.3 ; Ext. Interrupt 1 Edge Flag

IT1 BIT TCON.2 ; Ext. Interrupt 1 Type

IE0 BIT TCON.1 ; Ext. Interrupt 0 Edge Flag

IT0 BIT TCON.0 ; Ext. Interrupt 0 Type

; SCON0 0x98

OVR0 BIT SCON0.7 ; UART0 Mode 0

PERR0 BIT SCON0.6 ; UART0 Parity Error Flag

THRE0 BIT SCON0.5 ; UART0 Transmit Holding Reg. Empty

REN0 BIT SCON0.4 ; UART0 RX Enable

TBX0 BIT SCON0.3 ; UART0 TX Bit 8

RBX0 BIT SCON0.2 ; UART0 RX Bit 8

TI0 BIT SCON0.1 ; UART0 TX Interrupt Flag

RI0 BIT SCON0.0 ; UART0 RX Interrupt Flag

; IE 0xA8

EA BIT IE.7 ; Global Interrupt Enable

ESPI0 BIT IE.6 ; SPI0 Interrupt Enable

ET2 BIT IE.5 ; Timer 2 Interrupt Enable

ES0 BIT IE.4 ; UART0 Interrupt Enable

ET1 BIT IE.3 ; Timer 1 Interrupt Enable

EX1 BIT IE.2 ; External Interrupt 1 Enable

ET0 BIT IE.1 ; Timer 0 Interrupt Enable

EX0 BIT IE.0 ; External Interrupt 0 Enable

; IP 0xB8

; Bit 7 unused

PSPI0 BIT IP.6 ; SPI0 Interrupt Priority

PT2 BIT IP.5 ; Timer 2 Priority

PS0 BIT IP.4 ; UART0 Priority

PS BIT IP.4 ; UART0 Priority

PT1 BIT IP.3 ; Timer 1 Priority

PX1 BIT IP.2 ; External Interrupt 1 Priority

PT0 BIT IP.1 ; Timer 0 Priority

PX0 BIT IP.0 ; External Interrupt 0 Priority

; SMB0CN 0xC0

MASTER BIT SMB0CN.7 ; SMBus0 Master/Slave Indicator

TXMODE BIT SMB0CN.6 ; SMBus0 Transmit Mode Indicator

STA BIT SMB0CN.5 ; SMBus0 Start Flag

STO BIT SMB0CN.4 ; SMBus0 Stop Flag

ACKRQ BIT SMB0CN.3 ; SMBus0 Acknowledge Request

ARBLOST BIT SMB0CN.2 ; SMBus0 Arbitration Lost Indicator

ACK BIT SMB0CN.1 ; SMBus0 Acknowledge

SI BIT SMB0CN.0 ; SMBus0 Interrupt Flag

; TMR2CN 0xC8

TF2H BIT TMR2CN.7 ; Timer 2 High-Byte Overflow Flag

TF2L BIT TMR2CN.6 ; Timer 2 Low-Byte Overflow Flag

TF2LEN BIT TMR2CN.5 ; Timer 2 Low-Byte Flag Enable

TF2CEN BIT TMR2CN.4 ; Timer 2 Capture Enable

T2SPLIT BIT TMR2CN.3 ; Timer 2 Split-Mode Enable

TR2 BIT TMR2CN.2 ; Timer2 Run Enable

T2RCLK BIT TMR2CN.1 ; Timer 2 Xclk/Rclk Select

T2XCLK BIT TMR2CN.0 ; Timer 2 Clk/8 Clock Source

; PSW 0xD0

CY BIT PSW.7 ; Carry Flag

AC BIT PSW.6 ; Auxiliary Carry Flag

F0 BIT PSW.5 ; User Flag 0

RS1 BIT PSW.4 ; Register Bank Select 1

RS0 BIT PSW.3 ; Register Bank Select 0

OV BIT PSW.2 ; Overflow Flag

F1 BIT PSW.1 ; User Flag 1

P BIT PSW.0 ; Accumulator Parity Flag

; PCA0CN 0xD8

CF BIT PCA0CN.7 ; PCA0 Counter Overflow Flag

CR BIT PCA0CN.6 ; PCA0 Counter Run Control Bit

CCF5 BIT PCA0CN.5 ; PCA0 Module 5 Interrupt Flag

CCF4 BIT PCA0CN.4 ; PCA0 Module 4 Interrupt Flag

CCF3 BIT PCA0CN.3 ; PCA0 Module 3 Interrupt Flag

CCF2 BIT PCA0CN.2 ; PCA0 Module 2 Interrupt Flag

CCF1 BIT PCA0CN.1 ; PCA0 Module 1 Interrupt Flag

CCF0 BIT PCA0CN.0 ; PCA0 Module 0 Interrupt Flag

; ADC0CN 0xE8

AD0EN BIT ADC0CN.7 ; ADC0 Enable

BURSTEN BIT ADC0CN.6 ; ADC0 Burst Enable

AD0INT BIT ADC0CN.5 ; ADC0 EOC Interrupt Flag

AD0BUSY BIT ADC0CN.4 ; ADC0 Busy Flag

AD0WINT BIT ADC0CN.3 ; ADC0 Window Compare Interrupt Flag

AD0LJST BIT ADC0CN.2 ; ADC0 Left Justified

AD0CM1 BIT ADC0CN.1 ; ADC0 Start Of Conversion Mode Bit 1

AD0CM0 BIT ADC0CN.0 ; ADC0 Start Of Conversion Mode Bit 0

; SPI0CN 0xF8

SPIF BIT SPI0CN.7 ; SPI0 Interrupt Flag

WCOL BIT SPI0CN.6 ; SPI0 Write Collision Flag

MODF BIT SPI0CN.5 ; SPI0 Mode Fault Flag

RXOVRN BIT SPI0CN.4 ; SPI0 RX Overrun Flag

NSSMD1 BIT SPI0CN.3 ; SPI0 Slave Select Mode 1

NSSMD0 BIT SPI0CN.2 ; SPI0 Slave Select Mode 0

TXBMT BIT SPI0CN.1 ; SPI0 TX Buffer Empty Flag

SPIEN BIT SPI0CN.0 ; SPI0 Enable

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; LIN0 Indirect Registers

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LIN0DT1 EQU 00H ; LIN0 Data Byte 1

LIN0DT2 EQU 01H ; LIN0 Data Byte 2

LIN0DT3 EQU 02H ; LIN0 Data Byte 3

LIN0DT4 EQU 03H ; LIN0 Data Byte 4

LIN0DT5 EQU 04H ; LIN0 Data Byte 5

LIN0DT6 EQU 05H ; LIN0 Data Byte 6

LIN0DT7 EQU 06H ; LIN0 Data Byte 7

LIN0DT8 EQU 07H ; LIN0 Data Byte 8

LIN0CTRL EQU 08H ; LIN0 Control

LIN0ST EQU 09H ; LIN0 Status

LIN0ERR EQU 0AH ; LIN0 Error

LIN0SIZE EQU 0BH ; LIN0 Message Size

LIN0DIV EQU 0CH ; LIN0 Divider

LIN0MUL EQU 0DH ; LIN0 Multiplier

LIN0ID EQU 0EH ; LIN0 Identifier

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; Interrupt Priorities

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INTERRUPT\_INT0 EQU 0 ; External Interrupt 0

INTERRUPT\_TIMER0 EQU 1 ; Timer0 Overflow

INTERRUPT\_INT1 EQU 2 ; External Interrupt 1

INTERRUPT\_TIMER1 EQU 3 ; Timer1 Overflow

INTERRUPT\_UART0 EQU 4 ; UART0

INTERRUPT\_TIMER2 EQU 5 ; Timer2 Overflow

INTERRUPT\_SPI0 EQU 6 ; SPI0

INTERRUPT\_SMBUS0 EQU 7 ; SMBus0 Interface

INTERRUPT\_ADC0\_WINDOW EQU 8 ; ADC0 Window Comparison

INTERRUPT\_ADC0\_EOC EQU 9 ; ADC0 End Of Conversion

INTERRUPT\_PCA0 EQU 10 ; PCA0 Peripheral

INTERRUPT\_COMPARATOR0 EQU 11 ; Comparator0 Comparison

INTERRUPT\_COMPARATOR1 EQU 12 ; Comparator1 Comparison

INTERRUPT\_TIMER3 EQU 13 ; Timer3 Overflow

INTERRUPT\_LIN0 EQU 14 ; LIN Bus Interrupt

INTERRUPT\_VREG EQU 15 ; Voltage Regulator

INTERRUPT\_PORT\_MATCH EQU 17 ; Port Match

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; SFR Page Definitions

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CONFIG\_PAGE EQU 0FH ; System and Port Configuration Page

ACTIVE\_PAGE EQU 00H ; Active Use Page

$RESTORE