

ACCESSING MEMORY

SFR Registers and Their Addresses

- ❑ The SFR (*Special Function Register*) can be accessed by their names or by their addresses

MOV 0E0H, #55H	;is the same as
MOV A, #55h	;load 55H into A
MOV 0F0H, R0	;is the same as
MOV B, R0	;copy R0 into B

- ❑ The SFR registers have addresses between 80H and FFH
 - Not all the address space of 80 to FF is used by SFR
 - The unused locations 80H to FFH are reserved and must not be used by the 8051 programmer



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SFR Registers and Their Addresses (cont')

Special Function Register (SFR) Addresses

Symbol	Name	Address
ACC*	Accumulator	0E0H
B*	B register	0F0H
PSW*	Program status word	0D0H
SP	Stack pointer	81H
DPTR	Data pointer 2 bytes	
DPL	Low byte	82H
DPH	High byte	83H
P0*	Port 0	80H
P1*	Port 1	90H
P2*	Port 2	0A0H
P3*	Port 3	0B0H
IP*	Interrupt priority control	0B8H
IE*	Interrupt enable control	0A8H
...	...	...



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SFR Registers and Their Addresses (cont')

Special Function Register (SFR) Addresses

Symbol	Name	Address
TMOD	Timer/counter mode control	89H
TCON*	Timer/counter control	88H
T2CON*	Timer/counter 2 control	0C8H
T2MOD	Timer/counter mode control	0C9H
TH0	Timer/counter 0 high byte	8CH
TL0	Timer/counter 0 low byte	8AH
TH1	Timer/counter 1 high byte	8DH
TL1	Timer/counter 1 low byte	8BH
TH2	Timer/counter 2 high byte	0CDH
TL2	Timer/counter 2 low byte	0CCH
RCAP2H	T/C 2 capture register high byte	0CBH
RCAP2L	T/C 2 capture register low byte	0CAH
SCON*	Serial control	98H
SBUF	Serial data buffer	99H
PCON	Power on/off control	87H

*** Bit addressable**



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SFR Registers and Their Addresses (cont')

Example 5-1

Write code to send 55H to ports P1 and P2, using
(a) their names (b) their addresses

Solution :

(a) `MOV A, #55H` ;A=55H
 `MOV P1, A` ;P1=55H
 `MOV P2, A` ;P2=55H

(b) From Table 5-1, P1 address=80H; P2 address=A0H
 `MOV A, #55H` ;A=55H
 `MOV 80H, A` ;P1=55H
 `MOV 0A0H, A` ;P2=55H

