Undocumented 8085 Instructions

FLAG REGISTER of 8085

Bit	undocumented 8085	Remark
7 (MSB)	S	Mark flag,sign flag
6	Z	Zero flag
5	X5,k	Originally unused, concerning X5 or k it mentions later
4	AC	Auxiliary(Assistant) carry or half carry and for BCD operation revision
3	0	Unused
2	P	Parity flag, as for just Z80 CPU overflow flag combined use
1	V	Overflow flag or subtraction flag
0 (LSB)	C	Carry

X5-in case of the usual 8 bit addition and subtraction when the mark of 1st operand S1, the mark of 2nd operand designating the mark of S2 and the operational result as R, it seems that can describe the change of X5 with the formula, X5 = S1 & S2 | S1 & R | S2 & R.

UNDOCUMENTED INSTRUCTIONS OF 8085

Operator cord/ code	clock	undocumented 8085	Discription
08	10	DSUB	HL = HL - BC . Z, S, P, CY, AC and X5, V all flag receives influence
10	7	ARHL,RRHL	Rotate HL right. 16-bit rotation, flags unchanged. HL = HL/2 and CY = L0 . ARHL order is arithmetic right shift of HL register pair. MSB of the H register which means the mark does not change. The least significant bit of L register enters into the CY flag. Just the CY flag changes.

18	10	RDEL,RLDE	Rotate DE left. Bit 15 to Carry. No other flags. DE = DE*2 and E0=CY and CY =D7
20	RIM	RIM	read interrupt mask
28	10	LDHI imm,ADI HL,bb	Add 00bb immediate to HL, setting flags. DE = HL + imm
30	SIM	SIM	set interrupt mask.
38	10	LDSI imm,ADI SP,bb	Add 00bb immediate to stack pointer, setting flags. DE < - SP + imm
CB	6/12	RSTV,OVRST8	RST 8 (to 0040) if the V flag is set. push PC and PC = 0040H
D9	10	SHLX,SHLDE	LD [DE],HL.[DE] = HL
DD	7/10	JNX5 addr,JNK addr	Jump to location addr if K flag is reset. if (! X5) PC = addr
ED	10	LHLX,LHLDE	LD HL,(DE).HL= [DE]
FD	7/10	JX5 addr,JK addr	Jump to location addr if K flag is set. if (X5) PC = addr

The 8085 is 100% software compatible with the 8080. It was called the 8085 because it's a 5V version of the 8080, which needs +5, +12 and -5 voltage supplies.

Labels: **8085**