

REGISTER-REFERENCE INSTRUCTIONS

[$I_{(15)}$ $XXX_{(12-14)}$ $YYYYYYYYYYYY_{(0-11)}$]

$XXX_{(12-14)} = 111$ İSE DECODE EDİLDİĞİNDE 10000000 OLACAKTIR.

D_7 D_6 D_5 D_4 D_3 D_2 D_1 D_0

$D_7 = 1$ İSE BU REGISTER-REFERENCE VEYA I/O REFERENCE OLABİLİR. REGISTER-REFERENCE OLABİLMESİ İÇİN I DEĞERİNİN 0 OLMASI GEREKİYOR.

$YYYYYYYYYYYY$ 12 INSTRUCTION İFADE EDER. t_2 ZAMANINDA AR YE AKTARILIR. t_3 ZAMANINDA EXECUTE EDİLİRLER. HER DENETİM FONKSİYONU D_7 I T_3 BOOLE BAĞINTISI İÇERİR. (KISACA r DENİR)

IR NİN i BITİ B_i İLE GOSTERİLİRSE BUTUN DENETİM FONKSİYONLARI KISACA rB_i İLE GOSTERİLEBİLİR.

$D_7I'T_3 = r$ (common to all register-reference instructions)		
$IR(i) = B_i$ [bit in $IR(0-11)$ that specifies the operation]		
	r :	$SC \leftarrow 0$
CLA	rB_{11} :	$AC \leftarrow 0$
CLE	rB_{10} :	$E \leftarrow 0$
CMA	rB_9 :	$AC \leftarrow \overline{AC}$
CME	rB_8 :	$E \leftarrow \overline{E}$
CIR	rB_7 :	$AC \leftarrow shr\ AC, AC(15) \leftarrow E, E \leftarrow AC(0)$
CIL	rB_6 :	$AC \leftarrow shl\ AC, AC(0) \leftarrow E, E \leftarrow AC(15)$
INC	rB_5 :	$AC \leftarrow AC + 1$
SPA	rB_4 :	If $(AC(15) = 0)$ then $(PC \leftarrow PC + 1)$
SNA	rB_3 :	If $(AC(15) = 1)$ then $(PC \leftarrow PC + 1)$
SZA	rB_2 :	If $(AC = 0)$ then $PC \leftarrow PC + 1$
SZE	rB_1 :	If $(E = 0)$ then $(PC \leftarrow PC + 1)$
HLT	rB_0 :	$S \leftarrow 0$ (S is a start-stop flip-flop)
		Clear SC
		Clear AC
		Clear E
		Complement AC
		Complement E
		Circulate right
		Circulate left
		Increment AC
		Skip if positive
		Skip if negative
		Skip if AC zero
		Skip if E zero
		Halt computer