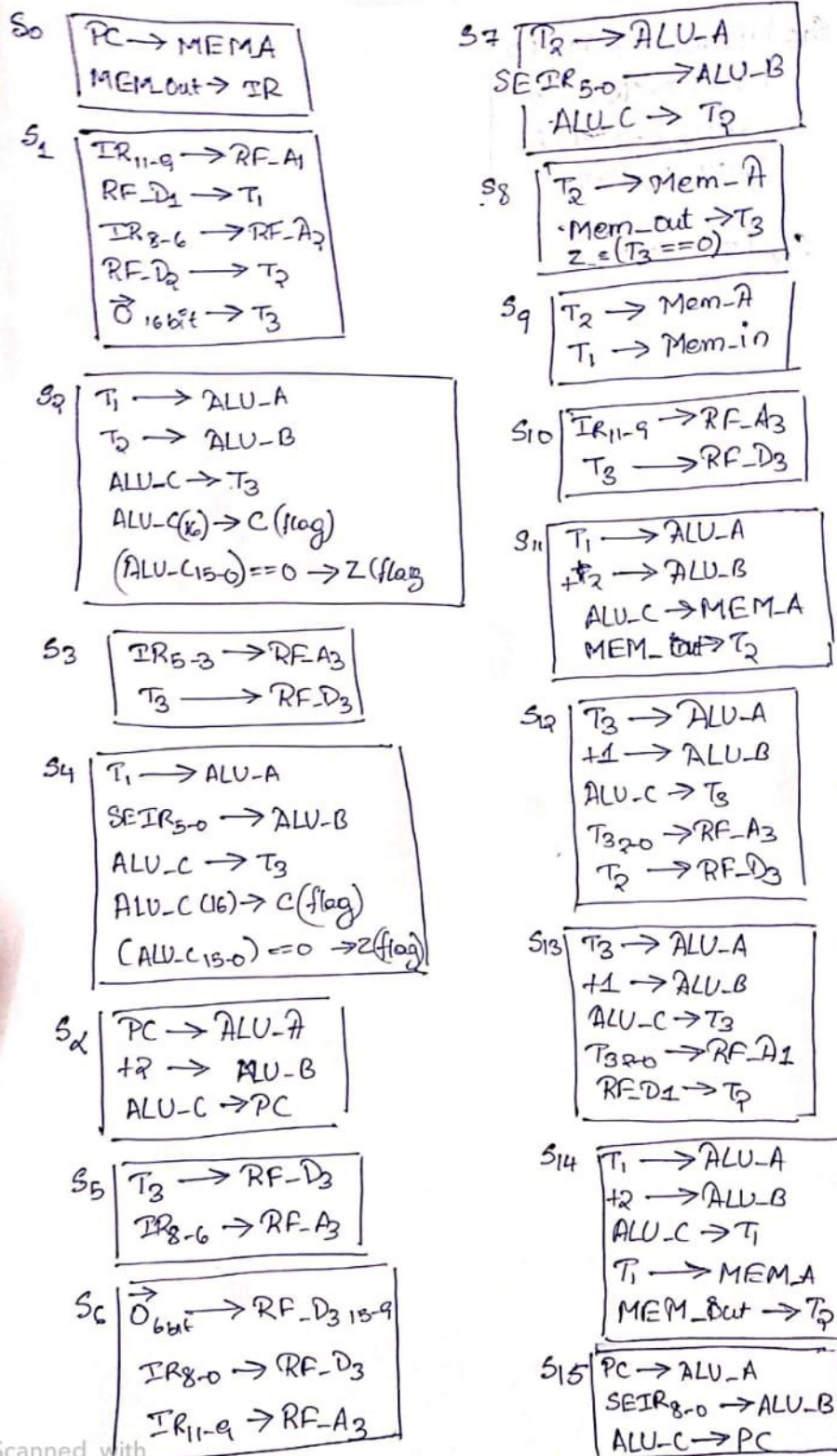


Digital Project Design

Data Path



S16

$IR_{11-9} \rightarrow RF-A_3$ $PC \rightarrow RF-D_3$ $IR_{8-6} \rightarrow RF-A_7$ $RF-D_2 \rightarrow T_2$
--

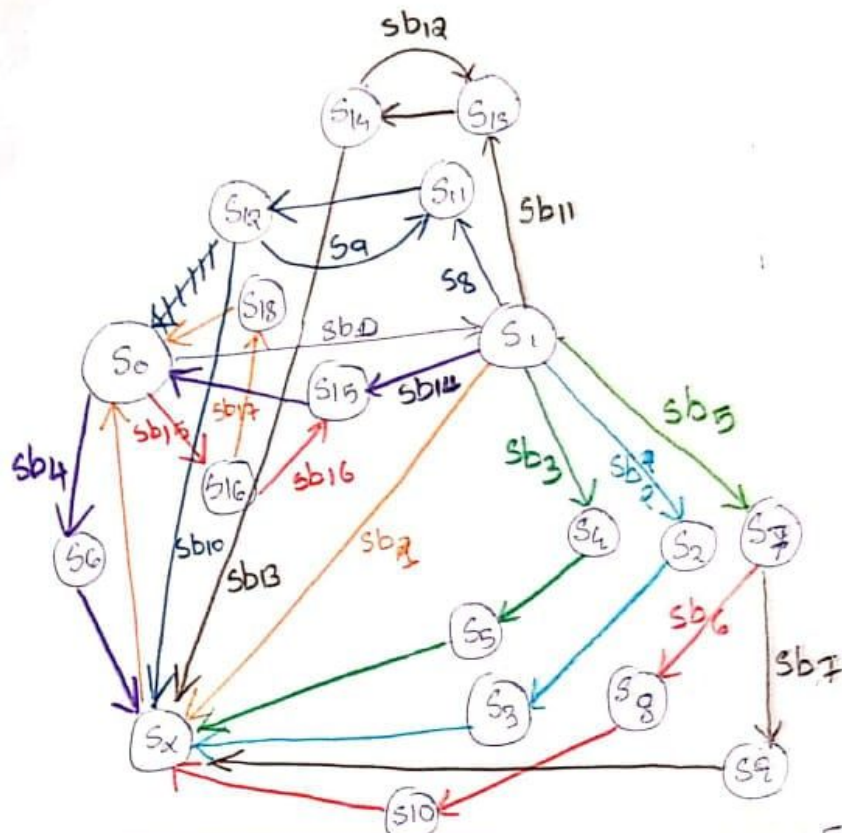
$AD_{11-9} \rightarrow T_1$ $RF-D_3 \rightarrow T_1$ $AD_{8-6} \rightarrow T_2$ $RF-D_2 \rightarrow T_2$ $AD_{5-4} \rightarrow T_3$ $RF-D_1 \rightarrow T_3$

S18

$T_2 \rightarrow PC$

Scanned with
CamScanner

State Diagram



$sb_0 - op = 0011 \text{ or } 1000 \text{ or } 1001$

$sb_1 - (opcode = 0000 \text{ or } 0010) (\overline{IR_{10}} = 10 \text{ or } (IR_{10} = 0)Z) \text{ or } [(RF_{17} \text{ xor } RF_{16}) \text{ or } 11]$

$sb_2 - [op = 0000 \text{ or } 0010] (op = 0000) (\overline{IR_{10}} = 10)Z + (\overline{IR_{10}} = 0)Z + (IR_{10} = 00)$

$sb_3 - [op = 0001]$

$sb_4 - [op = 0011]$

$sb_5 - [op = 0100 \text{ or } 0101]$

$sb_6 - [op = 0100]$

$sb_7 - [op = 0101]$

$sb_8 - [op = 0110]$

$sb_9 - T_{20} = 11$

$sb_{10} - T_{20} = 11$

$sb_{11} - [op = 0111]$

$sb_{12} - T_{20} = 000$

$sb_{13} - T_{20} = 000$

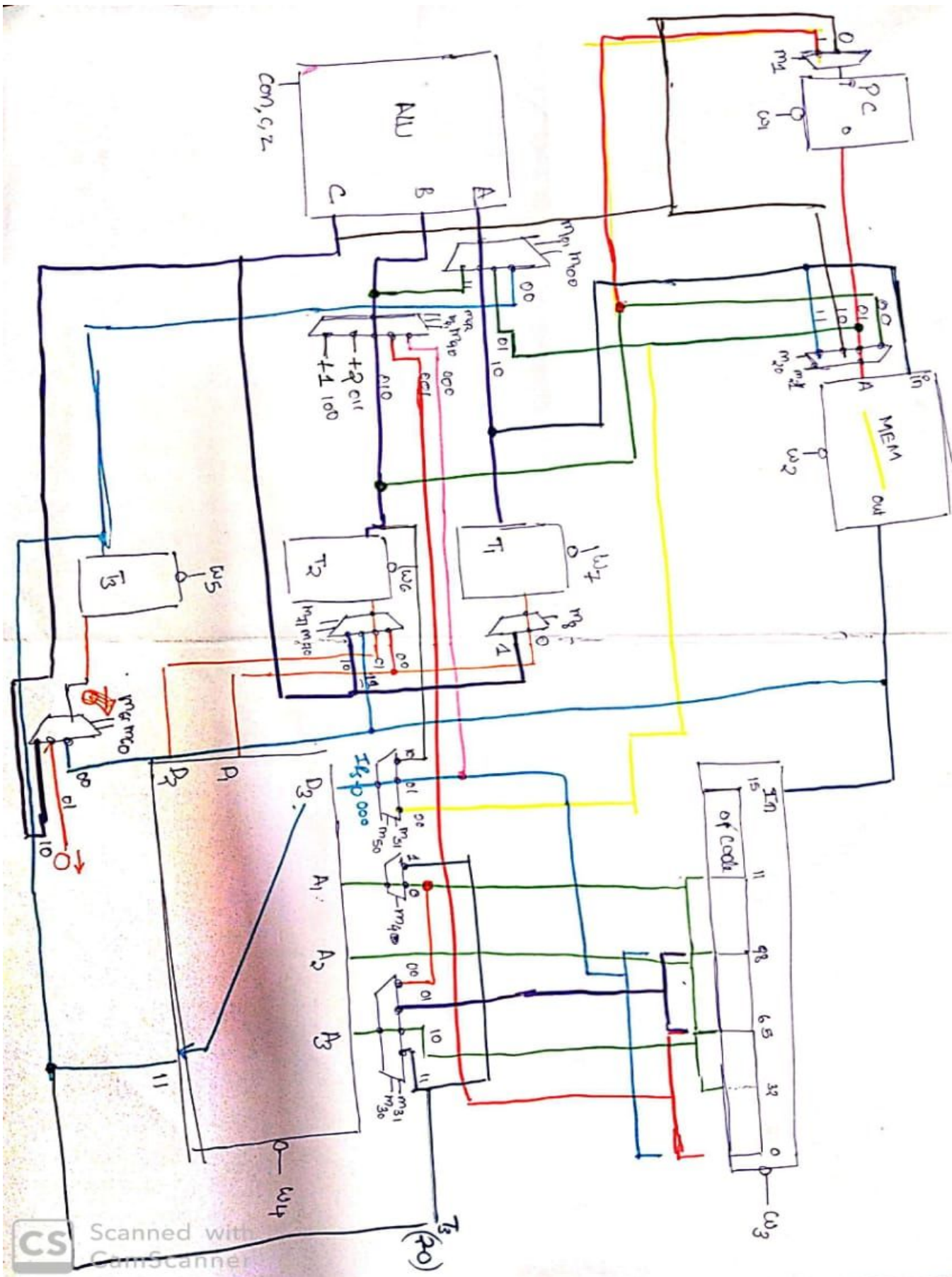
$sb_{14} - [op = 1000] (RF_{17} \text{ xor } RF_{16}) \text{ or } 11$

$sb_{15} - [op = 1000 \text{ or } 1001]$

$sb_{16} - [op = 1000]$

$sb_{17} - [op = 1001]$

Circuit Diagram



Control Pin Assignment

	W1	W2	W3	W4	W5	W6	W7	M90	M91	M92	M100	M101		
								M92	M91	M90	M101	M100	C	Z
S0	1	1	0	1	1	1	1	X	X	X	X	X		
S1	1	1	1	1	0	0	0	X	X	X	X	X		
S2	1	1	1	1	0	1	1	0	1	0	1	0		
S3	1	1	1	0	1	1	1	X	X	X	X	X	0	0
S4	0	1	1	1	1	1	1	0	1	1	0	1		
S5	1	1	1	1	0	1	1	0	0	1	1	0	0	0
S6	1	1	1	0	1	1	1	X	X	X	X	X		
S7	1	1	1	1	1	0	1	X	X	X	X	X		
S8	1	1	1	1	0	1	1	0	1	1	1	1		
S9	1	0	1	1	1	1	1	X	X	X	X	X		
S10	1	1	1	0	1	1	1	X	X	X	X	X		
S11	1	1	1	1	1	0	1	0	1	1	1	0		
S12	1	1	1	0	0	1	1	1	0	0	0	0		
S13	1	1	1	1	0	0	1	1	0	0	0	0		
S14	1	1	1	1	1	0	0	0	1	1	1	0		
S15	0	1	1	1	1	1	1	0	0	0	0	1		
S16	1	1	1	0	1	0	1	X	X	X	X	X		
S17	1	1	1	1	1	1	1	X	X	X	X	X		

	M1	M20	M21	M30	M31	M4	M50	M51	M60	M61	M70	M71	M8
S0	X	1	0	X	X	X	X	X	X	X	X	X	X
S1	X	X	X	X	X	0	X	X	X	X	X	X	X
S2	X	X	X	X	X	X	X	X	1	0	1	0	0
S3	X	X	X	0	1	X	X	X	0	1	X	X	X
S4	X	X	X	X	X	X	X	X	0	1	X	X	X
S5	X	X	X	1	0	X	1	1	X	X	X	X	X
S6	X	X	X	0	0	X	1	0	X	X	X	X	X
S7	X	X	X	X	X	X	X	X	X	X	0	1	X
S8	X	0	0	X	X	X	X	X	0	0	X	X	X
S9	X	0	0	X	X	X	X	X	X	X	X	X	X
S10	X	X	X	0	0	X	1	1	X	X	X	X	X
S11	X	0	1	X	X	X	X	X	X	X	1	1	X
S12	X	X	X	1	1	X	0	1	0	1	X	X	X
S13	X	X	X	X	X	1	X	X	0	1	0	0	X
S14	X	1	1	X	X	X	X	X	X	X	1	1	1
S15	0	X	X	X	X	X	X	X	X	X	X	X	X
S16	X	X	X	0	0	X	0	0	X	X	1	0	X
S18	1	X	X	X	X	X	X	X	X	X	X	X	X