① 1A3 CP2 7A1 ECC 2^{11}

1A3

0001 | 1010 0011

- SEGNO: 0, 1 bit
- ESPO: 7 → 0111, 4 bit → 2^{m-1} → 5 bit
- MANT: 8 bit

X:Y:Z
1:5:8

7A1

7 A 1
0111 1010 0001
1000 0101 1111

- SEGNO: 1, 1 bit
- ESPO: 5, 5 bit
- MANT: 6 bit

④ $E_A = 2^0 + 2^1 = 3$

⑤ CISC 10 STATI PIPELINE
CLOCK 2 GHz
MULTITHREADING

T = 1000/2000 = 0,5 msec
1000/T = 2000 MIPS

⑥

TEXEC 5 istr 4 istr
$m \times T = 0{,}5 \times 10 = 5$ msec
TEXEC = 5·2 + 0,5·7

⑦ 1000/T = 2000 MIPS

⑪

A	B	C	Y
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	1

(NOT(A) AND NOT(B) AND C) OR (A AND B AND NOT(C)) OR (A AND B AND C)
=
$(\overline{A} \cdot \overline{B} \cdot C) + (A \cdot B \cdot \overline{C}) + (A \cdot B \cdot C)$

⑬ XOR

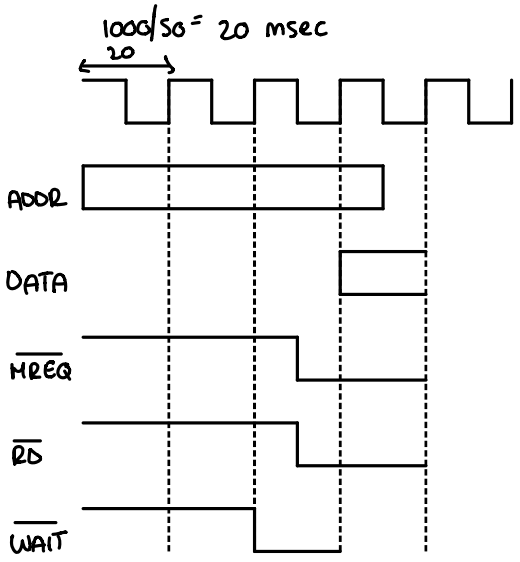
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

X_1	X_2	U1
0	0	0
0	1	1
1	0	1
1	1	0

X_0	U_1	U_2
0	0	0
0	1	1
1	1	0
1	0	1

TESTA SE C'È UN SOLO 1

⑭ BUS SINCRONO 50 MHz LINEE SEPARATE
TRISP 60 msec INDIR STABILI



⑭ 40 msec

⑮ 70 msec

⑯ 80 msec

⑰ FALSO

---

① 1A3 CP2 7A1 ECC 2"

1 A 3
0001 1010 0011

7A1
0111 1010 0001 −
1000 0000 0000 =
1111 1010 0001

0000 0101 1110 +1 = 0000 0101 1111

0 0001 1010 0011

- 1 bit SEGNO 2^{m-1}
- $8 = 2^3 = 1000 = 4$ bit + 1 = 5 bit espo
- 8 bit mantissa

- 1 bit x SEGNO
- 6 = 0110 → 5 bit x SEGNO
- 6 bit mantissa

② A in ALFA

1 A 3
0 0011 1010 0011

- SEGNO: 0
- ESPO
  8 = 01000
- MANT: 1010 0011

③ B in ALFA

1111 1010 0001

- 1 bit x SEGNO
- 10 = 0110 = 00110
- 11101000

④ $E_A = 2^0 + 2^1 = 3$

PIPELINE 10 STADI $\mu = 2$ GHz

⑤ T = 1000/2000 = 0,5 msec F(MIPS) = 2000 MIPS

⑥ TEXEC 5 istr e 4 istr m*T = 5 msec

TEXEC = 5+0,5·8 = 9 msec

⑦ F(MIPS) com 5 stadi

2000 MIPS

⑧ FALSO

⑨ C

⑩ LRU → C

⑪

A	B	C	Y
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	1

(NOT A AND NOT B AND C) OR (A AND B AND NOT C) OR (A AND B AND C)

⑫ (NOT A AND B AND NOT C) = 0
0 1 0

- (NOT A AND NOT B AND C) OR (A AND B) | B
0 0 1 1 1
0 1 1

⑬

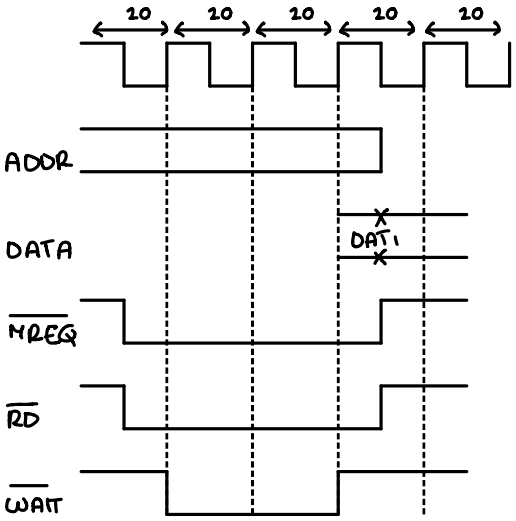
X2	X1	X0	U1: X_2 XOR X_1	U2: U_1 XOR X_1
0	0	0	0	0
0	0	1	0	1
0	1	0	1	1
0	1	1	1	0
1	0	0	1	1
1	0	1	1	0
1	1	0	0	0
1	1	1	0	1

Ⓒ

A	B	C	$\bar{A}$	$\bar{B}$	$\bar{C}$	U1: ($\bar{A}$ AND $\bar{B}$)	U2: U1 AND C	U3: A AND B	U2 OR U3
0	0	0	1	1	1	1	0	0	0
0	0	1	1	1	0	1	1	0	1
0	1	0	1	0	1	0	0	0	0
0	1	1	1	0	0	0	0	0	0
1	0	0	0	1	1	0	0	0	0
1	0	1	0	1	0	0	0	0	0
1	1	0	0	0	1	0	0	1	1
1	1	1	0	0	0	0	0	1	1

(16) BUS SINCRONO 50 MHz T RISP 60 msec da IND STABILI

1000/50 = 20 msec



DATA { da lettura inizia sempre sul fronte di discesa successivo

MREQ e RD partono sul fronte di

(14) 60 msec

(15) 70 msec

(16) 80 msec

(17) FALSO