

PAL EQUATIONS – IC3

```

/RAMCS = A6 * A5 * /IORQ * M1
        + A4 * A3 * A2 * A1 * A0 * /IORQ * M1

/KEYIO = /A7 * A6 * A5 * A4 * A3 * A2 * A1 * /A0 * /IORQ * M1 * RD
        + A7 * A6 * A5 * A4 * A3 * A2 * A1 * /A0 * /IORQ * M1 * /RD

/NMIWR = A7 * A6 * A5 * A4 * A3 * A2 * A1 * A0 * /IORQ * M1 * RD

/NMI = /NMISEL * /DEL
      + NMISEL * /IMM
  
```

PAL EQUATIONS – IC4

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/RA0 = /KEYIO * A15 * /A14
      + /KEYIO * A15 * A13 * /A12
      + /KEYIO * A15 * A13 * A11 * /A10
      + /KEYIO * A15 * A13 * A11 * A9 * /A8

/RA1 = /KEYIO * A15 * A14 * /A13
      + /KEYIO * A15 * A14 * /A12
      + /KEYIO * A15 * A14 * A11 * A10 * /A9
      + /KEYIO * A15 * A14 * A11 * A10 * /A8

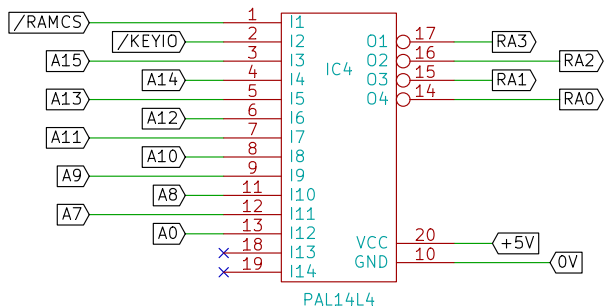
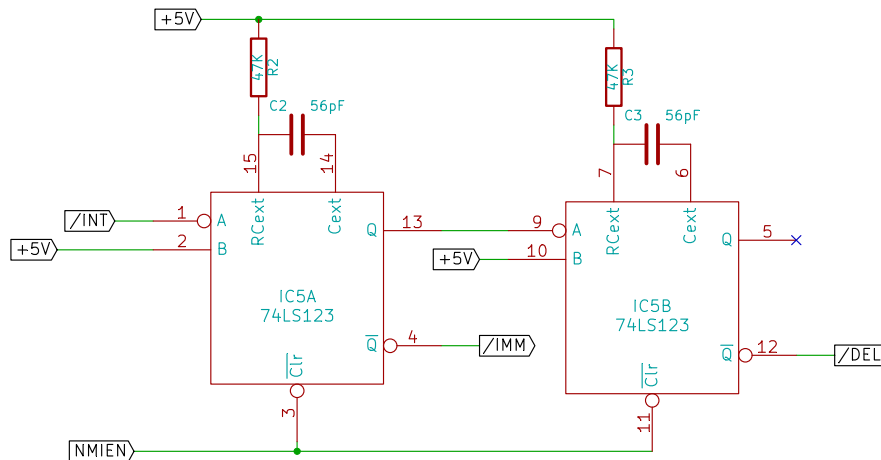
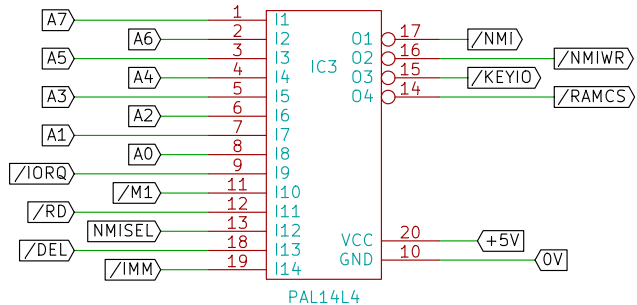
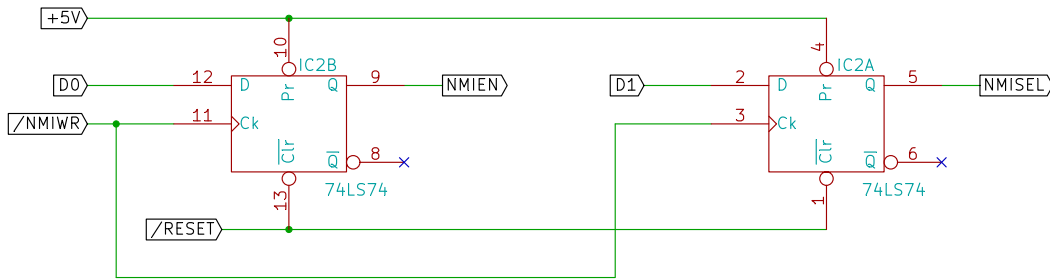
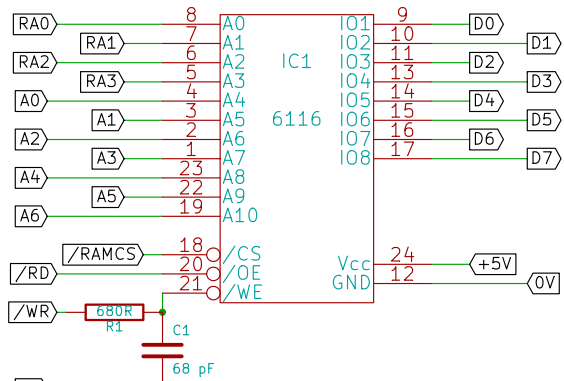
/RA2 = /KEYIO * A15 * A14 * A13 * A12 * /A11
      + /KEYIO * A15 * A14 * A13 * A12 * /A10
      + /KEYIO * A15 * A14 * A13 * A12 * /A9
      + /KEYIO * A15 * A14 * A13 * A12 * /A8

/RA3 = /KEYIO
      + /A7 * A0
  
```

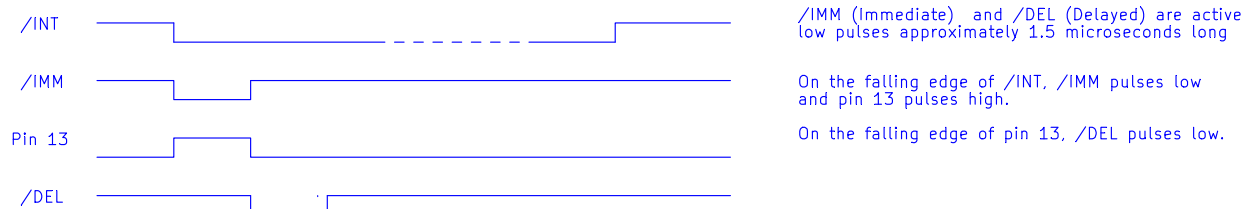
BILL OF MATERIALS

IC1	HM6116P
IC2	74LS74
IC3	PAL14L4
IC4	PAL14L4
IC5	74LS123
C1	68 pF
C2	56 pF
C3	56 pF
R1	680R
R2	47K
R3	47K
J0	MTX500/512 EDGE CONNECTOR

Designed by : Tony Brewer	Sheet: Speculator
Drawn by : Dave Stevenson	
File: Speculator1.sch	File: Speculator.sch
Sheet: /	
Title: Memotech Speculator – Components	
Size: A4	Date: 5 jul 2013
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)–stable	Rev: 1
	Id: 1/2



IC4 PAL14L4 could be replaced by 74LS148



Designed by : Tony Brewer
 Drawn by : Dave Stevenson

File: Speculator.sch
 Sheet: /Speculator/

Title: Memotech Speculator - Schematic

Size: A4	Date: 5 jul 2013	Rev: 1
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 2/2