Sheet: OnBoard Memory

File: SRAM-ROM.sch

Sheet: DSACK and BERR

File: DSACK-BERR.sch

Sheet: CPU CPLD

File: CPU-CPLD.sch

Sheet: Address Decode and STERM

File: ADEC-STERM.sch

Sheet: Input-Output

File: IO.sch

Sheet: VME Bus

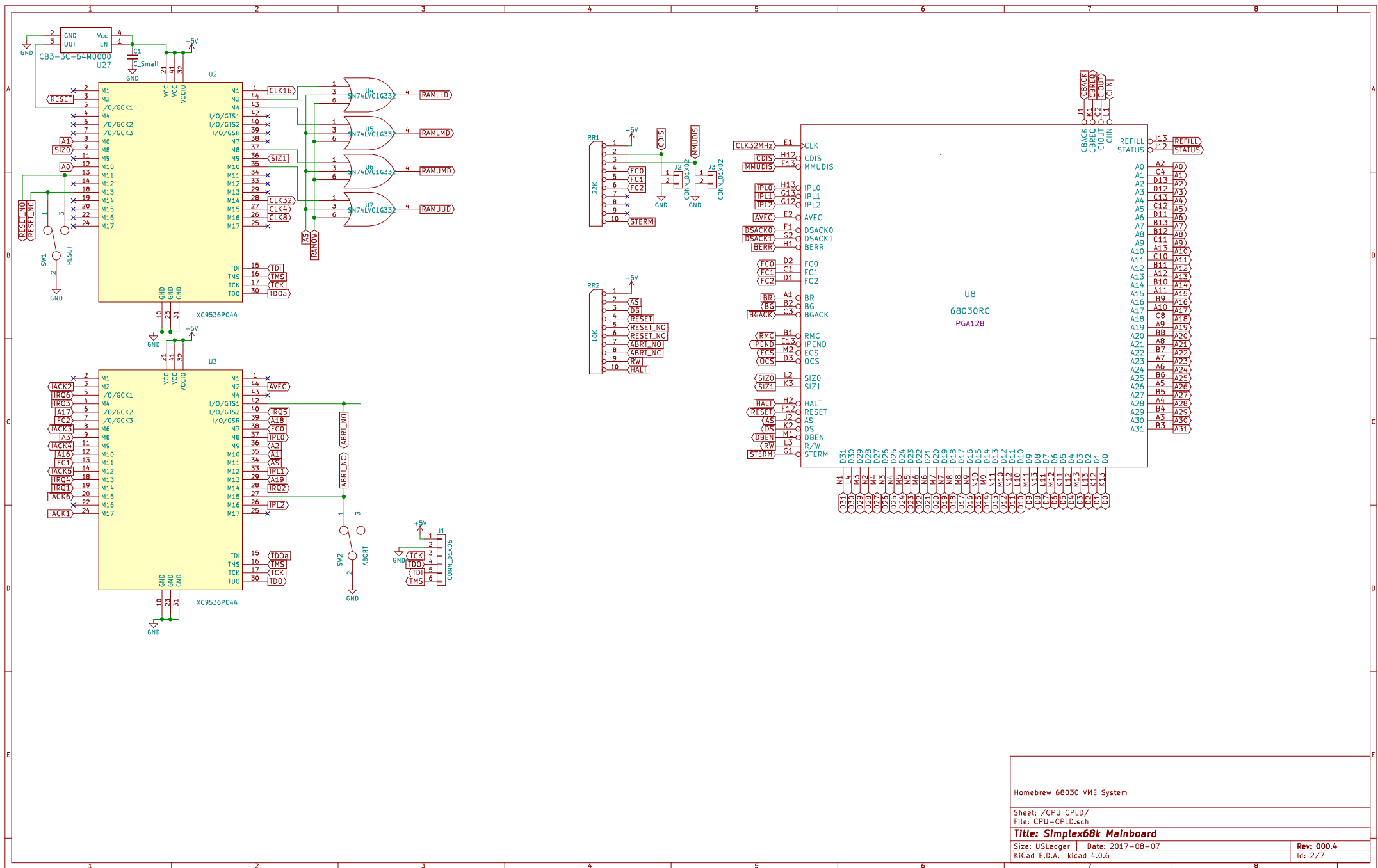File: VME.sch

Homebrew 68030 VME System

Sheet: /
File: simplex68k.sch

Title: Simplex68k Mainboard

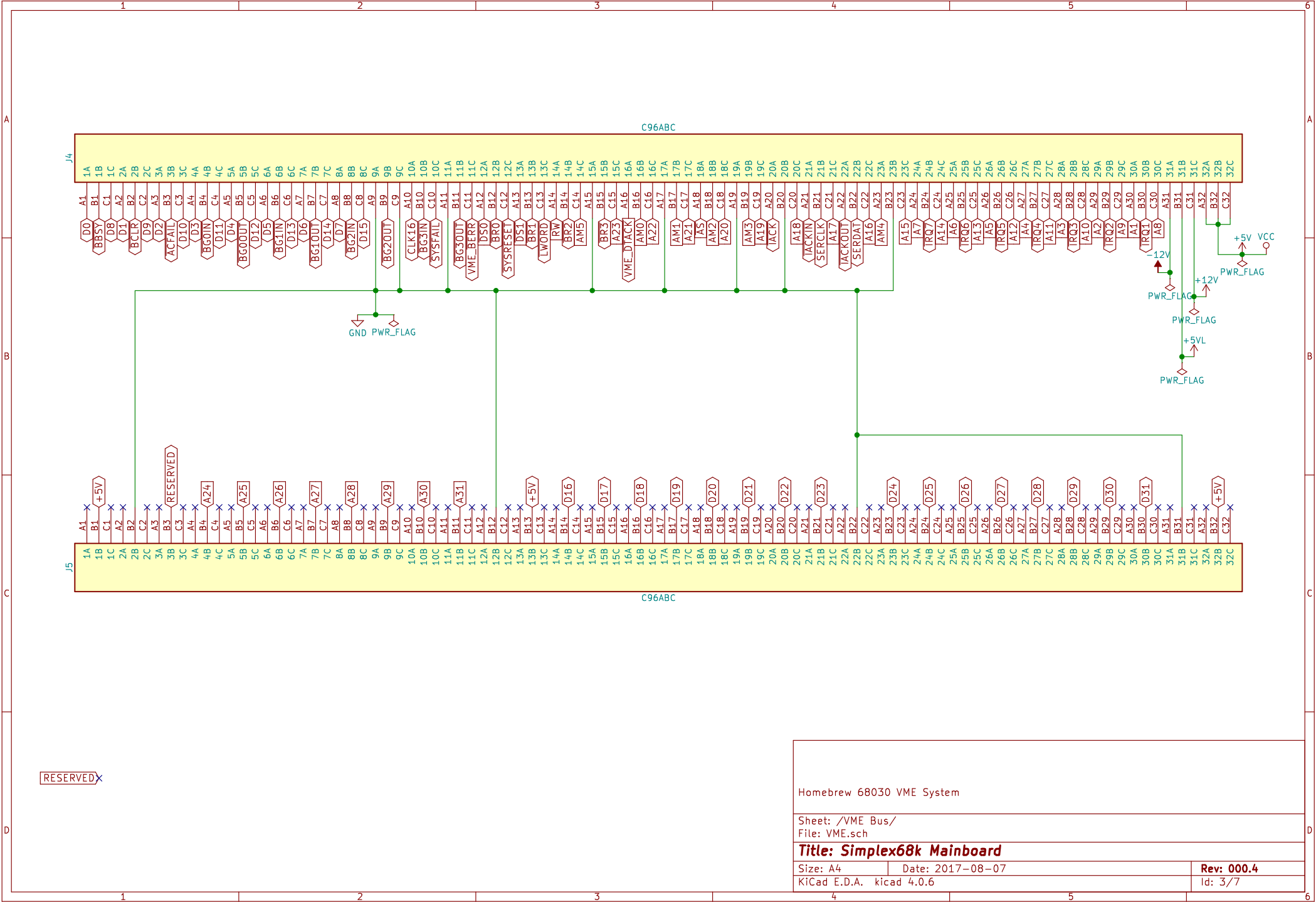| Size: A4 | Date: 2017-08-09 | Rev: 000.4 |
| KiCad E.D.A. kicad 4.0.6 | | Id: 1/7 |

Homebrew 68030 VME System

Sheet: /CPU CPLD/
File: CPU-CPLD.sch

Title: Simplex68k Mainboard

| Size: USLedger | Date: 2017-08-07 | | Rev: 000.4 |
| KiCad E.D.A. kicad 4.0.6 | | | Id: 2/7 |

C96ABC

J4

C96ABC

J5

RESERVED

GND PWR_FLAG

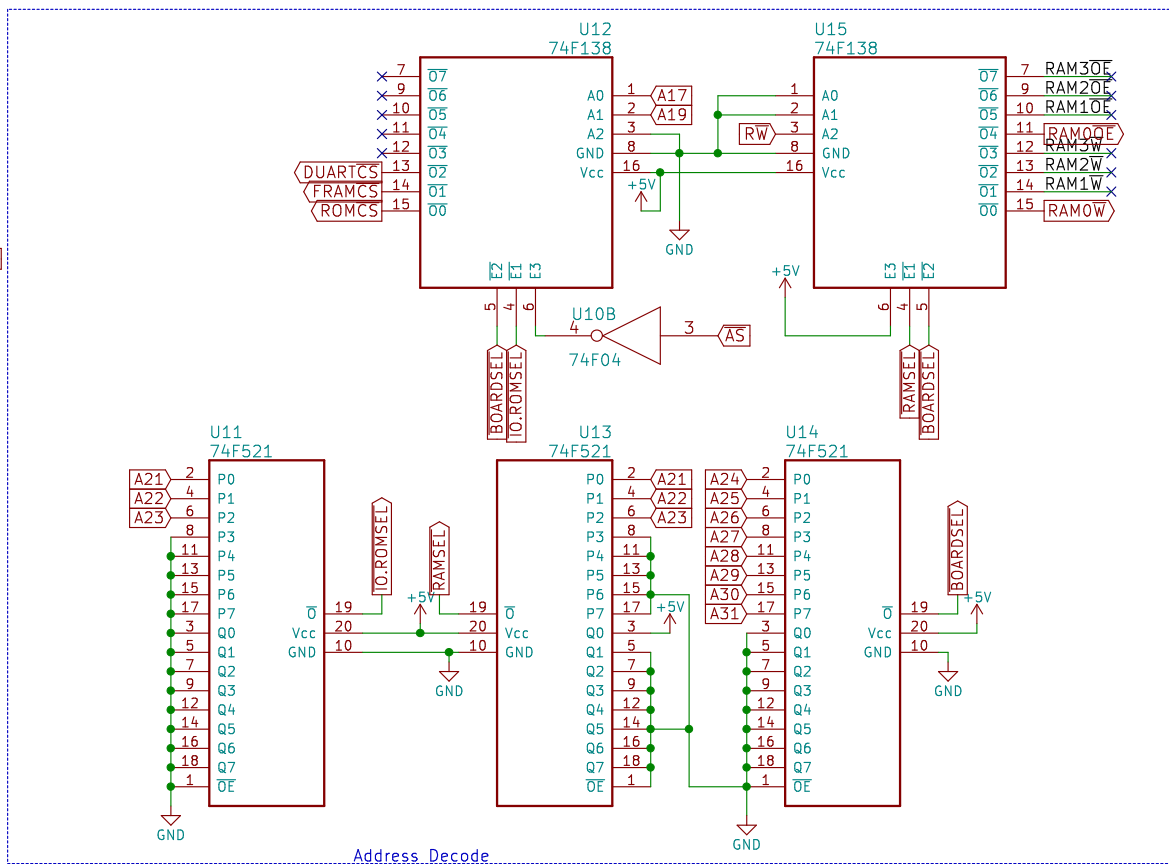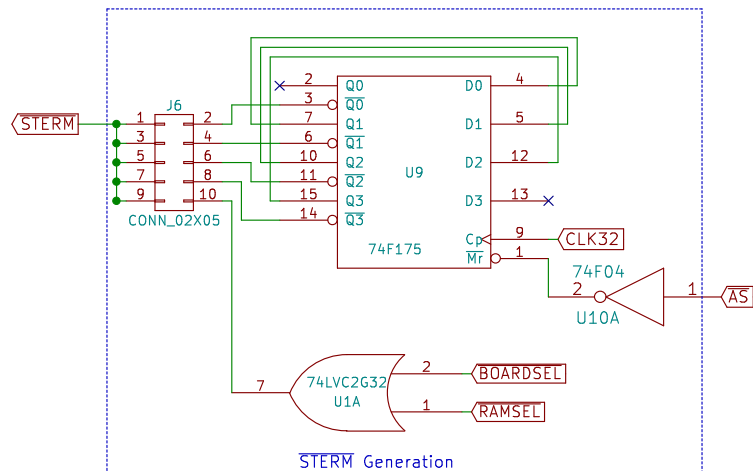PWR_FLAG

−12V

PWR_FLAG

+12V

PWR_FLAG

+5V VCC

PWR_FLAG

+5VL

PWR_FLAG

Homebrew 68030 VME System

Sheet: /VME Bus/
File: VME.sch

Title: Simplex68k Mainboard

| Size: A4 | Date: 2017−08−07 | **Rev: 000.4** |
| KiCad E.D.A. kicad 4.0.6 | | Id: 3/7 |

Address Decode and STERM — Schematic

STERM Generation (U9 74F175, J6 CONN_02X05)

- STERM
- J6 CONN_02X05
- U9 74F175
  - Q0, Q̄0, Q1, Q̄1, Q2, Q̄2, Q3, Q̄3
  - D0, D1, D2, D3
  - Cp, Mr
  - CLK32
- U10A 74F04 → AS
- U1A 74LVC2G32 → BOARDSEL, RAMSEL
- STERM Generation

Address Decode

U12 74F138
- O7, O6, O5, O4, O3, O2, O1, O0
- A0 (A17), A1 (A19), A2, GND, Vcc
- DUARTCS, FRAMCS, ROMCS
- RW
- E2, E1, E3
- BOARDSEL, IO.ROMSEL
- +5V, GND

U15 74F138
- O7 RAM3OE, O6 RAM2OE, O5 RAM1OE, O4 RAM0OE, O3 RAM3W, O2 RAM2W, O1 RAM1W, O0 RAM0W
- A0, A1, A2, GND, Vcc
- E3, E1, E2
- RAMSEL, BOARDSEL
- +5V

U10B 74F04 → AS

U11 74F521
- A21, A22, A23
- P0, P1, P2, P3, P4, P5, P6, P7
- Q0, Q1, Q2, Q3, Q4, Q5, Q6, Q7
- Ō, Vcc, GND, ŌE
- IO.ROMSEL
- +5V, GND

U13 74F521
- P0, P1, P2, P3, P4, P5, P6, P7
- A21, A22, A23
- Q0, Q1, Q2, Q3, Q4, Q5, Q6, Q7
- Ō, Vcc, GND, ŌE
- RAMSEL
- +5V, GND

U14 74F521
- A24, A25, A26, A27, A28, A29, A30, A31
- P0, P1, P2, P3, P4, P5, P6, P7
- Q0, Q1, Q2, Q3, Q4, Q5, Q6, Q7
- Ō, Vcc, GND, ŌE
- BOARDSEL
- +5V, GND

Title block

Homebrew 68030 VME System

Sheet: /Address Decode and STERM/
File: ADEC—STERM.sch

Title: Simplex68k Mainboard

Size: A4	Date:	Rev: 000.4
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DSACK1 8
74F11
U16C
11
10 3
9
+5V
+5V

74LVC2G32
U18B
6
5 ROMCS
+5V

DSACK0 12
74F11
U16A
13 VME_DTACK
DUARTDTACK
2
1 4
+5V

SN74LVC1G332
U29
6
3 FRAMCS
1 +5V

74F04
U10C
6
5

BERR 6
74F11
U16B
5
4
3 VME_BERR
+5V

74F04
U10D
8
9

U17
74LS93
12 Q0   CP0 14
9   Q1   CP1..3 1
8   Q2
11 Q3   R0(1) 2
          R0(2) 3

7

74F04
U10E
10
11 CLK4

74LVC2G32
U18A
2 AS
1

74F04
U10F
12 13 STERM
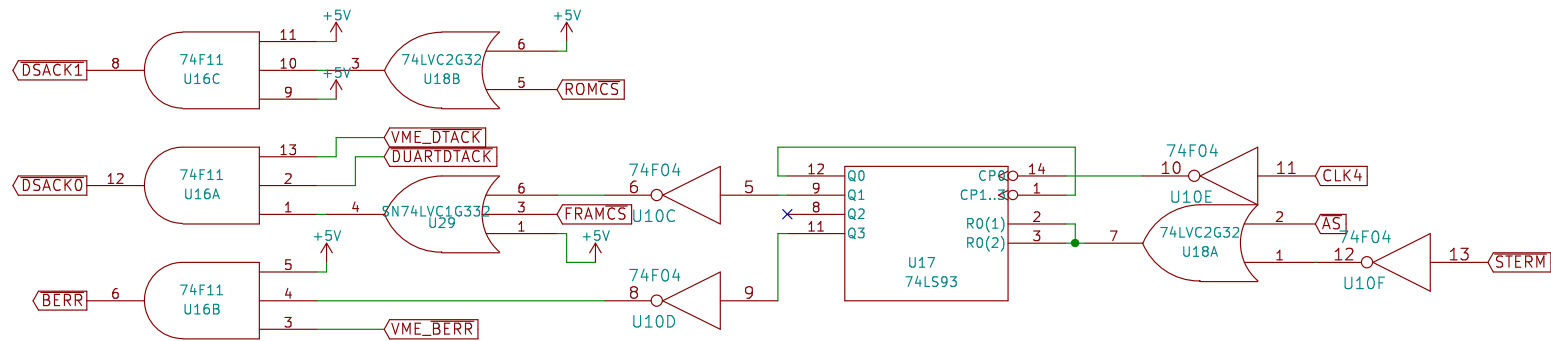
Homebrew 68030 VME System

Sheet: /DSACK and BERR/
File: DSACK-BERR.sch

Title: Simplex68k Mainboard

Size: A4   Date: Rev: 000.4
KiCad E.D.A. kicad 4.0.6   Id: 5/7

U23
CY7C1049GN30-10VXI

U25
CY7C1049GN30-10VXI

U24
CY7C1049GN30-10VXI

U26
CY7C1049GN30-10VXI

2MB 10ns SRAM

U28
FM18W08

Ferro-Magnetic
Configuration RAM

U20
27C4096

BIOS ROM

U22
74F244

U19
74F244

U21
74F244

Address Buffers for non-SRAM components

Homebrew 68030 VME System

Sheet: /OnBoard Memory/
File: SRAM-ROM.sch

Title: Simplex68k Mainboard

Size: A4   Date:

Rev: 000.4

KiCad E.D.A. kicad 4.0.6

Id: 6/7

J7 DB9_FEMALE

U31 MAX232 / RS232 / LOGIC
R2IN 8, R1IN 13, T2OUT 7, T1OUT 14, VS- 6, VS+ 2, C2- 5, C2+ 4, GND 15, VCC 16 +5V
R2OUT 9, R1OUT 12, T2IN 10, T1IN 11, C1- 3, C1+ 1

U32 MAX232 / RS232 / LOGIC
R2OUT 9, R1OUT 12, T2IN 10, T1IN 11, C1- 3, C1+ 1, GND 15, VCC 16 +5V
R2IN 8, R1IN 13, T2OUT 7, T1OUT 14, VS- 6, VS+ 2, C2- 5, C2+ 4

C2 15pF, C3 15pF, Y1 3.684M, C4 22uF, C5 22uF, C6 22uF, C7 22uF, C8 CP1_Small, C9 CP1_Small, C10 CP1_Small, C11 CP1_Small
GND

U30 68681
- X1/CLK 32
- X2 33
- D0 25 D24
- D1 16 D25
- D2 24 D26
- D3 17 D27
- D4 23 D28
- D5 18 D29
- D6 22 D30
- D7 19 D31
- RS1 1 A0B
- RS2 3 A1B
- RS3 5 A2B
- RS4 6 A3B
- CS 35 DUARTCS
- R/W 8 RW
- IACK 37 IACK4
- RESET 34 RESET
- DTACK 9 DUARTDTACK
- IRQ 21 IRQ4
- TXDA 30
- RXDA 31
- TXDB 11
- RXDB 10
- OP0 29
- OP1 12
- OP2 28
- OP3 13
- OP4 27
- OP5 14
- OP6 26
- OP7 15
- IP0 7
- IP1 4
- IP2 36
- IP3 2
- IP4 39
- IP5 38

J8 DB9_FEMALE
GND

Homebrew 68030 VME System

Sheet: /Input-Output/
File: IO.sch

Title: Simplex68k Mainboard

Size: A4 | Date: | Rev: 000.4
KiCad E.D.A. kicad 4.0.6 | Id: 7/7