BUS1
RC2014 LARGE BOARD

A15
A14
A13
A12
A11
A10
A9
A8
A7 — A7
A6 — A6
A5 — A5
A4 — A4
A3 — A3
A2 — A2
A1 — A1
A0 — A0
GND — GND — GND
VCC — VCC — VCC
RFSH — M1 — M1
RESET2 — RESET — RESET
CLK2 — CLK
BUSACK — INT — INT
HALT — MREQ
BUSRQ — WR — WD
WAIT — RD — RD
NMI — IOREQ — IOREQ
D8 — D0 — D0
D9 — D1 — D1
D10 — D2 — D2
D11 — D3 — D3
D12 — D4 — D4
D13 — D5 — D5
D14 — D6 — D6
D15 — D7 — D7
TX2 — TX
RX2 — RX
USR5 — USR1
USR6 — USR2
USR7 — USR3
USR8 — USR4

WAIT
D1

VCC
R21 R16 R1 R19

C2 22pF   C3 22pF
21.47727MHz
GND

R27 100 — RRAS
R24 100 — RCAS0
R25 100 — RCAS1
R26 100 — RR/!W

U1 V9958
1 GND   XTAL2 64
2 DHCLK   XTAL1 63
3 DLCLK   RAS   62
4 VRESET   CAS0   61
5 HSYNC   CAS1   60
6 CSYNC   CASX   59
7 BLEO   VDD   58
8 CPUCLK/VDS   R/!W   57
9 RESET   AD7   56 AD7
10 YS   AD6   55 AD6
11 CBDR   AD5   54 AD5
12 C7   AD4   53 AD4
13 C6   AD3   52 AD3
14 C5   AD2   51 AD2
15 C4   AD1   50 AD1
16 C3   AD0   49 AD0
17 C2   RD7   48 RD7
18 C1   RD6   47 RD6
19 C0   RD5   46 RD5
20 GND/DAC   RD4   45 RD4
21 VDD/DAC   RD3   44 RD3
22 GREEN   RD2   43 RD2
23 RED   RD1   42 RD1
24 BLUE   RD0   41 RD0
25 INT   CD0   40 D0
26 WAIT   CD1   39 D1
27 HRESET   CD2   38 D2
28 MODE1   CD3   37 D3
29 MODE0   CD4   36 D4
30 CSW   CD5   35 D5
31 CSR   CD6   34 D6
32 CD7   VBB   33

DHCLK
DLCLK
VRESET
BLEO
CSYNC
RESET
GREEN — R
RED — B
BLUE
INT
WAIT_LPS
HRESET_LPD
A1
A0
CSW
CSR
D7
GND
VCC2
C1 0.1uF

U3 41464C
1 !OE   GND   18 GND
2 IO1   IO4   17 RD3
3 IO2   !CAS 16 RCAS0
4 !WE   IO3   15 RD2
5 !RAS   A0   14 AD0
6 A6   A1   13 AD1
7 A5   A2   12 AD2
8 A4   A3   11 AD3
9 VCC   A7   10 AD7
GND — RD0
RD1
RR/!W
RRAS
AD6
AD5
AD4
VCC

U4 41464C
1 !OE   GND   18 GND
2 IO1   IO4   17 RCAS0
3 IO2   !CAS 16 RD6
4 !WE   IO3   15 RD0
5 !RAS   A0   14 AD1
6 A6   A1   13 AD2
7 A5   A2   12 AD3
8 A4   A3   11 AD7
9 VCC   A7   10
GND — RD4
RD5
RR/!W
RRAS
AD6
AD5
AD4
VCC

U5 41464C
1 !OE   GND   18 GND
2 IO1   IO4   17 RD3
3 IO2   !CAS 16 RCAS1
4 !WE   IO3   15 RD2
5 !RAS   A0   14 AD0
6 A6   A1   13 AD1
7 A5   A2   12 AD2
8 A4   A3   11 AD3
9 VCC   A7   10 AD7
GND — RD0
RD1
RR/!W
RRAS
AD6
AD5
AD4
VCC

U6 41464C
1 !OE   GND   18 GND
2 IO1   IO4   17 RD7
3 IO2   !CAS 16 RCAS1
4 !WE   IO3   15 RD6
5 !RAS   A0   14 AD0
6 A6   A1   13 AD1
7 A5   A2   12 AD2
8 A4   A3   11 AD3
9 VCC   A7   10 AD7
GND — RD4
RD5
RR/!W
RRAS
AD6
AD5
AD4
VCC

VCC
R18 10K   J1 HDR-M-2.54_1x3
WAIT_LPS 1
WAIT   2
          3
J1:
1-2: V9938
2-3: V9958

J2 HDR-M-2.54_1x3
1   VCC_VIDEO — R15 470
2
3   VCC2
J2:
1-2: V9938
2-3: V9958

VCC
C6 0.1uF   C10 0.1uF   C13 0.1uF   C17 0.1uF   C16 0.1uF

VCC
L1 5.6uH   VCC2
C18 10uF   C19 0.1uF   C14 0.1uF

HRESET_LPD   R17 10K   VCC

TITLE:
RC2014-MSX-VDP-RGB-MAIN
REV: 3.3
Company: Dino Boards
Date:
Drawn By: dean.netherton
Sheet: 1/3

EasyEDA

VCC2

R4 27K   R12 100

C7 220uF

C5 10uF

RED

R2 1K   R3 12K

Q2 2N3906

VCC2

R6 27K   R5 100

C8 220uF

C9 10uF

GREEN

R9 1K   R7 12K

2N3906 Q1

VCC2

R13 27K   R14 100

C11 220uF

C12 10uF

BLUE

R10 1K   R11 12K

2N3906 Q3

CSYNC

R8 1K

C4 47pF

DSUB1
RGB-OUT

J3
HDR-M-2.54_1x3

J3:
1-2: V9938
2-3: V9958

R23 4K7

VCC2

R22 1K

Q4 2N3904

C15 220uF

R28 100

VID_OUT
RCJ-041

VCC_VIDEO

U2
ATF16V8

Pin connections:
- A7 — 1 CLKIN
- A6 — 2 IN1
- A5 — 3 IN2
- A4 — 4 IN3
- A3 — 5 IN4
- A2 — 6 IN5
- M1 — 7 IN6
- RD — 8 IN7
- WD — 9 IN8
- IOREQ — 11 IN9OE
- 10 GND

VCC — 20 VCC

- IO 19
- IO 18
- IO 17
- IO 16 — CSR
- IO 15 — CSW
- IO 14
- IO 13
- IO 12

A2-LOW
A3-HIGH
A4-HIGH
A5-LOW
A6-LOW
A7-HIGH
IOREQ-LOW

$98->9B

PLD Code

```
Name      v9958-cs ;
PartNo    00 ;
Date      15/12/2020 ;
Revision 01 ;
Designer Dean Netherton ;
Company  Dino ;
Assembly None ;
Location Ignored ;
Device   g16v8a ;


/************* INPUT PINS ********************/
PIN  1 = A7;
PIN  2 = A6;
PIN  3 = A5;
PIN  4 = A4;
PIN  5 = A3;
PIN  6 = A2;
PIN  7 = !M1;
PIN  8 = !RD;
PIN  9 = !WR;
PIN 10 = GND;
PIN 11 = !IORQ;

/*************** OUTPUT PINS *******************/
//PIN 12 = NC;
//PIN 13 = NC;
//PIN 14 = NC;
PIN 15 = !CSW;
PIN 16 = !CSR;
//PIN 17 = NC;
//PIN 18 = NC;
//PIN 19 = NC;
PIN 20 = VCC;

ADDR = A7 & !A6 & !A5 & A4 & A3 & !A2;   // $98 TO $9B
CS = ADDR & IORQ & !M1;

CSW = CS & WR;
CSR = CS & RD;
```