J1
Bus_ISA_8bit

Pin	Left Signal		Pin	Right Signal	Net
1	GND	GNDD	32	IO	
2	RESET		33	DB7	D7_ISA
3	VCC	VCC	34	DB6	D6_ISA
4	INQ2		35	DB5	D5_ISA
5	−5V		36	DB4	D4_ISA
6	DRQ2		37	DB3	D3_ISA
7	−12V		38	DB2	D2_ISA
8	UNUSED		39	DB1	D1_ISA
9	+12V	+12V	40	DB0	D0_ISA
10	GND	GNDD	41	IO_READY	
11	SMEMW		42	AEN	
12	SMEMR	MEMR_ISA	43	BA19	
13	IOW		44	BA18	
14	IOR		45	BA17	
15	DACK3		46	BA16	
16	DRQ3		47	BA15	A15_ISA
17	DACK1		48	BA14	A14_ISA
18	DRQ1		49	BA13	A13_ISA
19	DACK0		50	BA12	A12_ISA
20	CLK		51	BA11	A11_ISA
21	IRQ7		52	BA10	A10_ISA
22	IRQ6		53	BA09	A9_ISA
23	IRQ5		54	BA08	A8_ISA
24	IRQ4		55	BA07	A7_ISA
25	IRQ3		56	BA06	A6_ISA
26	DACK2		57	BA05	A5_ISA
27	TC		58	BA04	A4_ISA
28	ALE		59	BA03	A3_ISA
29	VCC		60	BA02	A2_ISA
30	OSC		61	BA01	A1_ISA
31	GND	GNDD	62	BA00	A0_ISA

VLB_BUS (J3)

74F245 buffers: U42, U41, U40, U39, U35, U36, U37, U38

Capacitors: C152 100n, C151 100n, C130 100n, C136 100n, C101 100n, C174 100n, C117 100n, C102 100n, C155 330

Resistors: R69 10k, R68 10k, R273 330, R274 330, R275 330, R276 330, R71 100, R70 33

Signals: ABEN, DBEN, DBDIR, ADEN, AD0–AD31, A0–A31, D0–D31, BE0, BE1, BE2, BE3, BE0_R, BE1_R, BE2_R, BE3_R, ADS, LRDY, LDEV, RDYRTN, RESET, RESET_R, LCLK, LCLK_R, IRQ9, DBDIR1, DBEN19

S3 Vision964

U24
86C964

R55 & R88 is terminator, place it near 86C964

JP5
IRQ9
IRQ9 — IRQ9_968

C190 10µF 16V C191 10µF 16V C192 10µF 16V C193 10µF 16V

74F14 U27C

VCLK_968

VL Interface selected

VCC
R100 47k
PD0
PD1
R103 47k
GNDD

RAM-Mode
FPM 11
EDO 01

VCC
R104 47k
PD2
R105 47k
GNDD

VCC
R106 47k
PD3
R107 47k
GNDD

ROM access enabled

VCC
R108 47k
PD4
GNDD

Vision 968 enabled

VCC
R110 47k
PD8
GNDD

Testmode (tristate)

normal
VCC
R112 47k
PD9
Test
R113 47k
GNDD

ROM-size

32kb
27C256
VCC
R114 47k
PD10
64kb
27C512
R115 47k
GNDD

DRAM-type

dual CAS
VCC
R116 47k
PD11
dual WE
R117 47k
GNDD

DAC write snooping

enabled
LOCA/SRDY
VCC
R118 47k
PD12
disabled
R119 47k
GNDD

S3 BIOS bit for monitor information

VCC
R120 47k
PD13
R121 47k
GNDD

VCC
R122 47k
PD14
R123 47k
GNDD

VCC
R124 47k
PD15
R125 47k
GNDD

CAS/OE low stretch

VCC
R130 47k
PD16
R131 47k
GNDD

VCC
R132 47k
PD17
R133 47k
GNDD

Memory address depth

VCC
R134 47k
PD18

VCC
R136 47k
PD19

RAS low timing

VCC
R138 47k
PD20
R139 47k
GNDD

VCC
R140 47k
PD21
R141 47k
GNDD

RAS pre-charge timing

VCC
R142 47k
PD22
R143 47k
GNDD

VCC
R144 47k
PD23
R145 47k
GNDD

Power-On Config-Resistor

BANK_0

U17
TMS55160

U16
TMS55160

U15
TMS55160

U14
TMS55160

VCC

GNDD

R160
390

SC0

GNDD

an Ende von Taktleitung setzen!

Common IC pin labels (per device):
VCC, /OE, VSS, SQ0, DQ0, SQ1, DQ1, VCC, SQ2, DQ2, SQ3, DQ3, VSS, SQ4, DQ4, SQ5, DQ5, VCC, SQ6, DQ6, SQ7, DQ7, VSS, /CASL, /WE, /RAS, A8, A7, A6, A5, A4, VCC
SC, /SE, VSS, SQ15, DQ15, SQ14, DQ14, VCC, SQ13, DQ13, SQ12, DQ12, VSS, SQ11, DQ11, SQ10, DQ10, VCC, SQ9, DQ9, SQ8, DQ8, VSS, DSF, NC/GND, /CASU, QSF, A0, A1, A2, A3, VSS

Capacitors: C160 100n, C167 100n, C70 100n, C143 100n, C72 100n, C149 100n, C148 100n, C144 100n, C173 100n, C157 100n, C81 100n, C9 100n

BANK_1

U21 TMS55160
U20 TMS55160
U19 TMS55160
U18 TMS55160

VCC /OE VSS SQ0 DQ15 SQ1 DQ14 VCC SQ2 DQ13 SQ3 DQ12 VSS SQ4 DQ11 SQ5 DQ10 VCC SQ6 DQ9 SQ7 DQ8 VSS /CASL /WE /RAS A8 A7 A6 A5 A4 VCC

SC /SE VSS SQ15 DQ0 SQ14 DQ1 VCC SQ13 DQ2 SQ12 DQ3 VSS SQ11 DQ4 SQ10 DQ5 VCC SQ9 DQ6 SQ8 DQ7 VSS DSF NC/GND /CASU QSF A0 A1 A2 A3 VSS

C360 100n
C372 100n
C373 100n
C349 100n
C357 100n
C343 100n
C348 100n
C381 100n
C344 100n
C309 100n

R360 390

an Ende von Taktleitung setzen!

C180 10µF 16V
C181 10µF 16V
C182 10µF 16V

VCC GNDD

Sheet: /VRAM_BANK1/
File: 968_4.sch
Title:
Size: A4   Date:
KiCad E.D.A. kicad 7.0.8-7.0.8~ubuntu23.04.1
Rev:
Id: 6/8

coil is optional.
place it, if 78L05 is not using

resistor-network on D-CLK & M-CLK,
place it near TVP3026

U6
TVP3026

U11
78L05

P1
VGA-PORT

U27F
74F14

U28A
74F74

U28B
74F74

U28C
74F74

Y1
14,31818 MHz

F1
RUEF090

JP7
SYSBL — BLANK_968
direct_BL
Place short,
if U28 isn't placed.

JP6
OVS — GNDD
OVS_GND
Place short,
if U28 isn't placed.

D5 BAV99 — VSYNC_OUT
D4 BAV99 — HSYNC_OUT
D3 BAV99 — B_OUT
D2 BAV99 — G_OUT
D1 BAV99 — R_OUT

Sheet: /DAC/
File: 968_5.sch

Title:

Size: A4   Date:
KiCad E.D.A. kicad 7.0.8-7.0.8~ubuntu23.04.1

Rev:
Id: 7/8

ROM

27C512
U34

VCC

A0_ISA 10 A0 D0 11 d0
A1_ISA 9 A1 D1 12 d1
A2_ISA 8 A2 D2 13 d2
A3_ISA 7 A3 D3 15 d3
A4_ISA 6 A4 D4 16 d4
A5_ISA 5 A5 D5 17 d5
A6_ISA 4 A6 D6 18 d6
A7_ISA 3 A7 D7 19 d7
A8_ISA 25 A8
A9_ISA 24 A9
A10_ISA 21 A10
A11_ISA 23 A11
A12_ISA 2 A12
A13_ISA 26 A13
A14_ISA 27 A14
A15_ISA 1 A15

27C512 JP1
27C256 JP2
VCC

RMSTRD_968 20 CE
MEMR_ISA 22 OE GND 14
GNDD

U31D
74F125
RMSTRD_968 12 13 11
VCC
R59 820
MEMR_ISA 13

74F245
U57
VCC

d7 2 A0 B0 18 D7_ISA
d6 3 A1 B1 17 D6_ISA
d5 4 A2 B2 16 D5_ISA
d4 5 A3 B3 15 D4_ISA
d3 6 A4 B4 14 D3_ISA
d2 7 A5 B5 13 D2_ISA
d1 8 A6 B6 12 D1_ISA
d0 9 A7 B7 11 D0_ISA

VCC 1 A->B 19 CE GND 10
GNDD

C6 100n
GNDD

VAFC

74F245
U8
VCC

VGA0_968 2 A0 B0 18 VGA0
VGA1_968 3 A1 B1 17 VGA1
VGA2_968 4 A2 B2 16 VGA2
VGA3_968 5 A3 B3 15 VGA3
VGA4_968 6 A4 B4 14 VGA4
VGA5_968 7 A5 B5 13 VGA5
VGA6_968 8 A6 B6 12 VGA6
VGA7_968 9 A7 B7 11 VGA7

R65 10k
I_VID 9 U27D 8 1 A->B 19 CE GND 10
74F14 VCC
GNDD

J9
VESA Features Connector
1 2 VGA0
3 4 VGA1
5 6 VGA2
7 8 VGA3
9 10 VGA4
I_CLK 11 12 VGA5
I_SYNC 13 14 VGA6
I_VID 15 16 VGA7
17 18
19 20
21 22
23 24
25 26
GNDD GNDD

R67 10k VCC
I_CLK
R66 10k VCC
I_SYNC

CLK 3 U30A 74F126 VCLK_968
BLANK 6 U30B 74F126 BLANK_968
HSYNC 8 U30C 74F126 HSYNC_968
VSYNC 11 U30D 74F126 VSYNC_968

I2C & PLL-SEL Interface

74F125
RMSTRD_968 2 U31A 3 I2C_R
RS2_968 1

STWR_968 R40 100
STWR 11 U27F 10 74F14

U32 74F174
VCC
GD0_968 3 D0 Q0 2 PLSLEL0
GD1_968 4 D1 Q1 5
GD5_968 6 D2 Q2 7
GD4_968 11 D3 Q3 10 PLSLEL1
GNDD 13 D4 Q4 12
GNDD 14 D5 Q5 15
_STWR 9 Cp
1 Mr GND 8
VCC GNDD

JP3 &4 is a quad-food-jumper. straigh or cross

JP3
PLSLEL0 1 2 JP4 PLLSEL0
2 1 PLLSEL1
SCL_O
SDA_O

74LS125
GD1_968 8 U33C 9
GNDD 12 U33D 11
GD0_968 6 U33B 5
GNDD 2 U33A 3

R36 10k VCC
ID3_SCL
R35 10k VCC
ID2_SDA

C5 100n
GNDD

74F125
U31B 5 6
GNDD GNDD

74F125
U31C 9 8
GNDD GNDD

74F14
U27A 1 2
GNDD

74F14
U27B 3 4
GNDD

U31E 74F125
VCC 14 GND 7
GNDD

U30E 74F126
VCC 14 GND 7
GNDD

U27G 74F14
VCC 14 GND 7
GNDD

U33E 74LS125
VCC 14 GND 7
GNDD

C1 100n
C2 100n
C3 100n
C4 100n
GNDD