Possible Part Combinations

CPLD(U6)	VCC_INT	Latches (IC1, IC2, IC3, IC4)
EPM570T100	R1=0R VCC_INT DNP	74LVC16373 74LVC16374
EPM240T100	R1=0R VCC_INT DNP	74LVC16373 74LVC16374
5M240ZT100	R1=DNP VCC_INT assembled	74LVC16373 74LVC16374
5M570ZT100	R1=DNP VCC_INT assembled	74LVC16373 74LVC16374

Power

PWR_FLAG +5V-PI-IN
PWR_FLAG GND
PWR_FLAG +5V
PWR_FLAG +5V-PI-REG
PWR_FLAG +1.8V_(VCC_INT)
PWR_FLAG +3.3V_(VCC)
PWR_FLAG 5V-Amiga
PWR_FLAG +5V-PI
PWR_FLAG +5V-68000
PWR_FLAG +5V-CBTD
PWR_FLAG +5V-LDO
PWR_FLAG +3.3V_LATCH
PWR_FLAG +3.3V_CPLD
PWR_FLAG +1.8V_CPLD

68K_ON — PWR_FLAG

LATCHING

H1 MountingHole_Pad FRAME
H2 MountingHole_Pad FRAME
H3 MountingHole_Pad FRAME
H4 MountingHole_Pad FRAME
H5 MountingHole_Pad FRAME
FID1 Fiducial
FID2 Fiducial
FID3 Fiducial
FID4 Fiducial
R12 0R FRAME GND

MC68000 CPU

100uF C30 GND
100uF C24 GND
68K_ON — 1N4148W D4 — PWR_FLAG
U7 Socket for MC68000
VCC (14) VCC (49)
CLK 15
IPL[0..2]: IPL0 25, IPL1 24, IPL2 23
BGACK 12, BG 11, BR 13
FC[0..2]: FC0 28, FC1 27, FC2 26
VMA 19, E 20, VPA 21
BERR 22, DTACK 10, HALT 17, RESET 18
A[0..23]
D[0..15]
AS 6, UDS 7, LDS 8, R/W 9
GND (53) GND (16)

CPU Pins To Amiga

F1 Polyfuse +5V
5V-Amiga
J2 Pins to Amiga PCB
VCC (14) VCC (49)
CLK 15
IPL[0..2]: IPL0 25, IPL1 24, IPL2 23
BGACK 12, BG 11, BR 13
FC[0..2]: FC0 28, FC1 27, FC2 26
VMA 19, E 20, VPA 21
BERR 22, DTACK 10, HALT-SOC 17, RESET-SOC 18
A[0..23]
D[0..15]
AS 6, UDS 7, LDS 8, R/W 9
GND (53) GND (16)

IC1

SN74LVC16374DGGR
1CLK-IC1 48, D0 47, D1 46, GND 45, D2 44, D3 43, +3.3V_LATCH 42, D4 41, D5 40, GND 39, D6 38, D7 37, D8 36, D9 35, GND 34, D10 33, D11 32, +3.3V_LATCH 31, D12 30, D13 29, GND 28, D14 27, D15 26, 2CLK-IC1 25
1OE 1, 1OE-IC1
1Q1 2, 1Q2 3, GND_1 4 GND, 1Q3 5, 1Q4 6, VCC_1 7 +3.3V_LATCH, 1Q5 8, 1Q6 9, GND_2 10 GND, 1Q7 12, 1Q8 13, 2Q1 14, 2Q2 15, GND_3 16 GND, 2Q3 17, 2Q4 18, VCC_2 19 +3.3V_LATCH, 2Q5 20, 2Q6 21, GND_4 22 GND, 2Q7 23, 2Q8 24, 2OE-IC1

IC2

SN74LVC16374DGGR
1OE-IC2 1, 1Q1 2, 1Q2 3, GND 4 GND, 1Q3 5, 1Q4 6, +3.3V_LATCH 7, VCC_1 8, 1Q5 9, 1Q6 10, GND 11 GND, 1Q7 12, 1Q8 13, 2Q1 14, 2Q2 15, GND 16 GND, 2Q3 17, 2Q4 18, +3.3V_LATCH 19, VCC_2 20, 2Q5 21, GND 22 GND, 2Q6 23, 2Q7 24, 2Q8 25, 2OE-IC2 26
1CLK 48, 1CLK-IC2
GND_8 45 GND, GND_7 39 GND, GND_6 34 GND, GND_5 28 GND, GND_4 21 GND, GND_3 15 GND, GND_2 10 GND, GND_1 4 GND
VCC_4 42 +3.3V_LATCH, VCC_3 31 +3.3V_LATCH, VCC_2 18 +3.3V_LATCH, VCC_1 7 +3.3V_LATCH

IC3

SN74LVC16374DGGR
1CLK-IC3 48, GND 45, +3.3V_LATCH 42, GND 39, GND 34, +3.3V_LATCH 31, GND 28, 2CLK-IC3 25
1OE-IC3 1, 1Q1 2, A1 3, GND_1 4 GND, A2 5, A3 6, VCC_1 7 +3.3V_LATCH, A4 8, A5 9, GND_2 10 GND, A6 11, A7 12, A8 13, A9 14, GND_3 15 GND, A10 16, A11 17, VCC_2 18 +3.3V_LATCH, A12 19, A13 20, GND_4 21 GND, A14 22, A15 23, 2OE-IC3 24
1CLK 48, 1CLK-IC3
GND_8 45 GND, GND_7 38 GND, GND_6 33 GND, GND_5 27 GND, GND_4 22 GND, GND_3 16 GND, GND_2 11 GND, GND_1 4 GND
VCC_4 42 +3.3V_LATCH, VCC_3 31 +3.3V_LATCH, VCC_2 18 +3.3V_LATCH, VCC_1 7 +3.3V_LATCH

IC4

SN74LVC16374DGGR
1CLK-IC4 48, GND 45, +3.3V_LATCH 42, GND 39, GND 34, +3.3V_LATCH 31, GND 28, 2CLK-IC4 25
1OE-IC4 1, 1Q1 2, A16 3, GND_1 4 GND, A17 5, A18 6, VCC_1 7 +3.3V_LATCH, A19 8, A20 9, GND_2 10 GND, A21 11, A22 12, A23 13, 2Q1 14, 2Q2 15, GND_3 16 GND, 2Q3 17, 2Q4 18, VCC_2 19 +3.3V_LATCH, 2Q5 20, 2Q6 21, GND_4 22 GND, 2Q7 23, 2Q8 24, 2OE-IC4
1CLK 48, 1CLK-IC4
GND_8 45 GND, GND_7 38 GND, GND_6 33 GND, GND_5 27 GND, GND_4 22 GND, GND_3 16 GND, GND_2 11 GND, GND_1 4 GND
VCC_4 42 +3.3V_LATCH, VCC_3 31 +3.3V_LATCH, VCC_2 18 +3.3V_LATCH, VCC_1 7 +3.3V_LATCH

A[0..23]

SMI DATA & CTRL

SD0, SD1, SD2, SD3, SD4, SD5, SD6, SD7, SD8, SD9, SD10, SD11, SD12, SD13, SD14, SD15

ADDR_OE
ADDR_LTCH_0 — 1OE-IC3, 2OE-IC3, 1CLK-IC3, 2CLK-IC3
ADDR_LTCH_8 — 2CLK-IC3
ADDR_LTCH_16 — 1CLK-IC4
ADDR_LTCH_24 — 2CLK-IC4
DATA_WR_OE — 1OE-IC2, 2OE-IC2
DATA_WR_LTCH_LB — 1CLK-IC2
DATA_WR_LTCH_HB — 2CLK-IC2
DATA_RD_LTCH_HB — 2CLK-IC1
DATA_RD_LTCH_LB — 1CLK-IC1
DATA_RD_OE — 1OE-IC1, 2OE-IC1

Decoupling

C13 100nF, C14 10nF GND
C17 100nF, C19 10nF GND
C21 100nF, C23 10nF GND
C25 100nF, C27 10nF GND
+3.3V_LATCH

68000 vs PiStorm

1K R88 GND
BC817 Q43
4K7 R86
EPM-67-RESET-SOC
1K R89 GND
BC817 Q5
4K7 R87
EPM-68-HALT-SOC
D37 68000
R83 4K7 GND
PiStorm-68000
+5V
SW1
68K_ON
PI_ON
OK R13
OK R14
4K7 R84
Q6 BC817
R90 1K GND
RESET
4K7 R85
Q42 BC817
R91 1K GND
HALT
R81 4K7
D36 PiStorm GND
+5V-68000
+5V-PI
R8 18K HALT
R9 18K RESET
R6 10K EMP-TTL-HALT-SOC
R7 10K EMP-TTL-RESET-SOC
Q3 BC817 HALT-SOC
Q4 BC817 RESET-SOC
Q1 BC817 HALT-SOC
Q2 BC817 RESET-SOC
+5V-PI GND
+5V-68K GND
+5V-68000 GND

Voltage regulation

U1 lm1117impx-33
+5V-LDO
C3 22uF GND
IN 3, TAB 4, OUT 2, GND 1
CR1 SBRT
C1 22uF GND
+3.3V_(VCC)
If Max II Then 0R
If Max V Then DNP
R1 DNP
R18 0R
+5V
+5V-PI
R17 DNP
+5V-LDO
U2 lm1117impx-18 (DNP)
C4 22uF GND
CR2 SBRT
C2 22uF GND
+1.8V_(VCC_INT)
Populate only for 1.8V (VCC INT) MaxV
+5V GND
1N4148W D2
+3.3V_LATCH
+3.3V_(VCC)
+1.8V_(VCC_INT) GND
NT18 NetTie_2 +3.3V_(VCC) +3.3V_CPLD
NT19 NetTie_2 +1.8V_(VCC_INT) +1.8V_CPLD

Level shifting CBTDs

U4 SN74CBTD3384PW
GND
EPM-52-VMA 1, VMA 2, E 3, EPM-53-E 4, EPM-54-VPA 5, VPA 6, BERR 7, EPM-55-BERR 8, EPM-56-IPL0 9, IPL0 10, GND 11 GND, GND 12
*1OE 1, 1B1 2, 1A1 3, 1A2 4, 1B2 5, 1B3 6, 1A3 7, 1A4 8, 1B4 9, 1B5 10, 1A5 11, GND 12
VCC 24, 2B5 23, 2A5 22, 2A4 21, 2B4 20, 2B3 19, 2A3 18, 2A2 17, 2B2 16, 2B1 15, 2A1 14, *2OE 13
+5V-CBTD
C5 100nF GND
EPM-66-FC0 24, FC0 23, FC1 22, EPM-64-FC1 21, EPM-61-IPL2 20, IPL2 19, IPL1 18, EPM-58-IPL1 17, EPM-57-FC2 16, FC2 15, GND 14 GND, GND 13

U5 SN74CBTD3384PW
GND
EPM-67-RESET-SOC 1, EMP-TTL-RESET-SOC 2, EMP-TTL-HALT-SOC 3, EPM-68-HALT-SOC 4, EPM-69-BR 5, BR 6, BGACK 7, EPM-70-BGACK 8, EPM-71-BG 9, BG 10, GND 11 GND, GND 12
*1OE 1, 1B1 2, 1A1 3, 1A2 4, 1B2 5, 1B3 6, 1A3 7, 1A4 8, 1B4 9, 1B5 10, 1A5 11, GND 12
VCC 24, 2B5 23, 2A5 22, 2A4 21, 2B4 20, 2B3 19, 2A3 18, 2A2 17, 2B2 16, 2B1 15, 2A1 14, *2OE 13
+5V-CBTD
C6 100nF GND
EPM-76-DTACK 23, DTACK 22, R/W 21, EPM-75-R/W 20, EPM-74-LDS 19, LDS 18, UDS 17, EPM-73-UDS 16, EPM-72-AS 15, AS 14, GND 13 GND
R15 0R +5V-PI +5V-CBTD
R16 0R +5V

RaspberryPi Interface

+5V-PI-REG — R29 0R — +5V-PI-IN
+5V-PI — R30 0R — +5V-PI-IN
J1 Raspberry_Pi_2_3
5V (2) (4), 3V3 (1) (17)
SD6 8, SD7 10, SD8 36, SD9 11, SD10 12, SD11 35, SD12 38, SD13 40, SD14 15, SD15 16, TMS 18, TDO 22, TCK 37, TDI 13
GPIO14/TXD, GPIO15/RXD, GPIO16, GPIO17, GPIO18/PWM0, GPIO19/MISO1, GPIO20/MOSI1, GPIO21/SCLK1, GPIO22, GPIO23, GPIO24, GPIO25, GPIO26, GPIO27
ID_SD/GPIO0 27 AUX0, ID_SC/GPIO1 28 AUX1, SDA/GPIO2 3 SA2, SCL/GPIO3 5 SA1, GCLK0/GPIO4 7 PICLK, GCLK1/GPIO5 29 SA0, GCLK2/GPIO6 31 SOE, CE1/GPIO7 26 SWE, CE0/GPIO8 24 SD0, MISO0/GPIO9 21 SD1, MOSI0/GPIO10 19 SD2, SCLK0/GPIO11 23 SD3, PWM0/GPIO12 32 SD4, PWM1/GPIO13 33 SD5
GND (6) (25) (30) (34) (9) (14) (20) (39)
+5V-PI-IN — C32 100uF, C31 22uF GND
Decoupling for RPI
One TANT per pin

Power LEDs

+1.8V_(VCC_INT) — R61 1MR — Q35 BC817 — D29 +1.8V — R67 3K +5V
D23 +5V — R55 3K +5V GND
D3 +5V — R28 3K +5V-PI-REG GND
D35 +3.3V — R79 3K +3.3V_(VCC) GND

PiStorm CPLD EPM570T100

C35 100nF GND
C36 100nF GND
C7 100nF GND
C8 100nF GND
+1.8V_CPLD
+3.3V_CPLD
C9 100nF
C10 100nF
C11 100nF
C12 100nF
C33 100nF GND
C34 100nF GND
U6 EPM570T100
VCCINT (13) (39) (63) (88)
VCCIO1 (9) (31) (45) (59)
VCCIO2 (80) (94)
SD0 2, SD1 3, SD2 4, SD3 5, SD4 6, SD5 7, SD11 8, PICLK 12, SD13 14, SD12 15, SD9 16, SD8 17, SD15 18, SD14 19, SD10 20, SD7 21, SD6 26, SA2 27, SA1 28, SWE 29, AUX0 30, AUX1 33, SA0 34, SOE 35, DATA_WR_LTCH_HB 36, DATA_RD_OE 38, DATA_WR_LTCH_LB 40, DATA_WR_OE 41, ADDR_LTCH_8 42, ADDR_OE 43, ADDR_LTCH_0 44, ADDR_LTCH_16 47, ADDR_LTCH_24 48, DATA_RD_LTCH_LB 49, DATA_RD_LTCH_HB 50
IO1_43/DEV_OE, IO1_44/DEV_CLRn
TMS 22, TDI 23, TCK 24, TDO 25
IO2_1 1, IO2_52 52, IO2_53 53, IO2_54 54, IO2_55 55, IO2_56 56, IO2_57 57, IO2_58 58, IO2_61 61, IO2_62/GCLK2 62, IO2_64/GCLK3 64, IO2_66 66, IO2_67 67, IO2_68 68, IO2_69 69, IO2_70 70, IO2_71 71, IO2_72 72, IO2_73 73, IO2_74 74, IO2_75 75, IO2_76 76, IO2_77 77, IO2_78 78, IO2_81 81, IO2_82 82, IO2_83 83, IO2_84 84, IO2_85 85, IO2_86 86, IO2_87 87, IO2_89 89, IO2_91 91, IO2_92 92, IO2_95 95, IO2_96 96, IO2_97 97, IO2_98 98, IO2_99 99, IO2_100 100
EPM-52-VMA, EPM-53-E, EPM-54-VPA, EPM-55-BERR, EPM-56-IPL0, EPM-57-FC2, EPM-58-IPL1, EPM-61-IPL2, EPM-64-FC1, EPM-66-FC0, EPM-67-RESET-SOC, EPM-68-HALT-SOC, EPM-69-BR, EPM-70-BGACK, EPM-71-BG, EPM-72-AS, EPM-73-UDS, EPM-74-LDS, EPM-75-R/W, EPM-76-DTACK
GNDINT (11) (37) (65) (90)
GNDIO (10) (32) (46) (60) (79) (93)
R3 DNP
R2 0R CLK
GND
R4 4K7 +3.3V_CPLD
R5 4K7 GND

Precision-Arrays Corp.

Sheet: /
File: AmiCube-PiStorm68K.kicad_sch

Title: PiStorm AmiCube Edition

Size: User | Date: 2025-10-22 | Rev: 1.8
KiCad E.D.A. 10.0.7 | Id: 1/1

U3B 74HC14

RESET 3, 4 RESET-LED
U3A 74HC14: HALT 1, 2 HALT-LED
U3C 74HC14: EPM-68-HALT-SOC 5, 6 EPM-68-HALT-SOC-LED
U3D 74HC14: EPM-67-RESET-SOC 9, 8 EPM-67-RESET-SOC-LED
U3E 74HC14: 11, 10 GND
U3F 74HC14: 13, 12 GND
U3G 74HC14: VCC 14 +5V, GND 7 GND

68000 CTRL LED

D1 68K-RESET — R10 3K +5V — BC817 — R11 1MR RESET-LED — Q7 GND
D6 68K-HALT — R25 3K +5V — BC817 — R20 1MR HALT-LED — Q12 GND

PiStorm CTRL LED

D18 PI-HALT — R50 3K +5V — BC817 — R44 1MR EPM-68-HALT-SOC-LED — Q24 GND
D21 PI-RESET — R53 3K +5V — BC817 — R47 1MR EPM-67-RESET-SOC-LED — Q27 GND

+5V Regulation

LTC3119IUFD#PBF
L1 4.7uH
0.1uF C29, 0.1uF C28
SW1_1 18, SW1_2 21, SW2_1 2, SW2_2 5
BST1 23, BST2 28
PVIN_1 19, PVIN_2 20, VIN 16, RUN 15, PWM/SYNC 25, MPPC 12, VCC 13, SVCC 8, RT 14
PVOUT_2 4, PVOUT_1 3, FB 9, PGOOD 7, N/C_3 27, N/C_2 26, N/C_1 24, VC 10
PGND_4 22, PGND_3 17, PGND_2 6, PGND_1 1, EP_(PGND) 29, SGND 11
From 2.5V to 18V
+5V-PI — 10uF C38 — R21 100K
C40 1uF
100uF C46, 100uF C44
R26 536K, R27 102K
+5V-PI-REG
PGood
C37 4.7uF — R19 162K
R24 100K — C39 560pF
VCC
+5V-PI-REG GND

N-Channel switch

U8 TPS22975NDSGT
+5V — 1uF C16 GND
VIN (1) (2), VBIAS 4, ON PI_ON 3, VOUT (8) (7), CT 6, GND (5) (9) PAD
100nF C18 GND — +5V-PI
10nF C15 GND
R22 4K7 GND

U9 TPS22975NDSGT
+5V — 1uF C26 GND
VIN (1) (2), VBIAS 4, ON 68K_ON 3, VOUT (8) (7), CT 6, GND (5) (9) PAD
100nF C20 GND — +5V-68000
10nF C22 GND
R23 4K7 GND