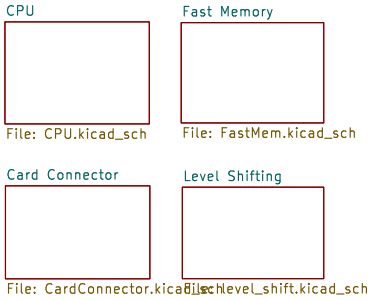
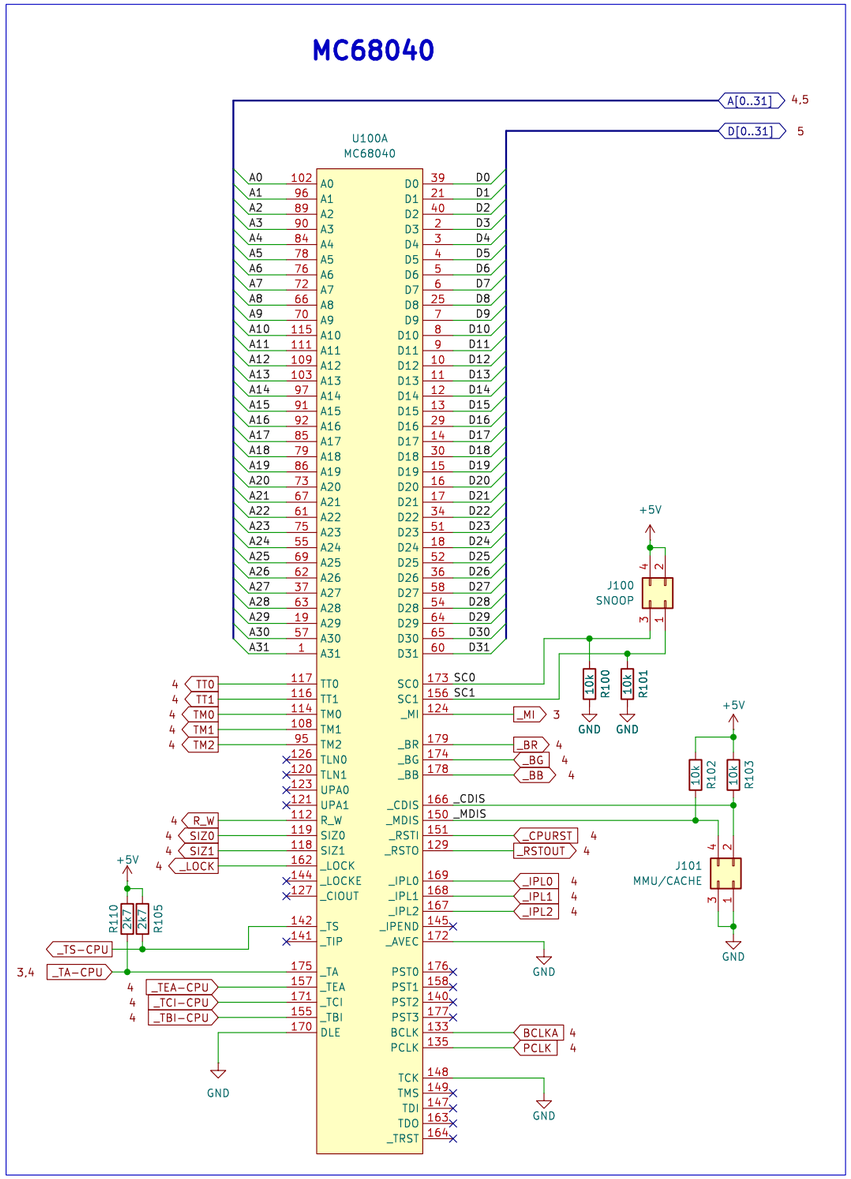


AmigaPCI CPU LOCAL BUS CARD
MC68040 + 128MB FAAAST RAM

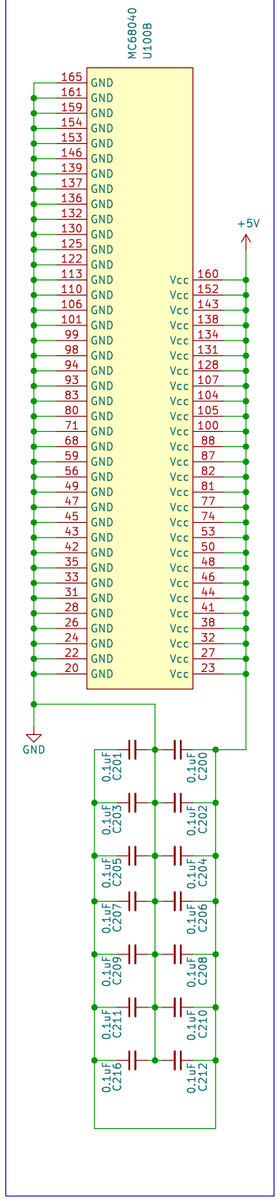
"THE BRAIN"

Sheet: /		
File: AmigaPCI 68040.kicad_sch		
Title: AmigaPCI 68040 Local Bus Card		
Size: A	Date: 2025-06-29	**Rev: 5.0**
KiCad E.D.A. 8.0.9		Id: 1/5

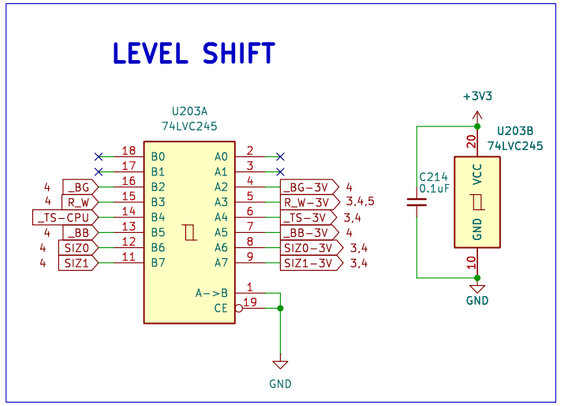
MC68040



MC68040 POWER



LEVEL SHIFT



MC68040 HEATSINK:
BDN18-6CB/A01

CPU

Sheet: /CPU/
File: CPU.kicad_sch

Title: AmigaPCI 68040 Local Bus Card

Size: B	Date: 2025-06-29	**Rev: 5.0**
KiCad E.D.A. 8.0.9		Id: 2/5

SDRAM

BANK0

U401
SDRAM(16Mx32)

BANK1

U402
SDRAM(16Mx32)

RAM CONTROLLER

U400
ICE40HX1K-VQ100

U400F1
W25X20CLSN

SPI CN400

FAST MEMORY

Sheet: /Fast Memory/
File: FastMem.kicad_sch

Title: AmigaPCI 68040 Local Bus Card

Size: B	Date: 2025-08-14	Rev: 5.0
KiCad E.D.A. 8.0.9		Id: 3/5

LOCAL BUS PORT

CN100
DIN41612_03x40

+3V3SB +1V2 +3V3 +5V +5V +3V3

PORTSIZE
2 _BB
5 AA1
_INT2
_CPUCONF
2 _BR
2 _LOCK
2 _CPURST
2 TM0
2 R_W
2 TM1
2 TM2
2 SIZ0
2 SIZ1
_TS

A12 A13 A14 A0 A15 A2 A3 A4 A6 A5 A9 A8 A7 A11 A10 DA28 DA26 DA24 DA31 DA30 DA21 DA29 DA27 DA20 DA22 DA25 DA19 DA23 DA17 DA15 DA14

R111 22R
R120 22R
R119 22R

_TACK _TEA CDONE 3 _BG 2 _TBI _INT6 _TCI _IPL0 2 BCLKC _RESET 3 _IPL1 2 _IPL2 2 TT0 2 TT1 2 SCL SDA _RSTOUT 2

GND GND

BUS SIZING

U111
ICE40HX4K-TQ144

+3V3 0.1uF C136 U409F2 W25X20CLSN
GND HOLD WP DO(IO1) DI(IO0) SCK CS VCC 8 4 7 3 2 5 6 1
10k R106 10k R107

SPI CN111
6 U409_CRESET
5 U409_SS
4 U409_SDO
3 U409_SCK
2 U409_SDI
1 GND

3 CDONE
2 _TBI-CPU
U409_SCK
U409_SS

BCLKC 22R R114
3 BCLKB R115 22R
3 RAMCLKB 22R R116
2 BCLKA R117 22R
2 PCLK 22R R118
CLK40

LVA0 LVA1
5 A1_OUT
PORTSIZE
_TEA
_TCI
_TS
3 _TACK
3 _LBEN
_TBI
3 RAMCLKA 22R R113

LVDB29 LVDB22 LVDB20 LVDB23 LVDB19 LVDB25 LVDB14 LVDB15 LVDB17 LVDB13 LVDB18 LVDB12 LVDB16 LVDB10 LVDB11 LVDB9 LVDB8 LVDB7 LVDB5 LVDB6 LVDB1 LVDB4 LVDB2 LVDB3 LVDB0
3 _RESET

CDONE CRESET_B IO2_103_CBSEL0 IO2_104_CBSEL1 IOB_105_SDO IOB_106_SDI IOB_107_SCK IOB_108_SS IO3_13B_GBIN7 IO3_14A_GBIN6 IO2_81_GBIN5 IO2_82_GBIN4 IO1_140_GBIN3 IO1_141_GBIN2 IO0_197_GBIN1 IO0_198_GBIN0 IO2_56 IO2_57 IO2_61 IO2_63 IO2_64 IO2_71 IO2_72 IO2_73 IO2_79 IO2_80 IO2_91 IO2_94 IO2_95 IO2_96 IO3_2A IO3_2B IO3_3A IO3_3B IO3_4A IO3_4B IO3_5A IO3_5B IO3_8A IO3_8B IO3_10A IO3_10B IO3_12A IO3_12B IO3_13A IO3_14B IO3_17A IO3_17B IO3_18A IO3_18B IO3_23A IO3_23B IO3_24A IO3_24B IO3_25A IO3_25B GNDPLL0 GNDPLL1 GND GND_1 GND_2 GND_3 GND_4 GND_5 GND_6 GND_7 GND_8

VCC VCC_1 VCC_2 VCC_3 VCC_SPI VCCIO_0 VCCIO_0_1 VCCIO_1 VCCIO_1_1 VCCIO_2 VCCIO_2_1 VCCIO_3 VCCIO_3_1 VCCPLL0 VCCPLL1 VPP_2V5 VPP_FAST IO2_102 IO1_109 IO1_110 IO1_111 IO1_112 IO1_114 IO1_115 IO1_116 IO1_117 IO1_118 IO1_119 IO1_120 IO1_128 IO1_136 IO1_137 IO1_138 IO1_139 IO1_144 IO1_146 IO1_147 IO1_148 IO1_152 IO1_160 IO1_161 IO1_164 IO1_165 IO1_166 IO1_167 IO0_168 IO0_169 IO0_170 IO0_171 IO0_172 IO0_173 IO0_174 IO0_177 IO0_178 IO0_179 IO0_181 IO0_190 IO0_191 IO0_192 IO0_206 IO0_212 IO0_213 IO0_214 IO0_215 IO0_216 IO0_217 IO0_219 IO0_220 IO0_221 IO0_222

LVDA3 LVDA0 LVDA1 LVDA4 LVDA2 LVDA5 LVDA6 LVDA7 LVDA8 LVDA9 LVDA10 LVDA11 LVDA12 LVDA16 LVDA13 LVDA18 LVDA22 LVDA14 LVDA15 LVDA17 LVDA23 LVDA19 LVDA25 LVDA20 LVDA27 LVDA29 LVDA21 LVDA30 LVDA31 LVDA24 LVDA26 LVDA28 LVDB28 LVDB24 LVDB26 LVDB21 LVDB30 LVDB31 LVDB27

+1V2 0.1uF C122 0.1uF C123 0.1uF C124 0.1uF C125 0.1uF C126 0.1uF C127 0.1uF C128 0.1uF C129 0.1uF C130 GND
+3V3
+1V2 R108 100R R109 100R
C131 0.1uF C132 10uF C133 0.1uF C134 10uF

_BG-3V 2
R_W-3V 2,3,5
_TCI-CPU 2
_CPUBG 5
SIZ1-3V 2,3
SIZ0-3V 2,3
_TEA-CPU 2
_TA-CPU 2,3
_TS-3V 2,3
_BB-3V 2
_DMA 5
_BUFEN 5
BUFDIR 5

3,5 LVDA[0..31]
5 LVDB[0..31]
2,5 A[0..31]
5 DA[0..31]

LVDA0 LVDA1 LVDA2 LVDA3 LVDA4 LVDA5 LVDA6 LVDA7 LVDA8 LVDA9 LVDA10 LVDA11 LVDA12 LVDA13 LVDA14 LVDA15 LVDA16 LVDA17 LVDA18 LVDA19 LVDA20 LVDA21 LVDA22 LVDA23 LVDA24 LVDA25 LVDA26 LVDA27 LVDA28 LVDA29 LVDA30 LVDA31

LVDB0 LVDB1 LVDB2 LVDB3 LVDB4 LVDB5 LVDB6 LVDB7 LVDB8 LVDB9 LVDB10 LVDB11 LVDB12 LVDB13 LVDB14 LVDB15 LVDB16 LVDB17 LVDB18 LVDB19 LVDB20 LVDB21 LVDB22 LVDB23 LVDB24 LVDB25 LVDB26 LVDB27 LVDB28 LVDB29 LVDB30 LVDB31

A0 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20 A21 A22 A23 A24 A25 A26 A27 A28 A29 A30 A31

DA0 DA1 DA2 DA3 DA4 DA5 DA6 DA7 DA8 DA9 DA10 DA11 DA12 DA13 DA14 DA15 DA16 DA17 DA18 DA19 DA20 DA21 DA22 DA23 DA24 DA25 DA26 DA27 DA28 DA29 DA30 DA31

LVA0 LVA1 LVA[0..31] 3,5

CLOCK STUFF

+3V3 C137 0.1uF X100 40MHz EN GND OUT V+ 4 2 1 3 22R R112 CLK40 GND

+5V 47uF C115 47uF C116 47uF C138 GND
+3V3 47uF C113 47uF C114 47uF C135 GND
+1V2 47uF C117 GND

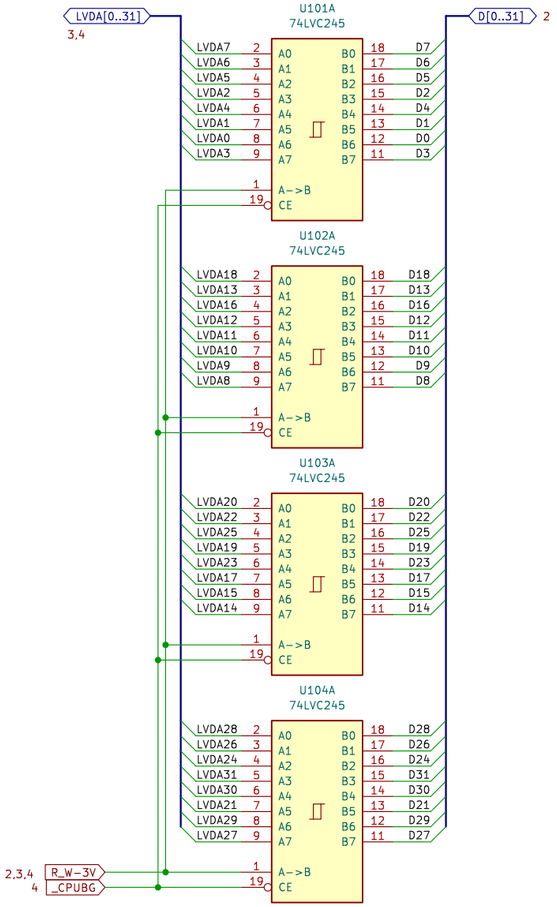
H1 MountingHole_Pad
H2 MountingHole_Pad
GND

LOCAL BUS PORT, BUS SIZING, CLOCKS

Sheet: /Card Connector/
File: CardConnector.kicad_sch

Title: AmigaPCI 68040 Local Bus Card

Size: B	Date: 2025-06-29	Rev: 5.0
KiCad E.D.A. 8.0.9		Id: 4/5



LEVEL SHIFTING

Sheet: /Level Shifting/
File: level_shift.kicad_sch

Title: AmigaPCI 68040 Local Bus Card

Size: USLedger | Date: 2025-06-29 | **Rev: 5.0**
KiCad E.D.A. 8.0.9 | Id: 5/5