System overview

Power input, protection and Edge connections

Sheet 02

{B_POWER} {B_POWER}

Level translation and input filters

Sheet 03

{B_TRANSLATION} {B_TRANSLATION}

DB9 and PS/2 connectors

Sheet 04

{B_INTERFACES} {B_INTERFACES}

Joystick and PS/2 series arrays and pull-ups

Sheet 05

{B_CONDITIONING} {B_CONDITIONING}

Joystick 1, keyboard and mouse activity

Sheet 06

{B_ACTIVITY_1} {B_ACTIVITY_1}

Joystick 2 activity and LEDs

Sheet 07

{B_ACTIVITY_2} {B_ACTIVITY_2}

Board guide and engineering reference

Sheet 08

Hierarchical buses name the cross-sheet signals. Global labels continue each exact native net.

Open documentation/index.html for the board guide, connector maps and validation records.

BUS {B_ROOT}

B_POWER, B_TRANSLATION, B_INTERFACES, B_CONDITIONING, B_ACTIVITY_1, B_ACTIVITY_2

Precision-Arrays / Minimig.ca

Sheet: /
File: PMod-DB9-PS2-EDGE.kicad_sch

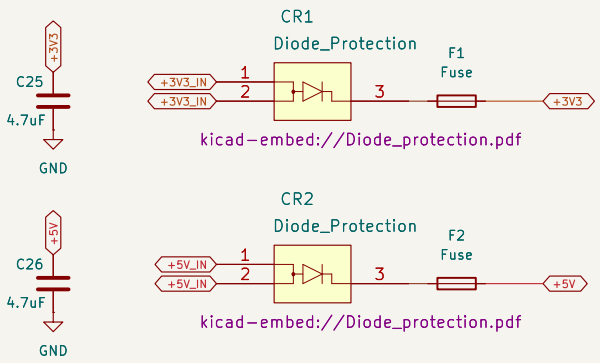
Title: AmiCube DEV1 / Edge / sheet 1

Size: A4 | Date: 2026-10-16 | Rev: 2.4

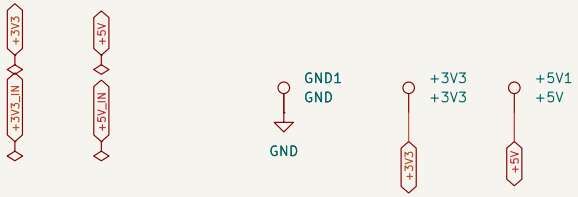
KiCad E.D.A. 10.0.7 | Id: 1/13

Power input, protection and Edge connections

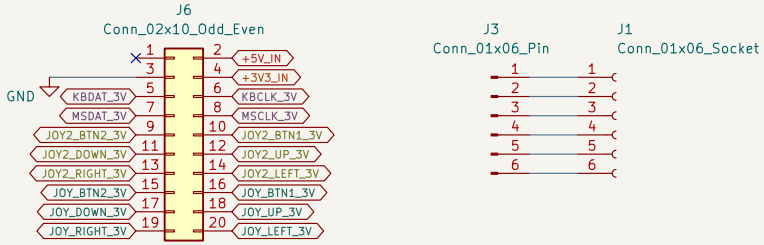
3.3 V / 5 V rail protection



Power flags



Edge expansion header and auxiliary headers



{B_POWER}

BUS {B_POWER}

+3V3, +3V3_IN, +5V, +5V_IN, GND, JOY2_BTN1_3V, JOY2_BTN2_3V, JOY2_DOWN_3V, JOY2_LEFT_3V, JOY2_RIGHT_3V, JOY2_UP_3V, JOY_BTN1_3V, JOY_BTN2_3V, JOY_DOWN_3V, JOY_LEFT_3V, JOY_RIGHT_3V, JOY_UP_3V, KBCLK_3V, KBDAT_3V, MSCLK_3V, MSDAT_3V

Precision-Arrays / Minimig.ca

Sheet: /Power input, protection and Edge connections/
File: power.kicad_sch

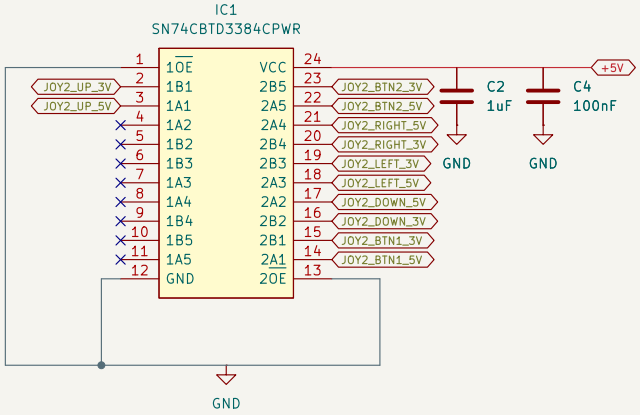
Title: AmiCube DEV1 / Edge / sheet 2

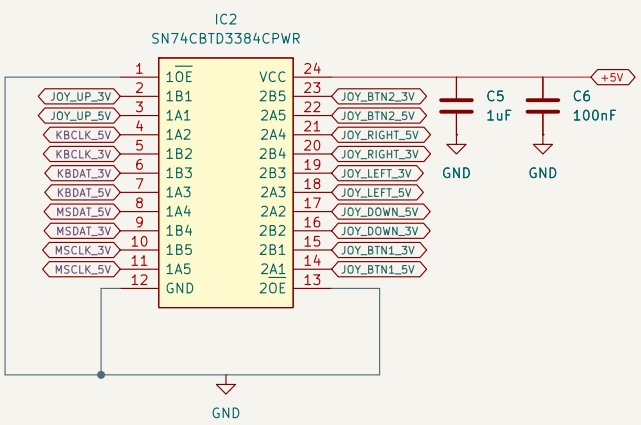
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KiCad E.D.A. 10.0.7 | Id: 2/13

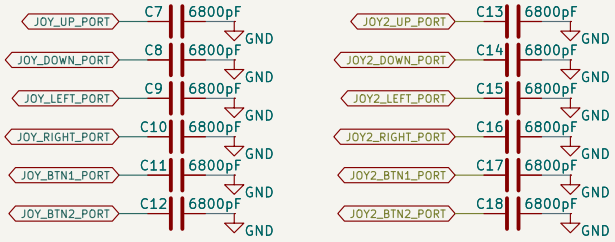
Level translation and input filters

Input level translation





Joystick input filters



{B_TRANSLATION}

BUS {B_TRANSLATION}

+5V, GND, JOY2_BTN1_3V, JOY2_BTN1_5V, JOY2_BTN1_PORT, JOY2_BTN2_3V, JOY2_BTN2_5V, JOY2_BTN2_PORT, JOY2_DOWN_3V, JOY2_DOWN_5V, JOY2_DOWN_PORT, JOY2_LEFT_3V, JOY2_LEFT_5V, JOY2_LEFT_PORT, JOY2_RIGHT_3V, JOY2_RIGHT_5V,
Complete members: open the bus alias or documentation/index.html.

Precision—Arrays / Minimig.ca

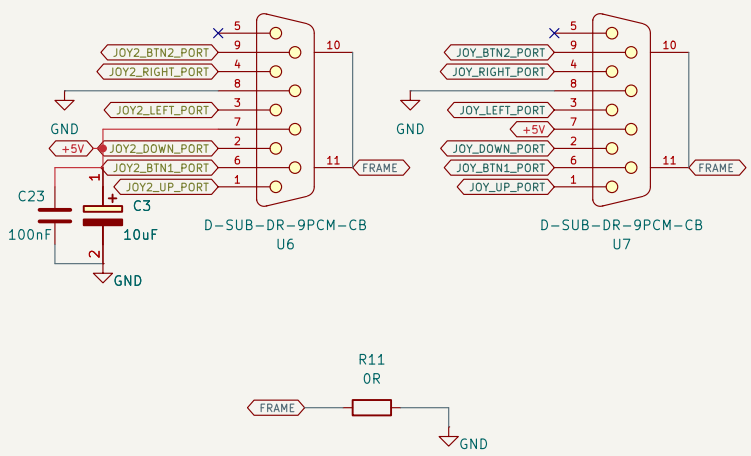
Sheet: /Level translation and input filters/
File: translation.kicad_sch

Title: AmiCube DEV1 / Edge / sheet 3

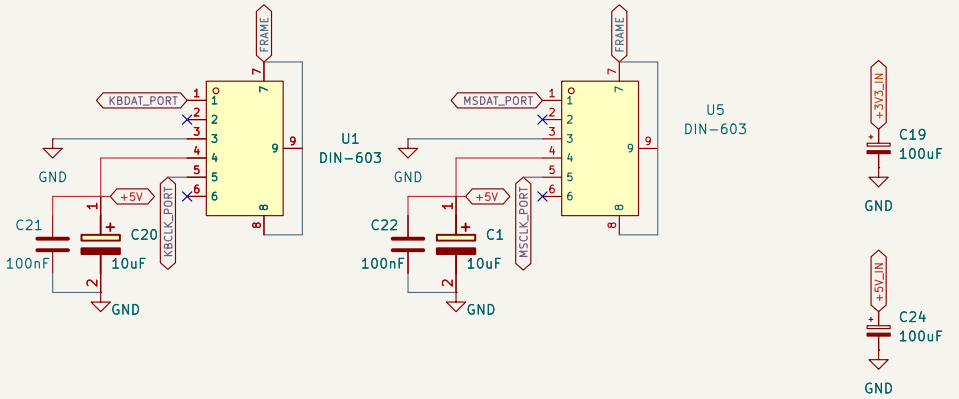
Size: A4 | Date: 2026-10-16 | Rev: 2.4
KiCad E.D.A. 10.0.7 | Id: 3/13

DB9 and PS/2 connectors

DB9 joystick ports and chassis



PS2 keyboard and mouse ports



{B_INTERFACES}

BUS {B_INTERFACES}

+3V3_IN, +5V, +5V_IN, GND, JOY2_BTN1_PORT, JOY2_BTN2_PORT, JOY2_DOWN_PORT, JOY2_LEFT_PORT, JOY2_RIGHT_PORT, JOY2_UP_PORT, JOY_BTN1_PORT, JOY_BTN2_PORT, JOY_DOWN_PORT, JOY_LEFT_PORT, JOY_RIGHT_PORT, JOY_UP_PORT, KBCLK_PORT, KBDAT_PORT, MSCLK_PORT, MSDAT_PORT

Precision-Arrays / Minimig.ca

Sheet: /DB9 and PS/2 connectors/
File: interfaces.kicad_sch

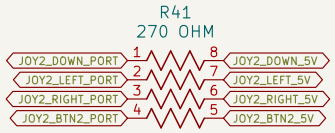
Title: AmiCube DEV1 / Edge / sheet 4

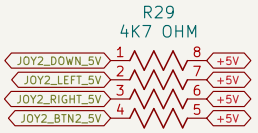
Size: A4 | Date: 2026-10-16 | Rev: 2.4

KiCad E.D.A. 10.0.7 | Id: 4/13

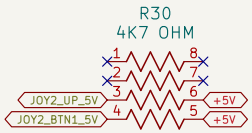
Joystick and PS/2 series arrays and pull-ups

Joystick series arrays and pull-ups

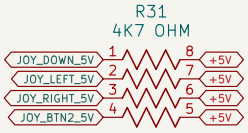




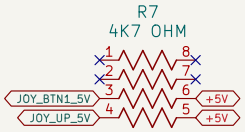






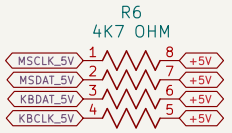






PS2 series arrays and pull-ups





{B_CONDITIONING}

BUS {B_CONDITIONING}

+5V, JOY2_BTN1_5V, JOY2_BTN1_PORT, JOY2_BTN2_5V, JOY2_BTN2_PORT, JOY2_DOWN_5V, JOY2_DOWN_PORT, JOY2_LEFT_5V, JOY2_LEFT_PORT, JOY2_RIGHT_5V, JOY2_RIGHT_PORT, JOY2_UP_5V, JOY2_UP_PORT, JOY_BTN1_5V, JOY_BTN1_PORT, JOY_BTN2_5V,
Complete members: open the bus alias or documentation/index.html.

Precision-Arrays / Minimig.ca

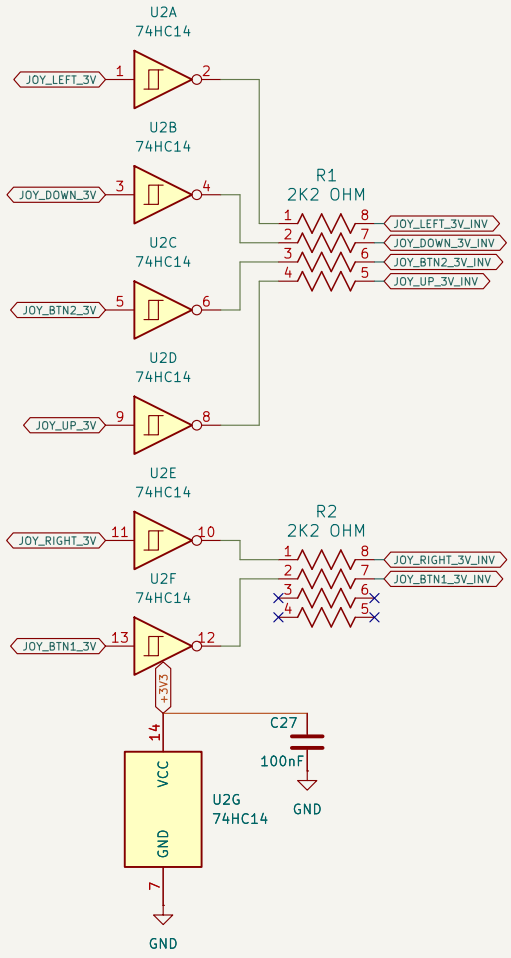
Sheet: /Joystick and PS/2 series arrays and pull-ups/
File: conditioning.kicad_sch

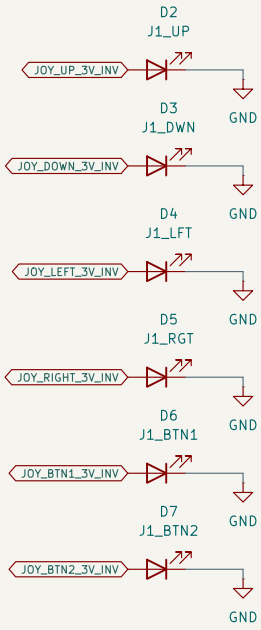
Title: AmiCube DEV1 / Edge / sheet 5

Size: A4 | Date: 2026-10-16 | Rev: 2.4
KiCad E.D.A. 10.0.7 | Id: 5/13

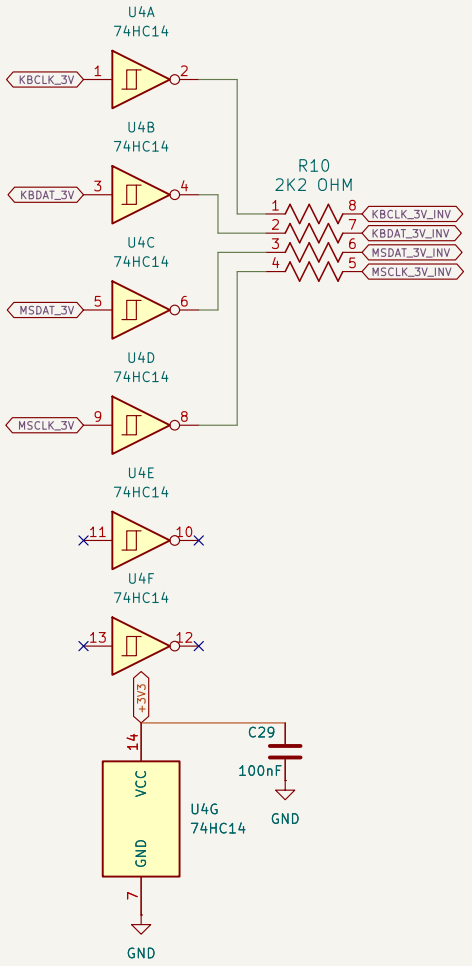
Joystick 1, keyboard and mouse activity

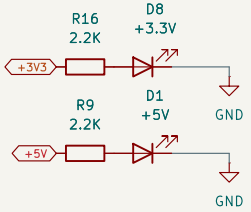
Joystick 1 activity and LEDs





Keyboard / mouse activity and LEDs





{B_ACTIVITY_1}

BUS {B_ACTIVITY_1}

+3V3, +5V, GND, JOY_BTN1_3V, JOY_BTN2_3V, JOY_DOWN_3V, JOY_LEFT_3V, JOY_RIGHT_3V, JOY_UP_3V, KBCLK_3V, KBCLK_3V_INV, KBDAT_3V, KBDAT_3V_INV, MSCLK_3V, MSCLK_3V_INV, MSDAT_3V, MSDAT_3V_INV

Precision—Arrays / Minimig.ca

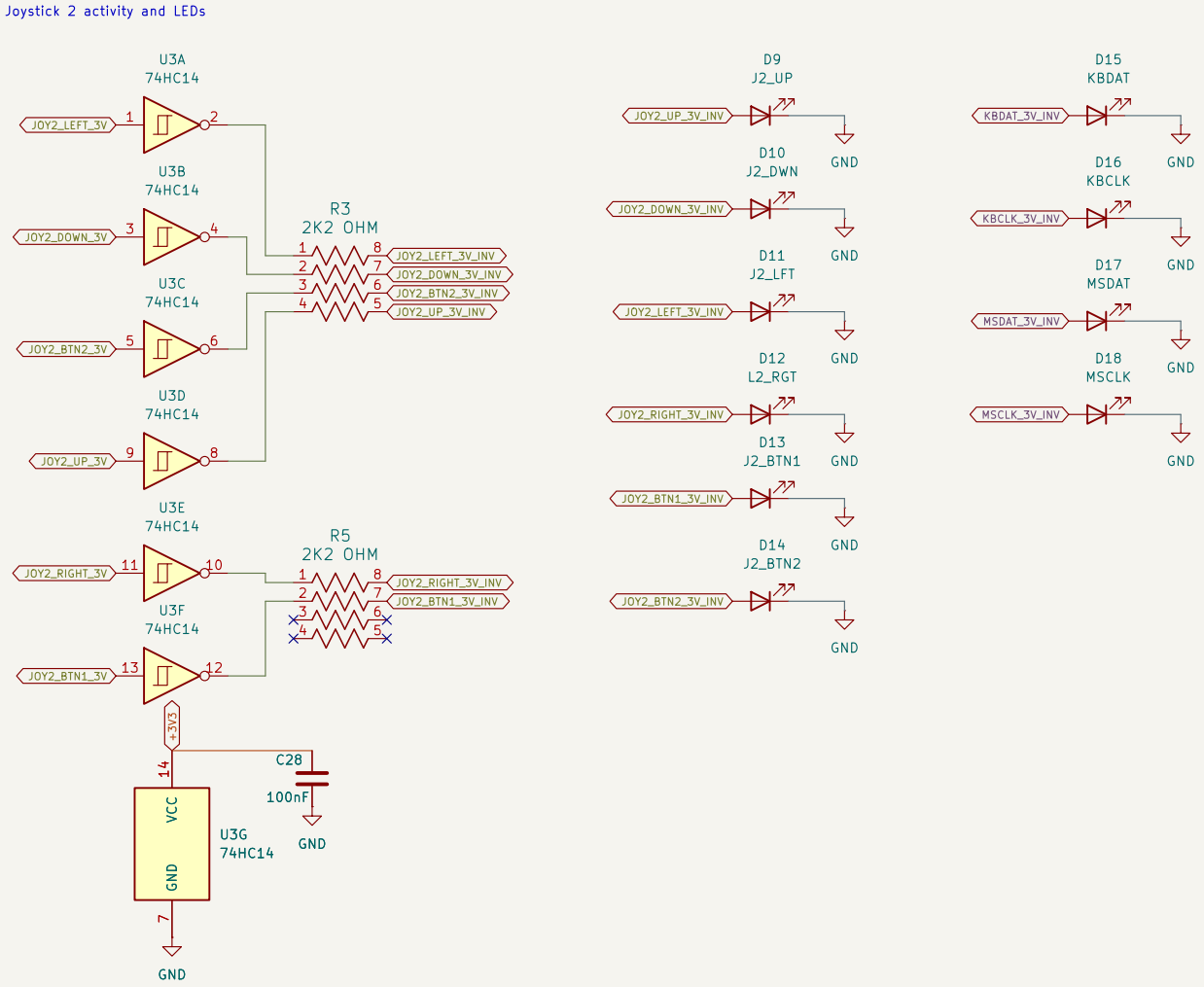
Sheet: /Joystick 1, keyboard and mouse activity/
File: activity_1.kicad_sch

Title: AmiCube DEV1 / Edge / sheet 6

Size: A4 | Date: 2026-10-16 | Rev: 2.4

KiCad E.D.A. 10.0.7 | Id: 6/13

Joystick 2 activity and LEDs



{B_ACTIVITY_2}

BUS {B_ACTIVITY_2}

+3V3, GND, JOY2_BTN1_3V, JOY2_BTN2_3V, JOY2_DOWN_3V, JOY2_LEFT_3V, JOY2_RIGHT_3V, JOY2_UP_3V, KBCLK_3V_INV, KBDAT_3V_INV, MSCLK_3V_INV, MSDAT_3V_INV

Precision—Arrays / Minimig.ca

Sheet: /Joystick 2 activity and LEDs/
File: activity_2.kicad_sch

Title: AmiCube DEV1 / Edge / sheet 7

Size: A4 | Date: 2026-10-16 | Rev: 2.4

KiCad E.D.A. 10.0.7 | Id: 7/13

Board guide and engineering reference

Top assembly

Sheet 09

Bottom assembly

Sheet 10

Layer stackup and fabrication

Sheet 11

Routing guide

Sheet 12

Power and signal identification

Sheet 13

Hierarchical buses name the cross-sheet signals. Global labels continue each exact native net.

Open documentation/index.html for the board guide, connector maps and validation records.

Precision-Arrays / Minimig.ca

Sheet: /Board guide and engineering reference/
File: Documentation.kicad_sch

Title: AmiCube DEV1 / Edge / sheet 8

Size: A4 | Date: 2026-10-16 | Rev: 2.4

KiCad E.D.A. 10.0.7 | Id: 8/13

Top assembly

Component placement, fitted-side orientation and 3D reference

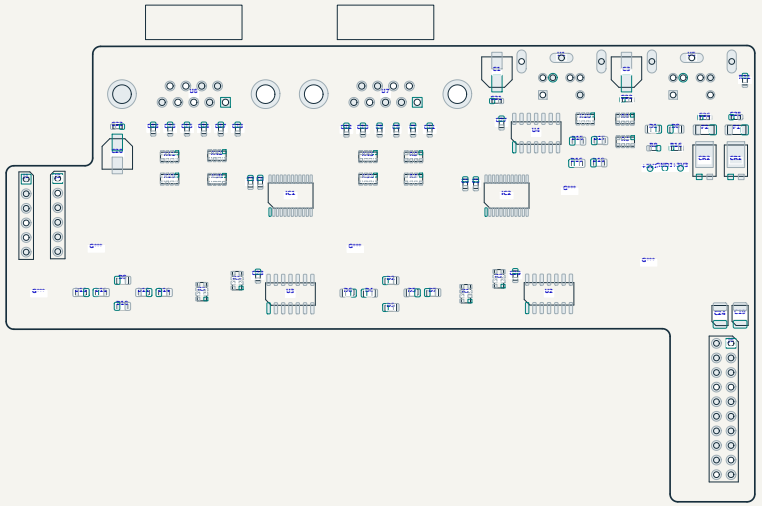
ASSEMBLY NOTES

01 View from outside the top of the board. Use connector edges to orient the board.

02 Teal identifies pad 1 / A1. Red crosses mark DNP footprints. Confirm polarity from the footprint and datasheet.

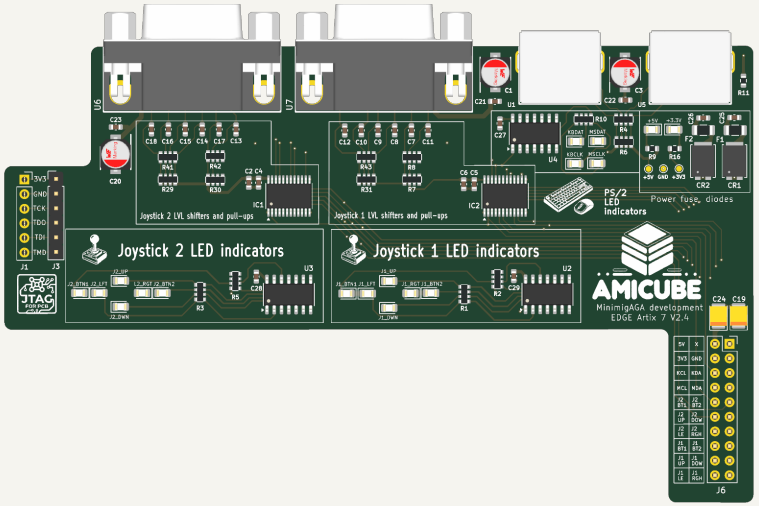
03 The component table controls values and population. The 3D view is illustrative; use the scale below for the plan.

REFERENCE PLAN



25 mm scale check / plan 0.76:1

3D ASSEMBLY VIEW



130.32 × 79.44 mm outline

ASSEMBLY INVENTORY

Placement	Footprints	SMD	DNP
Top side	89	74	0
Bottom side	6	0	0

Saved pads and fabrication outlines form the reference plan. Component values, connector pin maps and source notes are in documentation/index.html.

Ranko Rodic / Minimig.ca | Precision-Arrays

2.4 • generated 2026-10-16 • source c3f4478de0cd

Units: mm. Source CAD governs. Regenerate after design changes.

Documentation only; no electrical symbols

Minimig.ca / Minimig

Sheet: /Board guide and engineering reference/Top assembly/
File: AssemblyTop.kicad_sch

Title: AmiCube DEV1 / Edge / Top assembly

Size: A4	Date: 2026-10-16	**Rev: 2.4**
KiCad E.D.A. 10.0.7		Id: 9/13

Bottom assembly

Component placement, fitted-side orientation and 3D reference

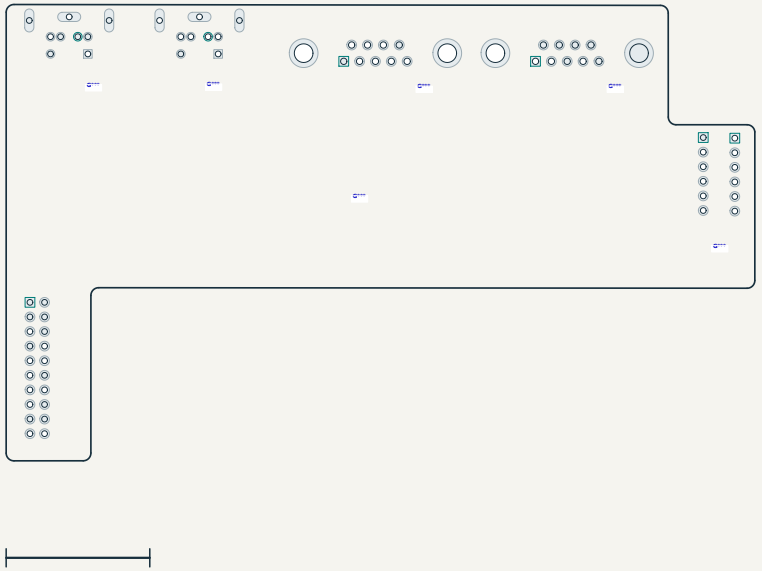
ASSEMBLY NOTES

01 View from outside the bottom of the board. Bottom plan is mirrored.

02 Teal identifies pad 1 / A1. Red crosses mark DNP footprints. Confirm polarity from the footprint and datasheet.

03 The component table controls values and population. The 3D view is illustrative; use the scale below for the plan.

REFERENCE PLAN



25 mm scale check / plan 0.76:1

3D ASSEMBLY VIEW



130.32 × 79.44 mm outline

ASSEMBLY INVENTORY

Placement	Footprints	SMD	DNP
Top side	89	74	0
Bottom side	6	0	0

Saved pads and fabrication outlines form the reference plan. Component values, connector pin maps and source notes are in documentation/index.html.

Ranko Rodic / Minimig.ca | Precision-Arrays

2.4 • generated 2026-10-16 • source c3f4478de0cd

Units: mm. Source CAD governs. Regenerate after design changes.

Documentation only; no electrical symbols

Minimig.ca / Minimig

Sheet: /Board guide and engineering reference/Bottom assembly/
File: AssemblyBottom.kicad_sch

Title: AmiCube DEV1 / Edge / Bottom assembly

Size: A4	Date: 2026-10-16	Rev: 2.4
KiCad E.D.A. 10.0.7		Id: 10/13

Layer stackup and fabrication

Source project settings. Dimensions and fabrication parameters come from the saved PCB.

Layer	Type	Material	mm
F.SilkS	Top Silk Screen	—	—
F.Paste	Top Solder Paste	—	—
F.Mask	Top Solder Mask	—	0.01
F.Cu	copper	—	0.035
dielectric 1	prepreg	FR4	0.1
In1.Cu	copper	—	0.035
dielectric 2	core	FR4	1.24
In2.Cu	copper	—	0.035
dielectric 3	prepreg	FR4	0.1
B.Cu	copper	—	0.035
B.Mask	Bottom Solder Mask	—	0.01
B.Paste	Bottom Solder Paste	—	—
B.SilkS	Bottom Silk Screen	—	—

Saved board parameters

Property	Saved value
Outline	130.32 × 79.44 mm
Board thickness	1.6 mm
Copper layers	4
Footprints	95
Track/arc items	827
Vias	175

Saved routing rules / mm

Class	Clearance	Track	Via/drill
Default	0.2	0.2	0.6/0.3

These drawings record the source design. Confirm material, layer stack and fabrication capabilities against the native project before manufacture.

Ranko Rodic / Minimig.ca | Precision-Arrays

2.4 • generated 2026-10-16 • source c3f4478de0cd

Units: mm. Source CAD governs. Regenerate after design changes.

Documentation only; no electrical symbols

Minimig.ca / Minimig

Sheet: /Board guide and engineering reference/Layer stackup and fabrication/
File: Stackup.kicad_sch

Title: AmiCube DEV1 / Edge / Layer stackup and fabrication

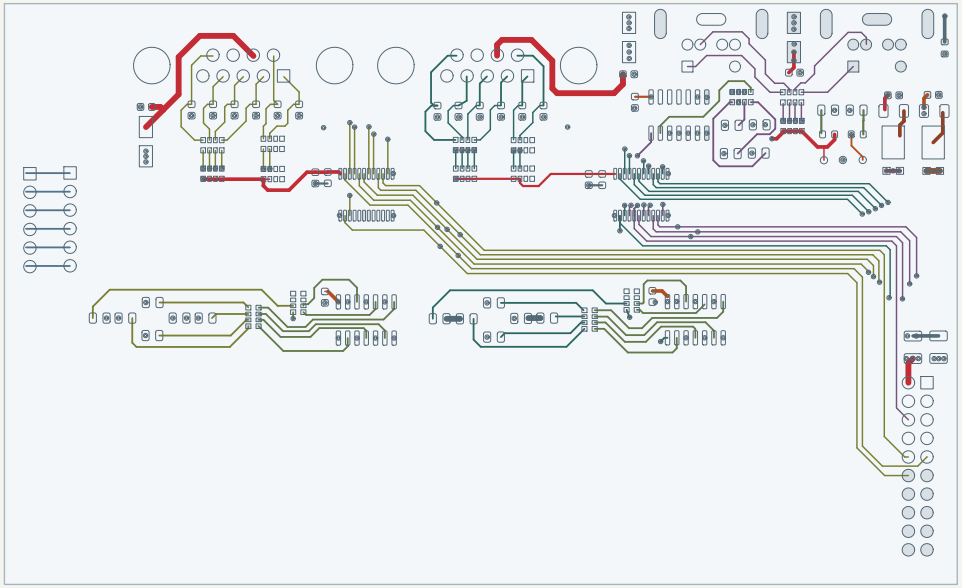
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KiCad E.D.A. 10.0.7 | Id: 11/13

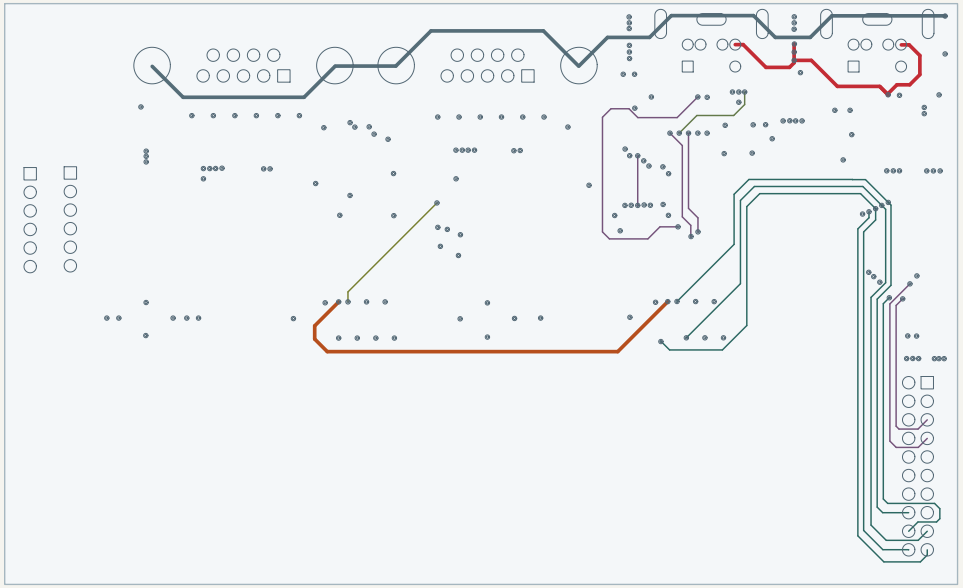
Routing guide

Outer copper from saved tracks, pads and vias. Filled zones are omitted for clarity.

Front copper



Back copper / through-board view



Colours identify net function. Grey pads and vias retain the saved geometry. Use native PCB layers for inner copper, zone fills and fabrication output.

Ranko Rodic / Minimig.ca | Precision-Arrays

2.4 • generated 2026-10-16 • source c3f4478de0cd

Units: mm. Source CAD governs. Regenerate after design changes.

Documentation only; no electrical symbols

Minimig.ca / Minimig

Sheet: /Board guide and engineering reference/Routing guide/
File: Routing.kicad_sch

Title: AmiCube DEV1 / Edge / Routing guide

Size: A4	Date: 2026-10-16	Rev: 2.4
KiCad E.D.A. 10.0.7		Id: 12/13

Power and signal identification

Shared functional colour families for schematic labels and PCB copper.

	GROUND	2		**JOYSTICK 2**	24
	POWER 5V	2		**PS2**	16
	POWER 3V3	2		**INDICATORS**	18
	POWER CONTROL	2		**EXPANSION**	6
	JOYSTICK 1	24			

Follow each signal through the hierarchy by its global net label. Bus aliases summarize cross-sheet signal groups; the HTML guide lists every alias and colour assignment.

PCB Editor: Appearance → Objects → Net colours → All. Colour-only VIS_ classes preserve the original track, via and clearance rules.

Ranko Rodic / Minimig.ca | Precision-Arrays

2.4 • generated 2026-10-16 • source c3f4478de0cd

Units: mm. Source CAD governs. Regenerate after design changes.

Documentation only; no electrical symbols
Minimig.ca / Minimig
Sheet: /Board guide and engineering reference/Power and signal identification/
File: PowerAndBuses.kicad_sch
Title: AmiCube DEV1 / Edge / Power and signal identification
Size: A4 | Date: 2026-10-16 | Rev: 2.4
KiCad E.D.A. 10.0.7 | Id: 13/13