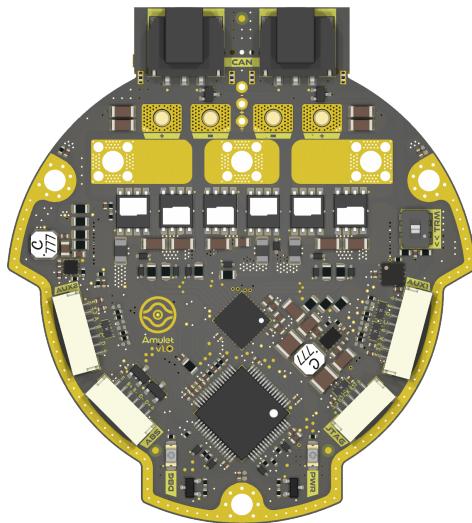
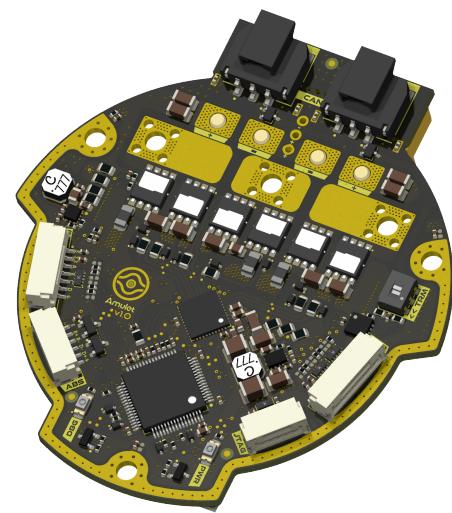


# Amulet Motion Controller Fabrication Document

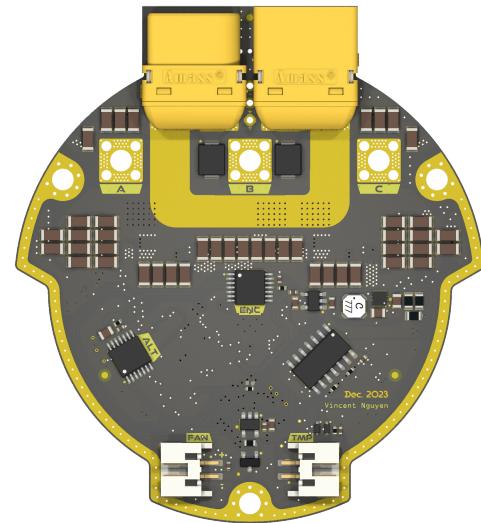
A

**Top View**

B



C

**Bottom View**

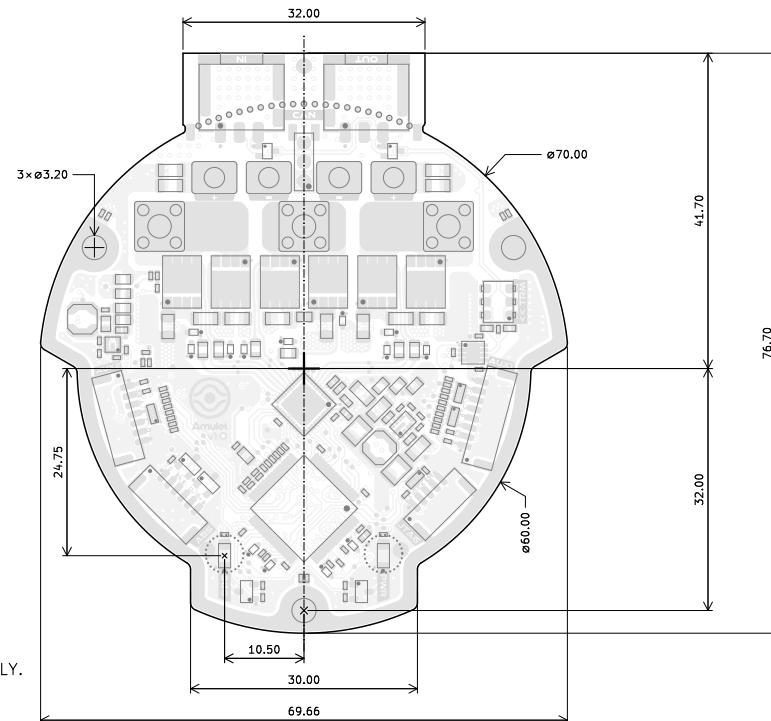
D



|  |   |   |   |   |
|--|---|---|---|---|
|  | Comments:   | Company:<br>EPFL Xplore Research          | Variant:<br>Preliminary   |   |
|  | Board Name:<br><b>Amulet Motion Controller</b>    | Project Name:<br><b>Chienpanzé</b>        |   |   |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen                                     |   |
|  | Sheet Path:                                       |   | Reviewers:<br>Size:<br><b>A4</b> Sheet:<br><b>1</b> of <b>1</b> | Date:<br>2023-12-23      Revision:<br>1.0 |

# Amulet Motion Controller Fabrication Document

## Dimensions Top



### FABRICATION NOTES (UNLESS OTHERWISE SPECIFIED)

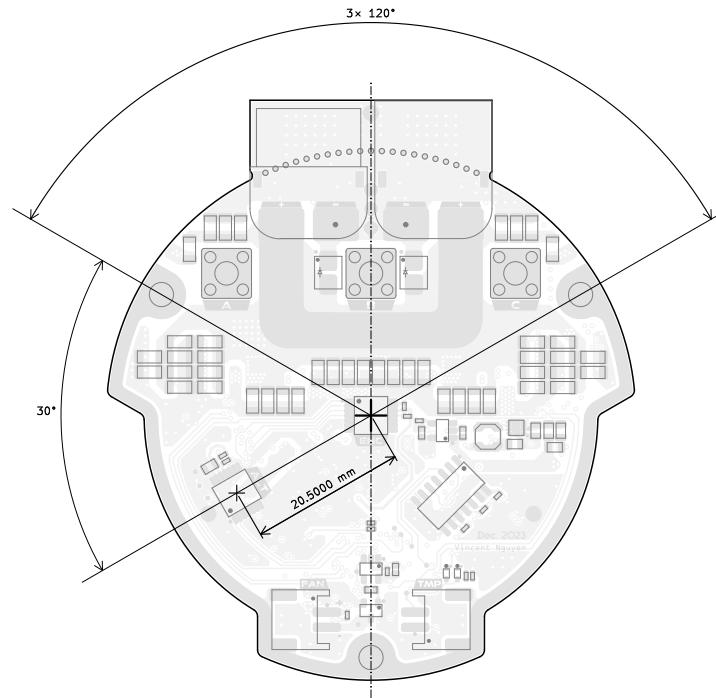
- 1) OUTLINE DEFINED IN SEPARATE GERBER FILE WITH ".GM1" SUFFIX.  
DIMENSIONS OF CIRCUMSIZED RECTANGLE SHOWN ON THIS DWG FOR REF ONLY.
- 2) SEE SEPARATE DRILL FILE FOR HOLE LOCATIONS.  
SELECTED HOLE LOCATIONS SHOWN ON THIS DWG FOR REF ONLY.

All dimensions are in millimeters unless otherwise specified.

|  |   |   |  |
|--|---|---|--|
|  | Comments:   | Company:<br><b>EPFL Xplore Research</b>   | Variant:<br> <b>Preliminary</b> |
|  | Board Name:<br><b>Amulet Motion Controller</b>    |   | Project Name:<br><b>Chienpanzé</b>   |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen  |
|  | Sheet Path:                                       | Reviewer:                                 | Date: 2023-12-23 Revision: 1.0   |
|  |   |   | Size: <b>A4</b> Sheet: <b>1</b> of <b>1</b>  |

# Amulet Motion Controller Fabrication Document

## Dimensions Bottom



All dimensions are in millimeters unless otherwise specified.

|  |   |   |   |
|--|---|---|---|
|  | Comments:   | Company:<br>EPFL Xplore Research          |  Variant:<br>Preliminary |
|  | Board Name:<br><b>Amulet Motion Controller</b>    |   | Project Name:<br><b>Chienpanzé</b>  |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen   |
|  | Sheet Path:                                       | Reviewer:                                 | Date: 2023-12-23 Revision: 1.0  |
|  |   |   | Size: <b>A4</b> Sheet: <b>1</b> of <b>1</b>   |

# Amulet Motion Controller Fabrication Document

A

## Layer Stack Legend

| Material | Layer         | Thickness     | Dielectric Material               | Type                                  | Gerber                   |
|----------|---------------|---------------|-----------------------------------|---------------------------------------|--------------------------|
| Copper   | L1 (Sig. PWR) | 0.07mm (2oz)  | F.Paste<br>F.Silkscreen<br>F.Mask | Paste Mask<br>Legend<br>Solder Resist | GTP<br>GTO<br>GTS        |
| Prepreg  | L2 (GND)      | 0.18mm        | FR-4                              | Dielectric                            | GTL                      |
| Core     | L3 (Sig. PWR) | 0.035mm (1oz) | FR-4                              | Internal Plane                        | G2                       |
| Copper   | L4 (Sig. PWR) | 0.035mm (1oz) | FR-4                              | Signal                                | G3                       |
| Prepreg  | L5 (GND)      | 0.18mm        | FR-4                              | Dielectric                            | G4                       |
| Core     | L6 (Sig. PWR) | 0.035mm (1oz) | FR-4                              | Internal Plane                        | G5                       |
| Copper   | L7 (Sig. PWR) | 0.07mm (2oz)  | B.Mask<br>B.Silkscreen<br>B.Paste | Solder Resist<br>Legend<br>Paste Mask | GBL<br>GBS<br>GBO<br>GBP |

Total thickness: 1.62mm

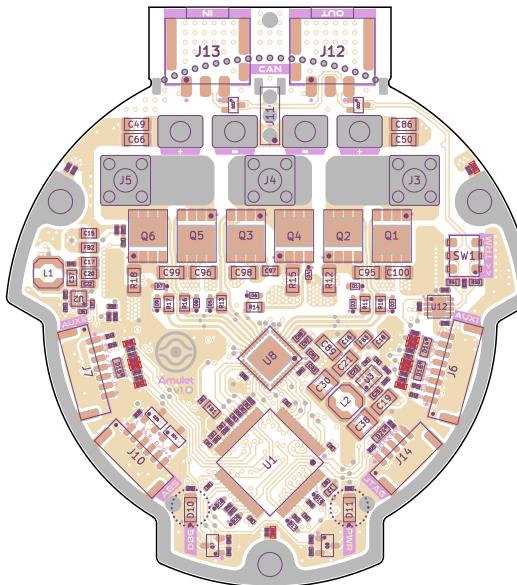
Note: external layer thicknesses are specified after plating.

## FABRICATION NOTES (CONT.)

- 3) IMPEDANCE CONTROL REQUIRED.  
Microstrip 100-Ohm Differential (L1 ref. L2, L6 ref. L5)  
0.2032mm width, 0.28mm spacing
- 4) CONFIRM TRACE WIDTHS AND SPACINGS. ADJUST STACKUP AS NECESSARY.
- 5) DESIGN GEOMETRY MINIMUM FEATURE SIZES:  

|                    |         |                      |          |
|--------------------|---------|----------------------|----------|
| TRACE WIDTH        | 0.20 mm | TRACE TO TRACE       | 0.20 mm  |
| MIN. HOLE (plated) | 0.25 mm | MIN. HOLE (unplated) | 0.70 mm  |
| ANNULAR RING       | 0.15 mm | COPPER TO HOLE       | 0.254 mm |
| COPPER TO EDGE     | 0.25 mm | HOLE TO HOLE         | 0.254 mm |

## Assembly Top



C

|  |  |  |                                   |                             |                      |            |               |
|--|--|--|-----------------------------------|-----------------------------|----------------------|------------|---------------|
|  |  |  | Comments:                         | Company:                    | EFRL Xplore Research | Variant:   | Preliminary   |
|  |  |  | Board Name:                       |                             |                      |            |               |
|  |  |  | <b>Amulet Motion Controller</b>   |                             |                      |            |               |
|  |  |  | Sheet Title:                      | File Name:                  | Designer:            | Date:      | Revision:     |
|  |  |  | Amulet Motion Controller Assembly | amulet_controller.kicad_pcb | Vincent Nguyen       | 2023-12-23 | 1.0           |
|  |  |  | Sheet Path:                       | Reviewer:                   |                      | Size:      | Sheet:        |
|  |  |  |                                   |                             |                      | <b>A4</b>  | <b>1 of 1</b> |

# Amulet Motion Controller Fabrication Document

A

A

B

B

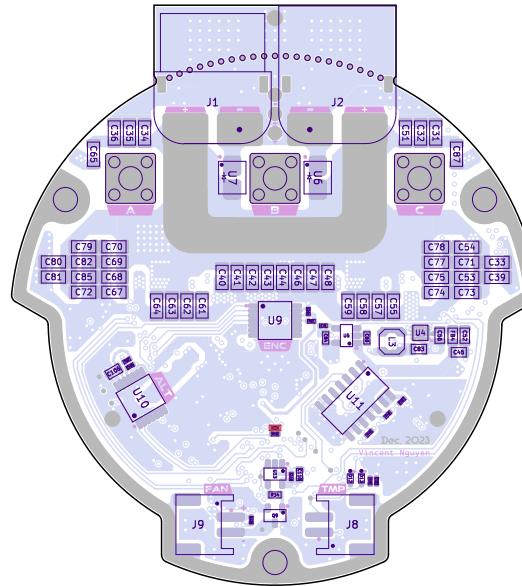
C

C

D

D

**Assembly Bottom**



|  |   |  |  |
|--|---|--|--|
|  | Comments:   | Company:<br>EPFL Xplore Research               | <br>Variant:<br>Preliminary |
|  |   | Board Name:<br><b>Amulet Motion Controller</b> |  |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb      | Designer:<br>Vincent Nguyen  |
|  | Sheet Path:                                       | Reviewer:                                      | Date: 2023-12-23      Revision: 1.0  |
|  |   |  | Size: <b>A4</b> Sheet: <b>1</b> of <b>1</b>  |

# Amulet Motion Controller Fabrication Document

A

A

B

B

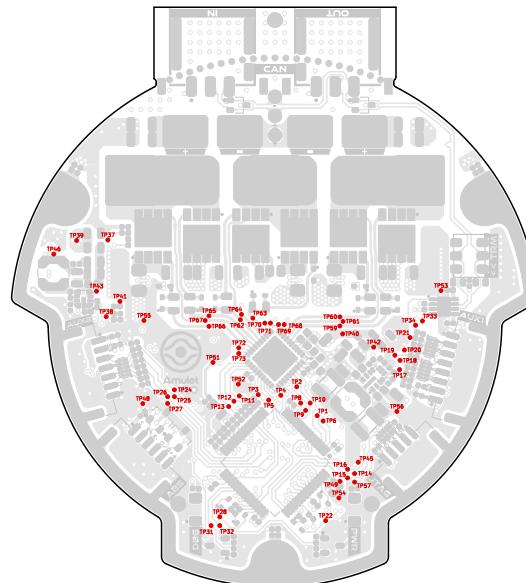
C

C

D

D

## Test Points Top



|  |   |   |   |
|--|---|---|---|
|  | Comments:   | Company:<br>EPFL Xplore Research          | Variant:<br>Preliminary                     |
|  | Board Name:<br><b>Amulet Motion Controller</b>    |   | Project Name:<br><b>Chienpanzé</b>          |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen                 |
|  | Sheet Path:                                       | Reviewer:                                 | Date: 2023-12-23      Revision: 1.0         |
|  |   |   | Size: <b>A4</b> Sheet: <b>1</b> of <b>1</b> |

# Amulet Motion Controller Fabrication Document

A

A

B

B

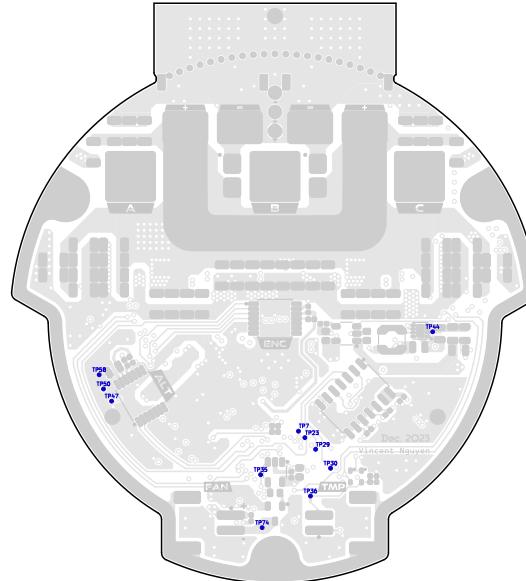
C

C

D

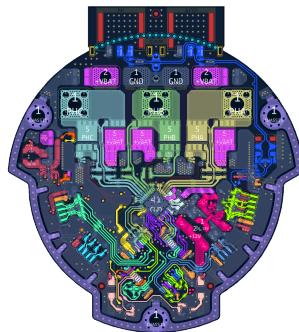
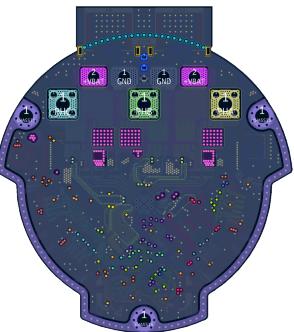
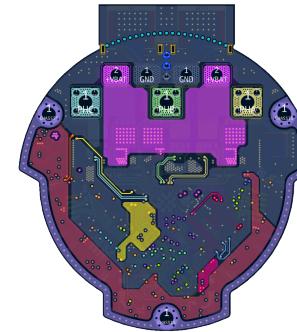
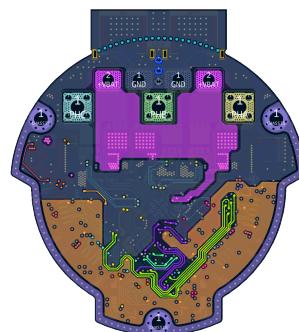
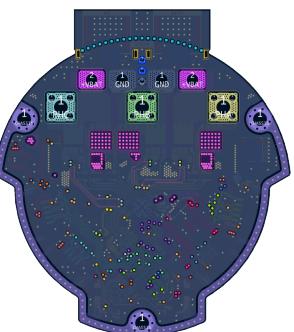
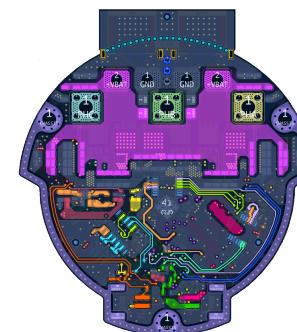
D

## Test Points Bottom



|  |   |   |  |
|--|---|---|--|
|  | Comments:   | Company:<br>EPFL Xplore Research          | Variant:<br>Preliminary                        |
|  | Board Name:<br><b>Amulet Motion Controller</b>    | Project Name:<br><b>Chienpanzé</b>        |  |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen                    |
|  | Sheet Path:                                       | Reviewer:                                 | Size: <b>A4</b> Sheet:<br><b>1</b> of <b>1</b> |

# Amulet Motion Controller Fabrication Document

**L1 (SIG/PWR)****L2 (GND)****L3 (SIG/PWR)****L4 (SIG/PWR)****L5 (GND)****L6 (SIG/PWR)**

A

A

B

B

C

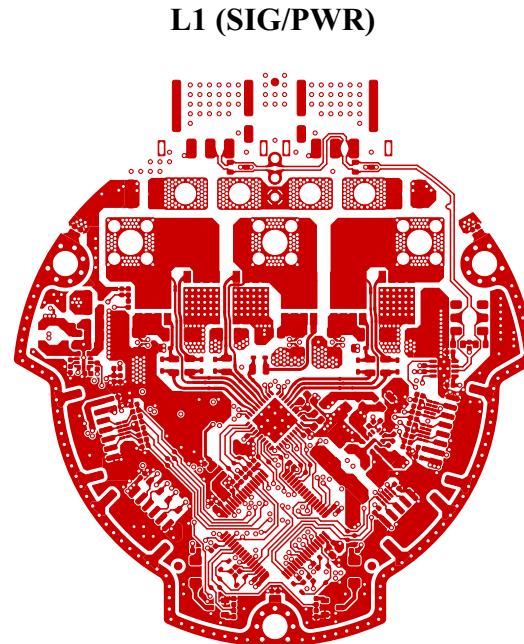
C

D

D

|  |   |   |   |
|--|---|---|---|
|  | Comments:   | Company:<br>EPFL Xplore Research          |  Variant:<br>Preliminary |
|  | Board Name:<br><b>Amulet Motion Controller</b>    |   | Project Name:<br><b>Chienpanzé</b>  |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen   |
|  | Sheet Path:                                       | Reviewer:                                 | Date: 2023-12-23 Revision: 1.0  |
|  |   |   | Size: A4 Sheet: 1 of 1  |

# Amulet Motion Controller Fabrication Document



|  |   |   |   |
|--|---|---|---|
|  | Comments:   | Company:<br><b>EPFL Xplore Research</b>   | Variant:<br> Preliminary |
|  | Board Name:<br><b>Amulet Motion Controller</b>    | Project Name:<br><b>Chienpanzé</b>        |   |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen   |
|  | Sheet Path:                                       | Reviewer:                                 | Date: 2023-12-23 Revision: 1.0  |
|  |   |   | Size: <b>A4</b> Sheet: <b>1</b> of <b>1</b>   |

# Amulet Motion Controller Fabrication Document

A

A

B

B

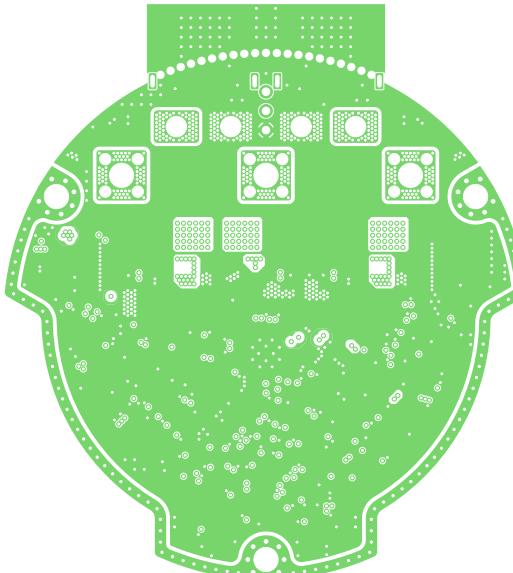
C

C

D

D

**L2 (GND)**



|  |   |   |  |                     |                  |
|--|---|---|--|---------------------|------------------|
|  | Comments:   | Company:<br>EPFL Xplore Research          | Variant:<br>Preliminary                                    |                     |                  |
|  | Board Name:<br><b>Amulet Motion Controller</b>    | Project Name:<br><b>Chienpanzé</b>        |  |                     |                  |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen                                |                     |                  |
|  | Sheet Path:                                       |   | Reviewers:<br><br><b>A4</b> Sheet:<br><b>1</b> of <b>1</b> | Date:<br>2023-12-23 | Revision:<br>1.0 |

## Amulet Motion Controller Fabrication Document

A

A

B

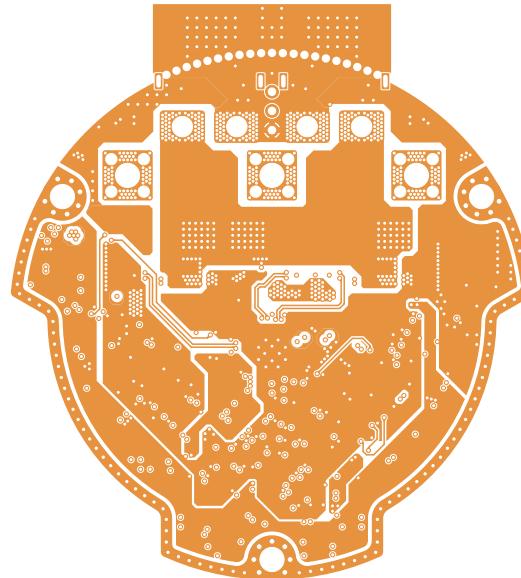
B

C

C

D

D

**L3 (SIG/PWR)**

|  |   |   |   |
|--|---|---|---|
|  | Comments:   | Company:<br><b>EPFL Xplore Research</b>   | Variant:<br> Preliminary |
|  | Board Name:<br><b>Amulet Motion Controller</b>    | Project Name:<br><b>Chienpanzé</b>        |   |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen   |
|  | Sheet Path:                                       | Reviewer:                                 | Date: 2023-12-23 Revision: 1.0  |
|  |   |   | Size: <b>A4</b> Sheet: <b>1</b> of <b>1</b>   |

# Amulet Motion Controller Fabrication Document

A

A

B

B

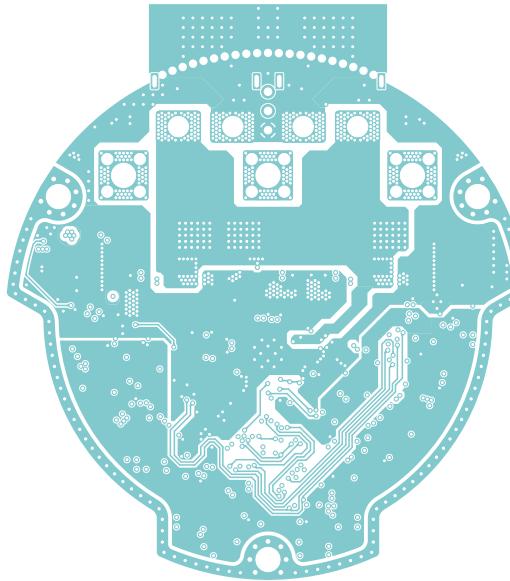
C

C

D

D

**L4 (SIG/PWR)**



|  |   |   |   |
|--|---|---|---|
|  | Comments:   | Company:<br><b>EPFL Xplore Research</b>   | Variant:<br> Preliminary |
|  | Board Name:<br><b>Amulet Motion Controller</b>    | Project Name:<br><b>Chienpanzé</b>        |   |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen   |
|  | Sheet Path:                                       | Reviewer:                                 | Date: 2023-12-23 Revision: 1.0  |
|  |   |   | Size: <b>A4</b> Sheet: <b>1</b> of <b>1</b>   |

# Amulet Motion Controller Fabrication Document

A

A

B

B

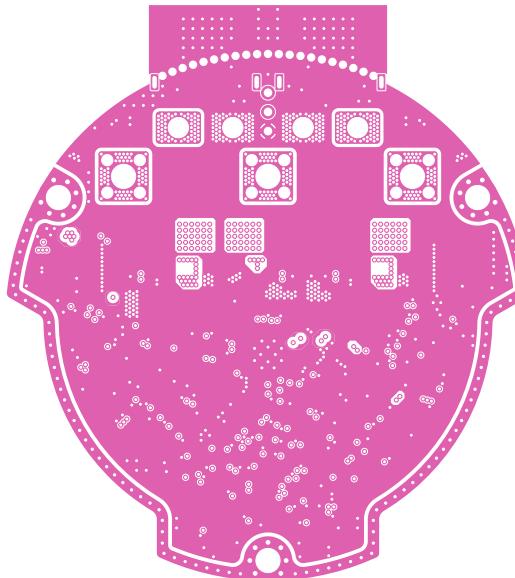
C

C

D

D

**L5 (GND)**



|  |   |   |  |
|--|---|---|--|
|  | Comments:   | Company:<br><b>EPFL Xplore Research</b>   | Variant:<br>Preliminary                                |
|  | Board Name:<br><b>Amulet Motion Controller</b>    | Project Name:<br><b>Chienpanzé</b>        |  |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen                            |
|  | Sheet Path:                                       |   | Reviewers:<br><b>A4</b> Sheet:<br><b>1</b> of <b>1</b> |

# Amulet Motion Controller Fabrication Document

A

A

B

B

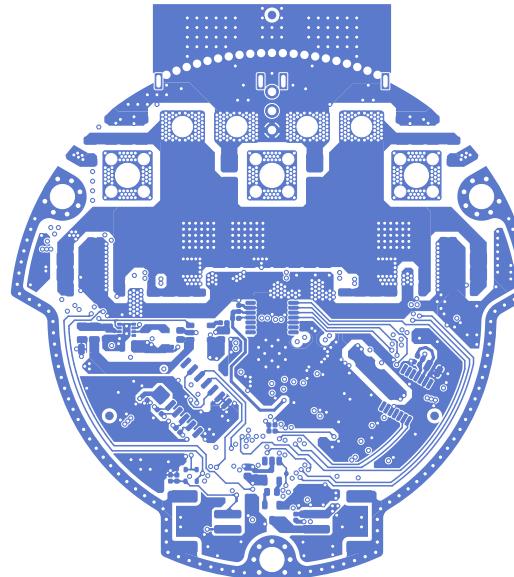
C

C

D

D

**L6 (SIG/PWR)**



|  |   |   |                                   |
|--|---|---|-----------------------------------|
|  | Comments:   | Company:<br>EPFL Xplore Research          | Variant:<br>Preliminary           |
|  | Board Name:<br><b>Amulet Motion Controller</b>    | Project Name:<br><b>Chienpanzé</b>        |                                   |
|  | Sheet Title:<br>Amulet Motion Controller Assembly | File Name:<br>amulet_controller.kicad_pcb | Designer:<br>Vincent Nguyen       |
|  | Sheet Path:                                       | Reviewer:                                 | Date: 2023-12-23<br>Revision: 1.0 |
|  |   | Size: A4                                  | Sheet: 1 of 1                     |