

# Watch-DevKit-HW Fabrication Document

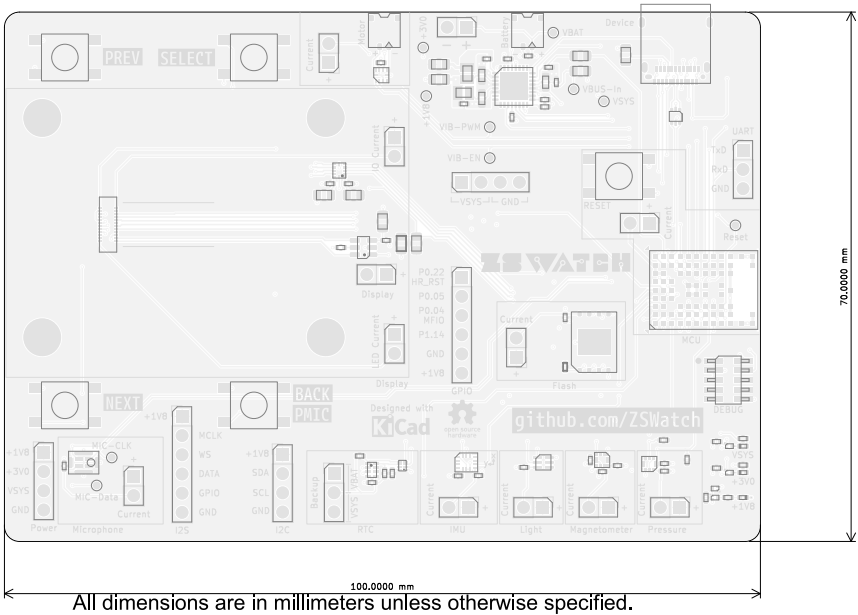
## Layer Stack Legend

|  | Material   | Layer        | Thickness        | Dielectric | Type        | Gerber |
|--|--|--------------|------------------|------------|-------------|--------|
|  | F,Paste  |              |                  |            | Paste Mask  |        |
|  | F,Silkscreen   |              |                  |            | Legend      | GBR    |
|  | F,Mask   |              | 0,01mm           |            | Solder Mask | GBR    |
|  | Copper   | F,Cu         | 0,035mm (1,00oz) |            | Signal      | GBR    |
|  | Core   |              | 0,196mm          | FR4        | Dielectric  |        |
|  | Copper   | Inner1 (GND) | 0,035mm (1,00oz) |            | Plane       | GBR    |
|  | Prepreg  |              | 1,03mm           | FR4        | Dielectric  |        |
|  | Copper   | Inner2       | 0,035mm (1,00oz) |            | Plane       | GBR    |
|  | Core   |              | 0,196mm          | FR4        | Dielectric  |        |
|  | Copper   | B,Cu         | 0,035mm (1,00oz) |            | Signal      | GBR    |
|  | B,Mask   |              | 0,01mm           |            | Solder Mask | GBR    |
|  | B,Silkscreen   |              |                  |            | Legend      | GBR    |
|  | B,Paste  |              |                  |            | Paste Mask  |        |
|  | Total thickness: 1,582mm<br>Note: external layer thicknesses are specified after plating |              |                  |            |             |        |

## Top Fabrication (Scale 1:1)

## Impedance Table

| Transmission Line | Impedance [ohms] | Tolerance [%] | Layer | Trace Width [mm] | Gap [mm] | Ref. Layers |
|-------------------|------------------|---------------|-------|------------------|----------|-------------|
|-------------------|------------------|---------------|-------|------------------|----------|-------------|



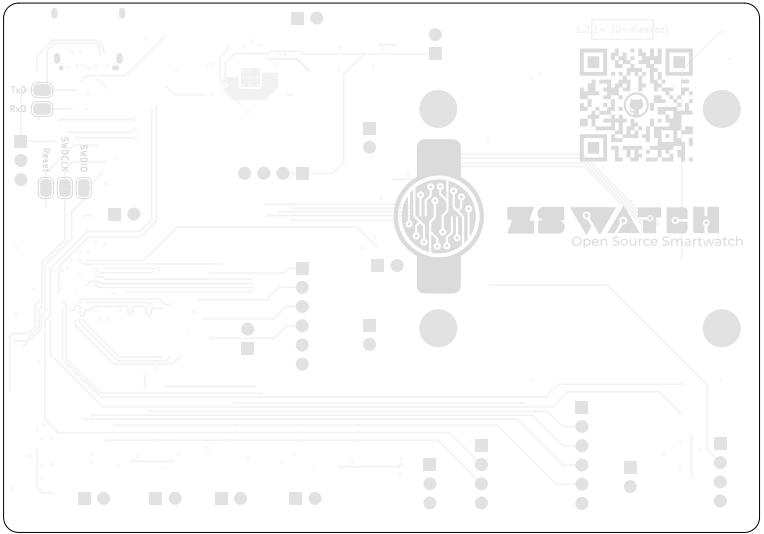
### FABRICATION NOTES (UNLESS OTHERWISE SPECIFIED)

- FABRICATE PER IPC-6012A CLASS 2.
- OUTLINE DEFINED IN SEPARATE GERBER FILE WITH "Edge\_Cuts.GBR" SUFFIX.  
  
DIMENSIONS OF CIRCUMSIZED RECTANGLE SHOWN ON THIS DRAWING FOR REFERENCE ONLY.
- SEE SEPARATE DRILL FILES WITH ".DRL" SUFFIX FOR HOLE LOCATIONS.  
  
SELECTED HOLE LOCATIONS SHOWN ON THIS DRAWING FOR REFERENCE ONLY.
- SURFACE FINISH: HAL LEAD-FREE
- SOLDERMASK ON BOTH SIDES OF THE BOARD SHALL BE LPI, COLOR WHITE.
- SILK SCREEN LEGEND TO BE APPLIED PER LAYER STACKUP USING BLACK NON-CONDUCTIVE EPOXY INK.
- ALL VIAS ARE TENTED ON BOTH SIDES UNLESS SOLDERMASK OPENED IN GERBER.
- VENDOR SHOULD FOLLOW ROHS COMPLIANT PROCESS AND Pb FREE FOR MANUFACTURING
- PCB MATERIAL REQUIREMENTS:  
  
A. FLAMMABILITY RATING MUST MEET OR EXCEED UL94V-0 REQUIREMENTS.  
B. Tg 150 C OR EQUIVALENT.
- DESIGN GEOMETRY MINIMUM FEATURE SIZES:  
  
BOARD SIZE 100,000 × 70,000 mm  
BOARD THICKNESS 1,582 mm  
TRACE WIDTH 0,127 mm  
TRACE TO TRACE 0,125 mm  
MIN. HOLE (PTH) 0,250 mm  
MIN. HOLE (NPTH) 0,650 mm  
ANNULAR RING 0,100 mm  
COPPER TO HOLE 0,125 mm  
COPPER TO EDGE 0,125 mm  
HOLE TO HOLE 0,250 mm

|  |   |  |                             |                                       |                                  |
|--|---|--|-----------------------------|---------------------------------------|----------------------------------|
|  | Comments:<br>ZSWatch                        | Company:<br>ZSWatch                          |                             | Variant:<br>PRELIMINARY               | Git Hash:<br>fcf9da1             |
|  |   | Board Name:<br>Watch-DevKit-HW               |                             | Project Name:<br>ZSWatch Watch-DevKit |                                  |
|  | Sheet Title:<br>Top Fabrication (Scale 1:1) | File Name:<br>ZSWatch-Watch-DevKit.kicad_pcb | Designer:<br>Daniel Kampert | Date:<br>2025-07-13                   | Revision:<br>1.2.1+ (Unreleased) |
|  | Sheet Path:                                 |  | Reviewer:                   | Size:<br>A3                           | Sheet:<br>1 of 10                |

Watch-DevKit-HW Fabrication Document

Bottom Fabrication (Scale 1:1)



All dimensions are in millimeters unless otherwise specified.

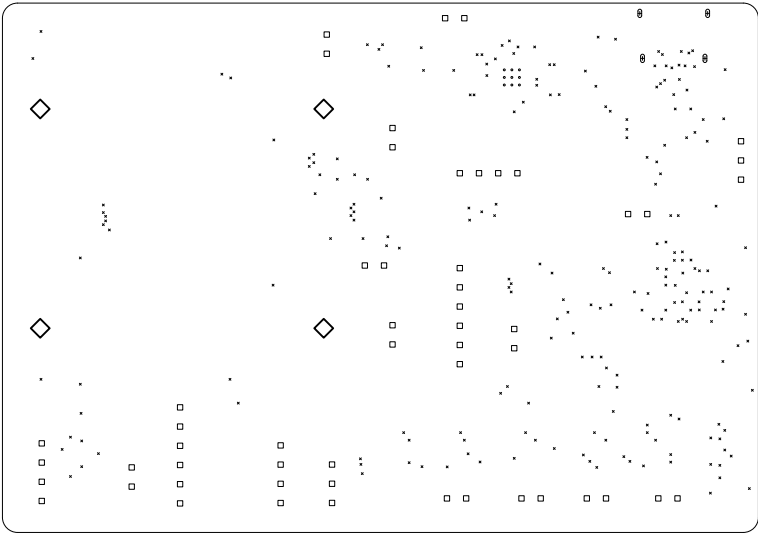
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|  | Comments:<br>ZSWatch                           | Company:<br>ZSWatch                          |                             | Variant:<br>PRELIMINARY               | Git Hash:<br>fcf9da1             |
|  |  | Board Name:<br>Watch-DevKit-HW               |                             | Project Name:<br>ZSWatch Watch-DevKit |                                  |
|  | Sheet Title:<br>Bottom Fabrication (Scale 1:1) | File Name:<br>ZSWatch-Watch-DevKit.kicad_pcb | Designer:<br>Daniel Kampert | Date:<br>2025-07-13                   | Revision:<br>1.2.1+ (Unreleased) |
|  | Sheet Path:                                    |  | Reviewer:                   | Size:<br>A3                           | Sheet:<br>2 of 10                |

# Watch-DevKit-HW Fabrication Document

## Drill Drawing L1 - L4 (Scale 1:1)

Drill Table

| Symbol | Count     | Hole Size          | Plated | Hole Shape | Drill Layer Pair | Hole Type |
|--------|-----------|--------------------|--------|------------|------------------|-----------|
| X      | 232       | 0,25mm (9,84mils)  | PTH    | Round      | F,Cu - B,Cu      | Via       |
| O      | 9         | 0,25mm (9,84mils)  | PTH    | Round      | F,Cu - B,Cu      | Pad       |
| +      | 4         | 0,50mm (19,69mils) | PTH    | Slot       | F,Cu - B,Cu      | Pad       |
| □      | 54        | 1,00mm (39,37mils) | PTH    | Round      | F,Cu - B,Cu      | Pad       |
| ◇      | 4         | 2,50mm (98,43mils) | PTH    | Round      | F,Cu - B,Cu      | Pad       |
|        | Total 303 |                    |        |            |                  |           |

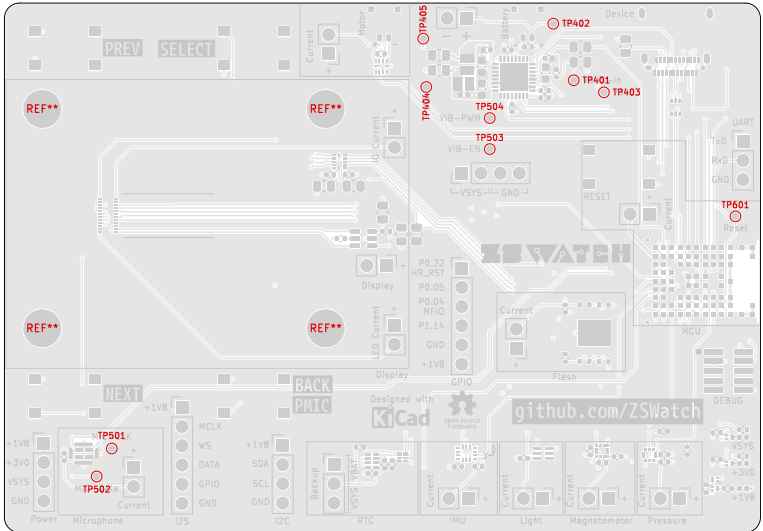


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|--|--|---|------------------------------------|--|---|
|  | <b>Comments:</b><br>ZSWatch                    | <b>Company:</b><br>ZSWatch                          |                                    | <b>Variant:</b><br>PRELIMINARY               | <b>Git Hash:</b><br>fcf9da1             |
|  |  | <b>Board Name:</b><br>Watch-DevKit-HW               |                                    | <b>Project Name:</b><br>ZSWatch Watch-DevKit |   |
|  | <b>Sheet Title:</b><br>Drill Drawing (L1 - L4) | <b>File Name:</b><br>ZSWatch-Watch-DevKit.kicad_pcb | <b>Designer:</b><br>Daniel Kampert | <b>Date:</b><br>2025-07-13                   | <b>Revision:</b><br>1.2.1+ (Unreleased) |
|  | <b>Sheet Path:</b>                             |   | <b>Reviewer:</b>                   | <b>Size:</b><br>A3                           | <b>Sheet:</b><br>3 of 10                |



Watch-DevKit-HW Fabrication Document

Top Test Points (Scale 1:1)



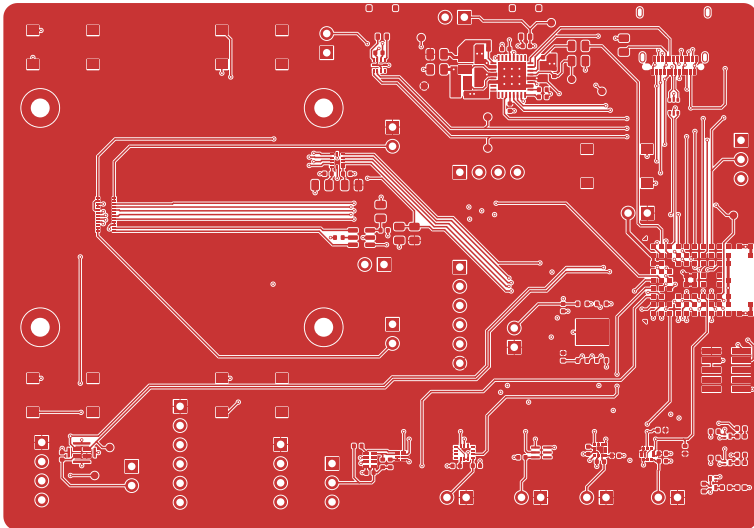
| Ref.  | Net      | X [mm] | Y [mm]  |
|-------|----------|--------|---------|
| TP401 | VBUS-In  | 233.30 | -124.20 |
| TP402 | VBAT     | 230.60 | -116.72 |
| TP403 | VSYS     | 237.30 | -125.80 |
| TP404 | +1V8     | 213.80 | -125.10 |
| TP405 | +3V0     | 213.40 | -118.70 |
| TP501 | MIC-CLK  | 172.20 | -172.90 |
| TP502 | MIC-DATA | 170.20 | -176.60 |
| TP503 | VIB-EN   | 222.20 | -133.30 |
| TP504 | VIB-PWM  | 222.20 | -129.20 |
| TP601 | RESETn   | 254.70 | -142.20 |

| Ref. | Net | X [mm] | Y [mm] |
|------|-----|--------|--------|
|------|-----|--------|--------|

|                      |   |  |                                       |                                  |
|----------------------|---|--|---------------------------------------|----------------------------------|
| Comments:<br>ZSWatch | Company:<br>ZSWatch                         |  | Variant:<br>PRELIMINARY               | Git Hash:<br>fcf9da1             |
|                      | Board Name:<br>Watch-DevKit-HW              |  | Project Name:<br>ZSWatch Watch-DevKit |                                  |
|                      | Sheet Title:<br>Top Test Points (Scale 1:1) | File Name:<br>ZSWatch-Watch-DevKit.kicad_pcb | Designer:<br>Daniel Kampert           | Date:<br>2025-07-13              |
| Sheet Path:          |   |  | Reviewer:                             | Size:<br>A3                      |
|                      |   |  |                                       | Revision:<br>1.2.1+ (Unreleased) |
|                      |   |  |                                       | Sheet:<br>5 of 10                |

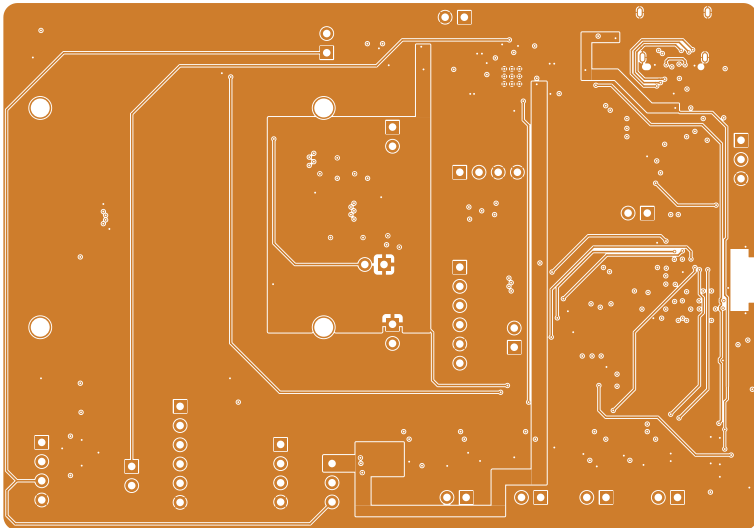
|   |  |   |   |   |   |   |   |   |
|---|--|---|---|---|---|---|---|---|
|   | 1  | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| A | <div> <div>Watch-DevKit-HW Fabrication Document</div> </div> |   |   |   |   |   |   |   |
| B | <div> <div>Bottom Test Points (Scale 1:1)</div> </div>       |   |   |   |   |   |   |   |
| C | <div> </div>   |   |   |   |   |   |   |   |
| D |  |   |   |   |   |   |   |   |
| E |  |   |   |   |   |   |   |   |
| F | 1  | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

|  |                                |                                |                |                      |                     |
|--|--------------------------------|--------------------------------|----------------|----------------------|---------------------|
|  | Comments:                      | Company:                       |                | Variant:             | Git Hash:           |
|  | ZSWatch                        | ZSWatch                        |                | PRELIMINARY          | fcf9da1             |
|  |                                | Board Name:                    |                | Project Name:        |                     |
|  |                                | Watch-DevKit-HW                |                | ZSWatch Watch-DevKit |                     |
|  | Sheet Title:                   | File Name:                     | Designer:      | Date:                | Revision:           |
|  | Bottom Test Points (Scale 1:1) | ZSWatch-Watch-DevKit.kicad_pcb | Daniel Kampert | 2025-07-13           | 1.2.1+ (Unreleased) |
|  | Sheet Path:                    |                                | Reviewer:      | Size:                | Sheet:              |
|  |                                |                                |                | A3                   | 6 of 10             |

|  |  |                                  |  |  |           |                                       |                      |                                  |
|--|--|----------------------------------|--|--|-----------|---------------------------------------|----------------------|----------------------------------|
| Watch-DevKit-HW Fabrication Document   |  |                                  |  |  |           |                                       |                      |                                  |
| F.Cu (Scale 1:1)   |  |                                  |  |  |           |                                       |                      |                                  |
|  |  |                                  |  |  |           |                                       |                      |                                  |
|  |  | Comments:<br>ZSWatch             |  | Company:<br>ZSWatch                          |           | Variant:<br>PRELIMINARY               | Git Hash:<br>fcf9da1 |                                  |
|  |  |                                  |  | Board Name:<br>Watch-DevKit-HW               |           | Project Name:<br>ZSWatch Watch-DevKit |                      |                                  |
|  |  | Sheet Title:<br>F.Cu (Scale 1:1) |  | File Name:<br>ZSWatch-Watch-DevKit.kicad_pcb |           | Designer:<br>Daniel Kampert           | Date:<br>2025-07-13  | Revision:<br>1.2.1+ (Unreleased) |
|  |  | Sheet Path:                      |  |  | Reviewer: |                                       | Size:<br>A3          | Sheet:<br>7 of 10                |

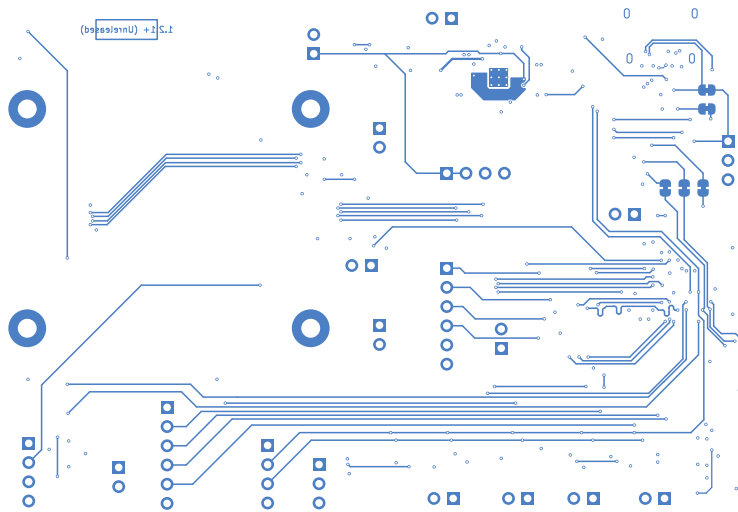
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|--|--|--|--|--|--|-----------|---------------------------------------|----------------------|----------------------------------|
| Watch-DevKit-HW Fabrication Document   |  |  |  |  |  |           |                                       |                      |                                  |
| Inner1 (GND) (Scale 1:1)   |  |  |  |  |  |           |                                       |                      |                                  |
|  |  |  |  |  |  |           |                                       |                      |                                  |
|  |  |  | Comments:<br>ZSWatch                     |  | Company:<br>ZSWatch                          |           | Variant:<br>PRELIMINARY               | Git Hash:<br>fcf9da1 |                                  |
|  |  |  |  |  | Board Name:<br>Watch-DevKit-HW               |           | Project Name:<br>ZSWatch Watch-DevKit |                      |                                  |
|  |  |  | Sheet Title:<br>Inner1 (GND) (Scale 1:1) |  | File Name:<br>ZSWatch-Watch-DevKit.kicad_pcb |           | Designer:<br>Daniel Kampert           | Date:<br>2025-07-13  | Revision:<br>1.2.1+ (Unreleased) |
|  |  |  | Sheet Path:                              |  |  | Reviewer: |                                       | Size:<br>A3          | Sheet:<br>8 of 10                |



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|--|--|--|------------------------------------|--|--|-----------|---------------------------------------|----------------------|----------------------------------|
| Watch-DevKit-HW Fabrication Document   |  |  |                                    |  |  |           |                                       |                      |                                  |
| Inner2 (Scale 1:1)   |  |  |                                    |  |  |           |                                       |                      |                                  |
|  |  |  |                                    |  |  |           |                                       |                      |                                  |
|  |  |  | Comments:<br>ZSWatch               |  | Company:<br>ZSWatch                          |           | Variant:<br>PRELIMINARY               | Git Hash:<br>fcf9da1 |                                  |
|  |  |  |                                    |  | Board Name:<br>Watch-DevKit-HW               |           | Project Name:<br>ZSWatch Watch-DevKit |                      |                                  |
|  |  |  | Sheet Title:<br>Inner2 (Scale 1:1) |  | File Name:<br>ZSWatch-Watch-DevKit.kicad_pcb |           | Designer:<br>Daniel Kampert           | Date:<br>2025-07-13  | Revision:<br>1.2.1+ (Unreleased) |
|  |  |  | Sheet Path:                        |  |  | Reviewer: |                                       | Size:<br>A3          | Sheet:<br>9 of 10                |

Watch-DevKit-HW Fabrication Document

B.Cu (Scale 1:1)



|  |   |  |   |                                    |  |   |
|--|---|--|---|------------------------------------|--|---|
|  | <b>Comments:</b><br>ZSWatch             |  | <b>Company:</b><br>ZSWatch                          |                                    | <b>Variant:</b><br>PRELIMINARY               | <b>Git Hash:</b><br>fcf9da1             |
|  |   |  | <b>Board Name:</b><br>Watch-DevKit-HW               |                                    | <b>Project Name:</b><br>ZSWatch Watch-DevKit |   |
|  | <b>Sheet Title:</b><br>B.Cu (Scale 1:1) |  | <b>File Name:</b><br>ZSWatch-Watch-DevKit.kicad_pcb | <b>Designer:</b><br>Daniel Kampert | <b>Date:</b><br>2025-07-13                   | <b>Revision:</b><br>1.2.1+ (Unreleased) |
|  | <b>Sheet Path:</b>                      |  |   | <b>Reviewer:</b>                   | <b>Size:</b><br>A3                           | <b>Sheet:</b><br>10 of 10               |