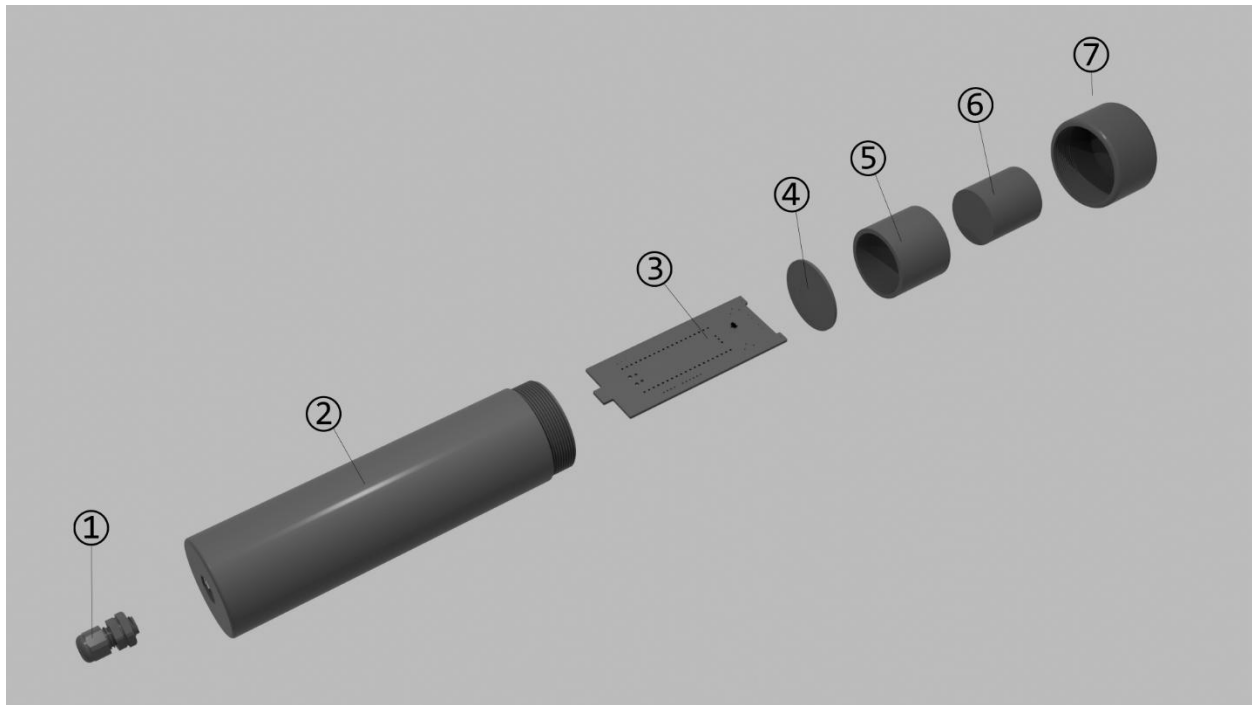


OpenGammaKit

Assembly Guide v0.1.3

Exploded Assembly View



Parts List

1. **Cable gland**
2. **Enclosure tube**
3. **Main board**
4. **SiPM board**
5. **Spacer ring**
6. **Scintillation crystal NaI(Tl)**
7. **End cap**

Assembly Sequence

1. Print the enclosure **enclosure tube (2)**, **inner support ring (6)**, **end cap (7)**. Use 3d printing settings from **Appendix A**.
2. **Insert the USB cable** (3.5 mm diameter) through the **cable gland (1)**.
3. **Solder the USB Micro connector** to the cable, adding a **4.7 – 5.1 k Ω resistor** between the **CC** (Configuration Channel) and GND pins (see **Appendix B**).
4. **Feed the cable** with the connector through the **enclosure tube (2)**.

5. **Secure the cable gland (1)** inside the enclosure to hold the cable firmly in place.
 6. **Solder the SiPM board (4)** to the **main board (3)** and connect it to the **USB Micro connector**.
 7. **Insert the main board (3)** into the internal guide slots of the **enclosure tube (2)**, pulling the cable through the cable gland.
 - The **SiPM board** should rest precisely on the **inner support ring (6)** inside the enclosure.
 - The **SiPM sensor** must face **outward** from the enclosure.
 8. **Tighten the cable gland** on the outside of the enclosure.
 9. **Apply a small drop of silicone oil** to the surface of the SiPM to ensure good optical coupling.
 10. **Insert the spacer ring (5)** into the upper part of the enclosure.
 11. **Place the NaI(Tl) scintillation crystal (6)** inside the spacer ring.
 12. **Screw the end cap (7)** onto the top of the enclosure with light tension—tight enough to secure the crystal without applying excessive force.
 13. **(Optional – Light Shielding):**
If the enclosure is made of **optically transparent plastic**, the SiPM must be protected from external light exposure.
 - Slide a **black heat-shrink tube (50 mm diameter)** over the assembled enclosure.
 - **Gently heat** the shrink tubing to fit snugly, taking care **not to overheat or deform** the plastic enclosure.
-

Notes

- Ensure that all solder joints are clean and free of flux residues.
- Avoid touching the surface of the SiPM or the crystal directly—use gloves or optical tissue if necessary.
- Verify correct alignment before sealing the enclosure.

Appendix A

Support

Enable support



Type

tree(auto)

Style

Default

Threshold angle

30°

On build plate only



Support critical regions only




Remove small overhangs



Top/bottom shells

Top surface pattern

 Monotonic ...

Top shell layers

7


Top shell thickness

0.8 mm

Top paint penetration layers

7

Bottom surface pattern

 Monotonic

Bottom shell layers

5

Bottom shell thickness

 4 mm

Bottom paint penetration layers

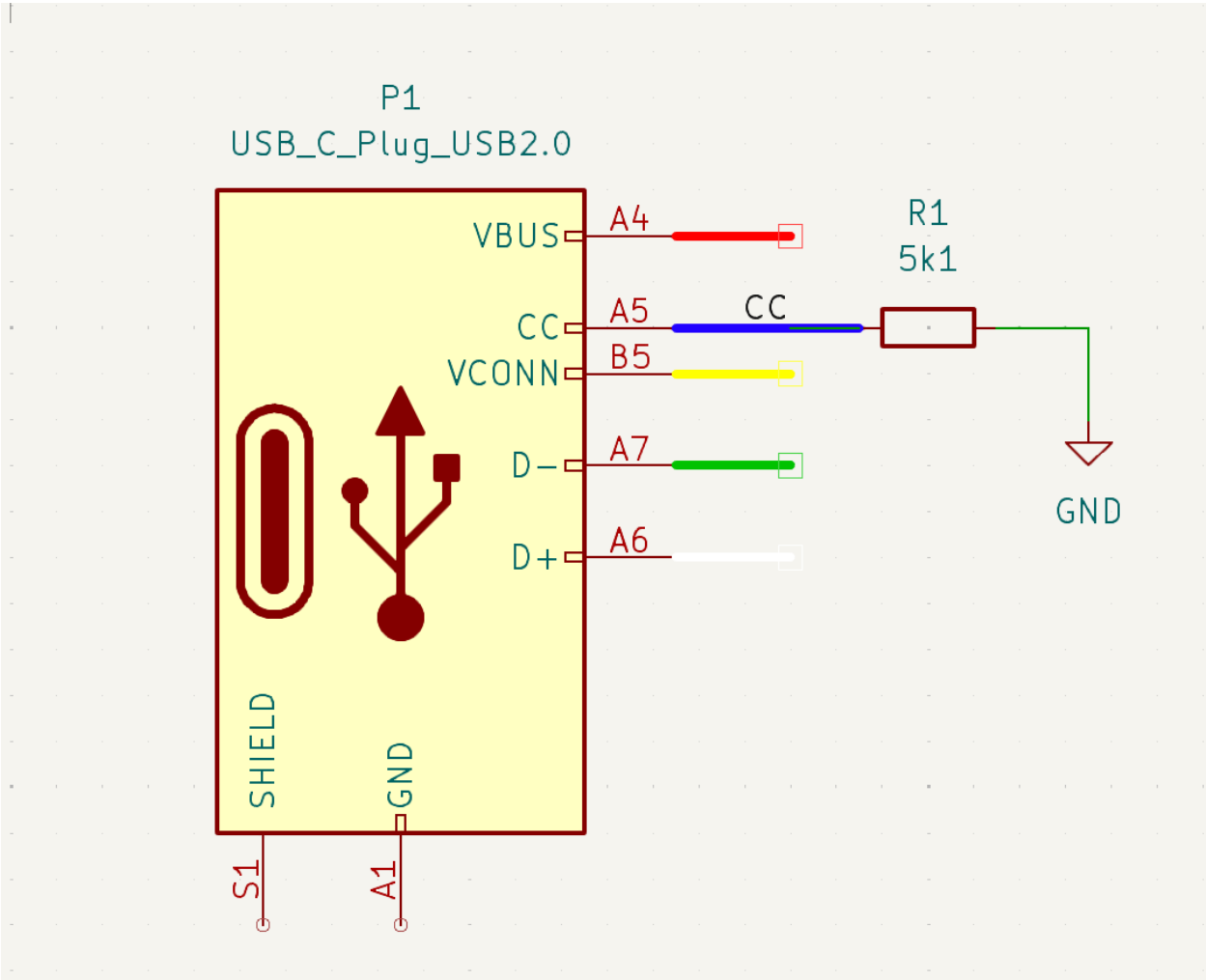
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Internal solid infill pattern

 Rectilinear

3D printing settings

Appendix B



USB Type-C Cable schema