

Engineering revision handoff

Engineering file ID 23.2 | SR1 builds on E1

23.2 SR1 adds mechanical switch retention following version 26's split-cage and removable-clamp principle. Version 26 itself is unchanged and was not requalified.

Partial internal rebuild. Review the represented geometry and listed changes. Remaining CAD and physical qualification are explicit below.

Body: 80 x 128 x 28.5 mm. Overall including modeled controls and recessed rear screws: 81.4 x 128 x 29.4 mm (width x height x depth).



Use these files first

00_Handoff.pdf explains scope and assembly. 01_Current_CAD contains the SR1 STEP assemblies and individual parts. BOM_Represented_Parts.csv identifies the represented part files; Rapid_Open_Items.csv lists unresolved work.

The primary package supersedes earlier files only for the SR1 represented geometry. Earlier documents and appearance films remain historical references.

Changes and evidence

CAD checks apply to the revised interfaces and their represented neighbours

What changed

- Added three side-switch cages to the insulating chassis with removable screwed rear keepers.
- Added narrow rigid pushers behind the metal caps and matched relief slots in the diaphragms, with nominal 0.14 mm rest gaps and 0.65 mm stops.
- Preserved continuous PCB support rails with shallow outboard relief and retained the E1 screwed front-switch plate.

What was checked

- 24 of 24 switch-body translation probes meet opposed retaining surfaces: four switches, six directions, 0.35 mm displacement.
- 18 side-button positions from 0 to 0.65 mm, 21 rear-loading positions, and six side-keeper screw-head envelopes checked.
- No unwanted static intersections above 0.0001 mm³ in the screened parts/hardware. STEP solids are valid; changed-part meshes are watertight.

Static or sampled rigid-body checks do not prove force, allowable switch overtravel, rocking, spring return, tolerance extremes, fatigue, electrical function or production readiness.

Assembly and service

Sequence for the changed interface; complete device assembly remains open

1. With rear cover, rear grip/lip, battery and PCB removed, fit side caps and pushers into the front structure. On 23.2 the relieved diaphragms and rigid pushers form a matched set.
2. Load each side switch rear-to-front, actuator outward. Keep terminals and wires in the relief slots. Fit its rear keeper using two M2 × 6 screws.
3. For 5.2, retain the front switch and calibrated shims in its cassette using the two corner bars and M2 × 5 low-head screws (head envelope Ø3.5 × 1.0 mm). Screw the cassette to its housing bosses. For 21.2B and 23.2 retain the existing screwed front reaction plate.
4. Install PCB, battery and harness without trapping wires; close the rear. Verify actual actuation, free return, end presses, screw access and switch limits before endurance testing.

Material and fastener assumptions

Confirm polymer and elastomer grades, manufacturing process, finished tolerances and surface treatment with the supplier. Modeled screw envelopes do not specify a purchased drive or thread profile. A 1.7 mm pilot, where used for M2, is a prototype assumption requiring process and torque qualification.

No adhesive or flexible gasket envelope is permission to print that layer as a rigid solid. Review the material role of every part. Nominal switch case bearing faces require actual dimensional and clamping checks.

Remaining work before release

These items are not marked passed by the new CAD or website publication

1. Measure actual switch free play, gap, travel, return and long-PTT centre/end actuation across manufacturing tolerances. The nominal 0.65 mm stop is not a certified switch overtravel limit.
2. Qualify M2 pilot preparation, thread engagement, torque, driver access, screw pull-out and keeper strength in the selected material.
3. Complete physical assembly with the actual harness; qualify electrical, acoustic, optical, RF, thermal, sealing and durability performance.
4. Complete inherited system work: 21.2B has no fully verified PCB/battery/harness layout; 23.2 retains unqualified diaphragm, PCB support, closure and USB assumptions; 5.2 retains its calibration and broader qualification requirements.

Manufacturing decision

Review and quote the current engineering work with these limitations. Select and verify the affected process and hardware before making functional parts. Complete the missing mechanical work, full assembly checks and physical fit prototype before approving a working device or production batch.

Version control

Use SR1 together with this handoff and its file inventory. Do not mix SR1 replacement components with earlier carriers, switches or untrimmed layers. The website preserves historical download URLs; those files are not the current engineering instruction.