

Engineering revision handoff

Engineering file ID 26 | E1 builds on v11.4

Recovered hidden source hardware and corrected LED, PCB support, button-travel, microphone and USB-access geometry while retaining Elian's exterior design.

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

Enclosure body: 78 x 150 x 29.5 mm. Overall with controls: 82.72 x 150 x 30.05 mm. Measured from supplied assembled-coordinate STL bounds; physical finish allowance is not included.



Use these files first

00_Handoff.pdf explains scope and assembly. 01_Current_CAD contains the E1 STEP and imported-solid Fusion assemblies. 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 E1 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 Earlier documents and appearance films remain historical references.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

- Recovered the installed source electronics from native Fusion; the earlier neutral assembly omitted them.
- Relocated the RGB LED sideways, added a removable clamp and a turning light guide, and relieved the old collector interference.
- Revised PCB bearing locations and button travel pockets; trimmed the PTT end beside USB.
- Aligned the microphone duct to the actual port and added a captured gasket envelope.
- Moved conservative USB access clearance to the measured receptacle-mouth axis.

What was checked

- Ten custom STEP parts are valid single solids. Sampled side travel through 0.65 mm and front travel through 0.70 mm clear fixed-body checks.
- The raw static report retains two LED screw/pilot thread-region intersections; these do not establish a qualified screw process.
- The conservative USB gauge still overlaps the PCB/mating region by about 59.001 mm³. Exact plug mating is unresolved.

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. Use the recovered installed hardware positions to inspect the revised case assembly.
2. Fit the side-facing LED into the split clamp with two M2 x 6 flat-head screw envelopes; avoid a tight bend next to the LED body.
3. Fit the turning light guide and verify light output on a physical sample.
4. Seat the microphone over its aligned duct using a qualified gasket; the CAD gasket is a compressed envelope.
5. Resolve switch rear reaction support and verify the selected USB cable before any functional build.

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. Switch reaction-bearing and body retention under load, particularly the front-switch rear support, need further engineering.
2. The USB gauge is not an exact selected plug; cable overmould, insertion depth and full seating need actual mating data.
3. Complete harness, fasteners, tolerance stack, wall/strength and assembly review remain open.
4. LED optics, microphone gasket compression, switch force, acoustics, RF and physical fit need qualification.

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 E1 together with this handoff and its file inventory. Do not mix E1 replacement components with earlier carriers, switches or untrimmed layers. The website preserves historical download URLs; those files are not the current engineering instruction.