

Concept 25.2

Compact / new Fusion concept

R1 | Rapid Product Solutions | Supplier brief

WIDTH (mm)	HEIGHT (mm)	DEPTH (mm)
90.4	138.4	28.8

Grip dimensions. Side controls extend overall width to 93.2 mm. 28.8 mm is depth; visible play face is 38 mm.

Inspiration photo

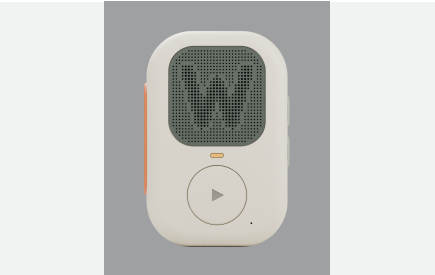


CAD assembly / R1



Appearance intent; CAD shows the current engineering proposal. Views are not to scale.

CAD front



CAD rear



CAD exploded



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02 / Quote and materials

Quote an unpowered form and appearance prototype plus the engineering work required for a functional assembly. This is a new 138.4 mm enclosure, not a qualified reduction of the 21.2 electronics package.

Item	Proposal / quotation basis
Rigid structure	2 mm nominal shell walls. PA12 additive prototype candidate; confirm finish, supports and distortion.
Soft covering	Separate 1.2 mm grip skins. Silicone or TPU candidate; supplier to advise hardness and process.
Controls	38 mm visible play face, 72 mm PTT, two volume keys. Materials and switch interfaces remain open.
Grille	61.7 x 63.7 x 0.8 mm, 721 W-pattern holes. Coated sheet metal candidate; review minimum holes and webs before cutting.
Acoustic stack	Full-area 0.15 mm textile and 0.13 mm perimeter adhesive envelopes. Reference solids only; do not print.
Lens / marking	Translucent amber lens candidate. Play glyph is a 0.035 mm paint envelope, not a separate rigid part.

Supplier response

Return process recommendations, material samples, lead time, quantity breaks and a list of any geometry changes required. Do not substitute rigid plastic for textile, adhesive or soft skins without design review.

03 / Build and inspect

1. Open 00_Handoff.pdf and Parts_and_Process.csv. Confirm every file says 25.2 R1 and uses millimetres.
2. Review the complete STEP and native Fusion archive. The 17 bodies include three reference layers; there are no purchased electronic parts.
3. Use the six rigid candidates for a first form check only. The four carriers and shell joint need retention design before an assembled working unit can be approved.
4. Review grille artwork and the full-area black acoustic backing together. Keep the W field free of the circular ledge seen in the earlier concept.
5. Measure grip width 90.4 mm, height 138.4 mm, depth 28.8 mm and visible play face 38 mm. Record actual results in Required_Fit_Checks.csv.
6. Inspect side-control clearances and the charging/microphone openings against selected hardware. Current openings alone do not prove component alignment.

Known digital checks

Native Fusion: 198 timeline entries, 14 components, 17 valid bodies, no feature warnings/errors. Height was changed to 140.4 mm, measured and restored to 138.4 mm. STEP: no pairwise volumetric intersections above 0.01 mm³. Individual STL files are watertight. These checks do not replace physical fit testing.

Exploded views show separated parts for identification. They are not an approved assembly sequence. Use STEP for geometry; pictures are not to scale.

04 / Inputs and delivery

Stage / owner	Required input
Before working prototype / Mechanical + electronics	Fit the selected PCB, battery, antenna, speaker and charging connector to the shorter body; none is supplied or validated.
Before fabrication release / Mechanical + supplier	Develop shell fastening, grip retention, button guidance, switch travel and assembly tolerances. Current carriers are preliminary.
Before material order / Supplier + design	Confirm polymer, elastomer hardness, grille process, coating, acoustic textile and adhesive compatibility with samples.
Before functional approval / Engineering + test	Measure acoustics, RF, thermal behaviour, charging safety, button life and drop/ingress performance on a physical prototype.

Return with the prototype

Provide material/process records, marked-up deviations, measured fit results and front/rear/side photographs. Report any blocked interface before making a functional claim. No electrical, acoustic, RF, drop or ingress qualification is implied by this release.

Files and revision

The curated build ZIP includes this handoff, one STEP and STL per body, the assembly STEP, Fusion F3D, W DXF, BOM, process map and verification reports. The engineering archive also includes editable scripts, source artwork data and rendering assets. Concept 21.2 is retained separately and unchanged.

Technical appendix / geometry

Concept 25.2 R1 was rebuilt from new sketches and features in Autodesk Fusion. No old housing STEP was imported. Units are millimetres. Native coordinates: X right, Y up, Z front.

Feature	R1 nominal / interpretation
Finished grip	90.4 W x 138.4 H x 28.8 D mm; overall width 93.2 mm including controls.
Change from 21.2	14 mm shorter (9.2%). Width and depth retained. Visible play face 34 to 38 mm: 24.9% more face area.
Play key	38 mm visible face; 40.6 mm internal flange. Do not dimension the face from the flange envelope.
W grille	61.7 W x 63.7 H x 0.8 T mm. 721 through holes; no decorative circular ring behind the W.
Acoustic layers	Textile 61.5 x 63.5 x 0.15 mm; perimeter PSA 61.3 x 63.3 x 0.13 mm. These are occupied envelopes, not material specifications.
Shell / grip	2 mm shell and 1.2 mm grip nominal design values. No production tolerance is assigned.

Drawing authority

The supplied STEP defines nominal geometry. The DXF contains W perforations. Rendered orthographic views are identification views, not dimensioned manufacturing drawings. Supplier DFM and released tolerances are required before production.

Technical appendix / verification

What was checked

Source validation records cover all 17 STEP solids, mesh watertightness, pairwise interference and native Fusion reopening. Additional per-body STEP exports are reimported, checked for one valid solid and compared with the source. Public mesh provenance records the original STL SHA-256 and face count.

Native editability

Width, height, depth, wall thicknesses, principal radii and play diameter have linked feature dimensions. Placement sketches are editable. `play_y`, `grille_y` and `grille_t` are reference parameters; automatic repacking of the entire assembly is not promised.

Manufacturing and engineering limits

There is no released fastener schedule, electronics BOM, harness, assembly torque, GD&T or production acceptance specification. The carriers, speaker cradle and microphone seat are concept geometry. Shell closure and control actuation require engineering. Do not assume the older 21.2 package has validated these interfaces in 25.2.

Material Lab and finish

The online 3D viewer uses uniformly scaled copies of all 17 source meshes. Color controls and exploded offsets are presentation options. They do not change downloadable CAD, assign tested material properties or certify manufacturability.

Traceability

File_Manifest.csv and the archive inventory give byte counts and SHA-256 digests. The web downloads use immutable hash-prefixed paths. Physical fit-check fields are deliberately marked NOT TESTED until the supplier records actual measurements.