

Walkie One Concept 1.2

Enclosure prototype handoff

Rapid Product Solutions · Enclosure prototype handoff · Revision R7 · 4 September 2026



Actual R7 CAD geometry. Woven appearance and colors are visual targets; the textile is a separate cut part.

R7 centers the Ø1.8 mm microphone port directly below the status light, at X0/Y-23, between the light and play control. The battery and central tray cup move 1.03 mm rearward to fit the microphone. Body depth stays 24.5 mm; PA12 walls remain 1.6 mm and silicone skins 0.8 mm.

Charging-port alignment remains pending the choice of a relocated socket assembly or revised volume-control placement. This R7 file preserves the supplied PCB and its current USB-C datum; the requested port alignment is not yet incorporated.

Retained features: 30.8 mm raised play control, woven speaker insert with W, colored side buttons and 42 mm rear wordmark with the smaller 32 mm Los Angeles inscription beneath. Original input files are preserved. The microphone fit reference is corrected from manufacturer CAD; components are unscaled.

Body: 88 W × 136 H × 24.5 D mm. Stage: quotation, manufacturability review and first physical fit article. The model is not released for finished functional production.

Quote the rigid fit set first, followed by the silicone, textile and optical finishing work after the physical checks in this document. Do not print the full assembly in one material.

01 Concept website inspiration

These are the original concept 1.2 images from walkieone.com/concepts. Use them to understand the soft lozenge form, warm textile, recessed controls and material character. The R7 CAD and dimensions define the parts being quoted.



Original concept hero | Original front right view



Original front left view | Original right side view

02 Rear and side inspiration

Original website imagery is a visual reference, not a verified mechanical model. The enlarged play button, front W, reduced depth and rear lettering are subsequent changes incorporated into the supplied CAD.



Original rear view | Original left side view

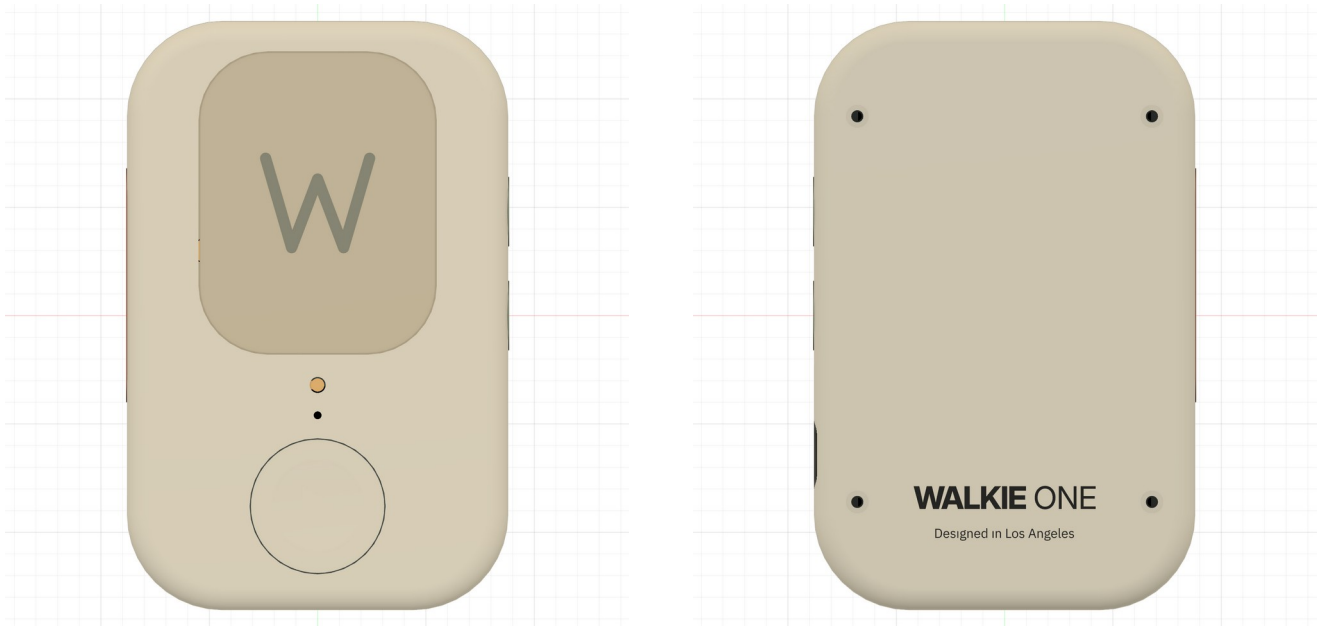
What to carry into the prototype

Preserve the quiet cream body, softly rounded perimeter and fabric speaker surface. Keep the side controls distinct by color and shape. The rear wordmark should sit horizontally on the lower flat face, with the Los Angeles inscription centered directly beneath it.

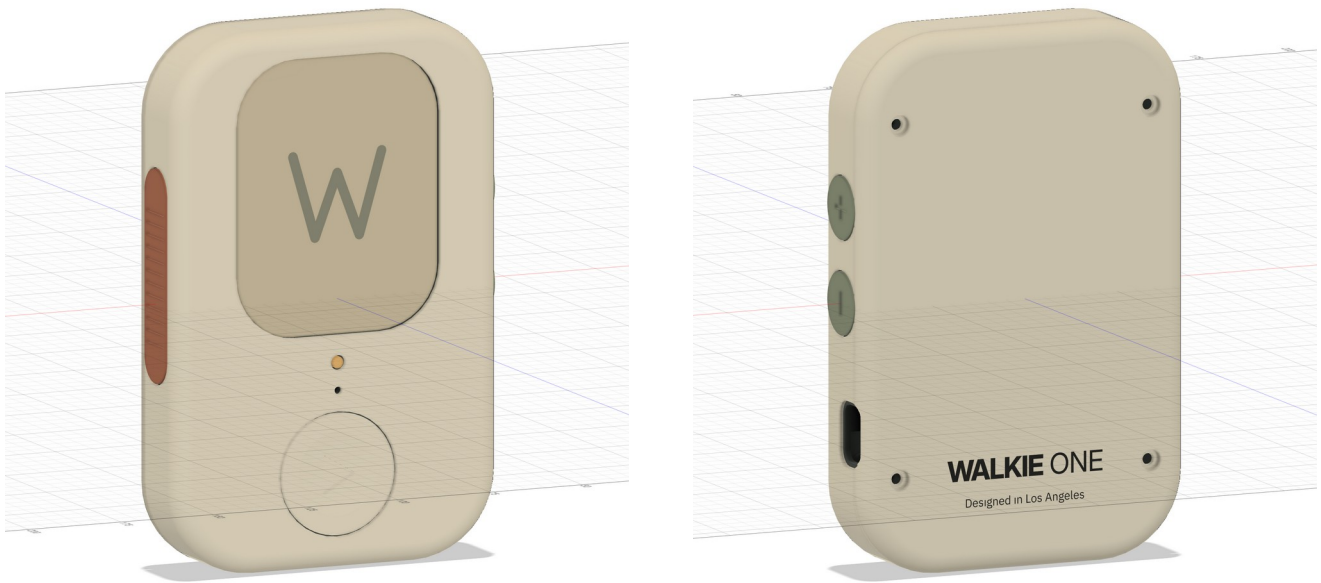
Sources: <https://walkieone.com/concepts> and <https://walkieone.com/design-system>. Original downloaded images and the official SVG are included in the package for direct supplier reference.

03 Actual Fusion exterior views

The following images are exported directly from the R7 Autodesk Fusion model. Flat viewport colors communicate part separation; they do not simulate the final woven texture or silicone finish.



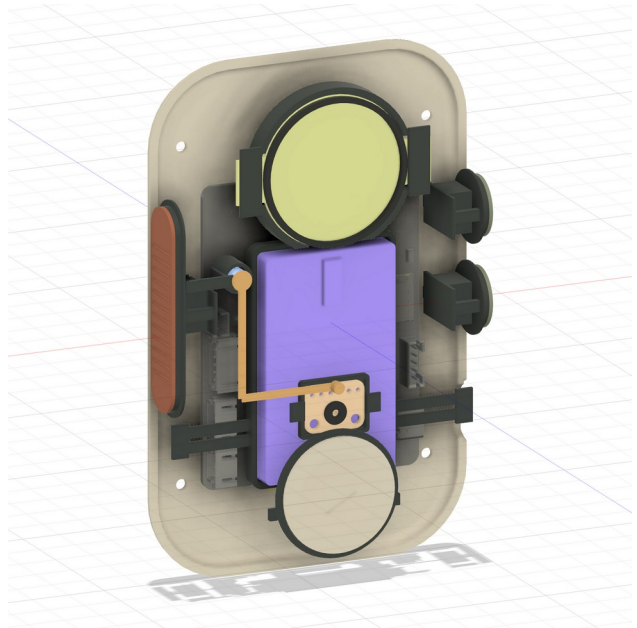
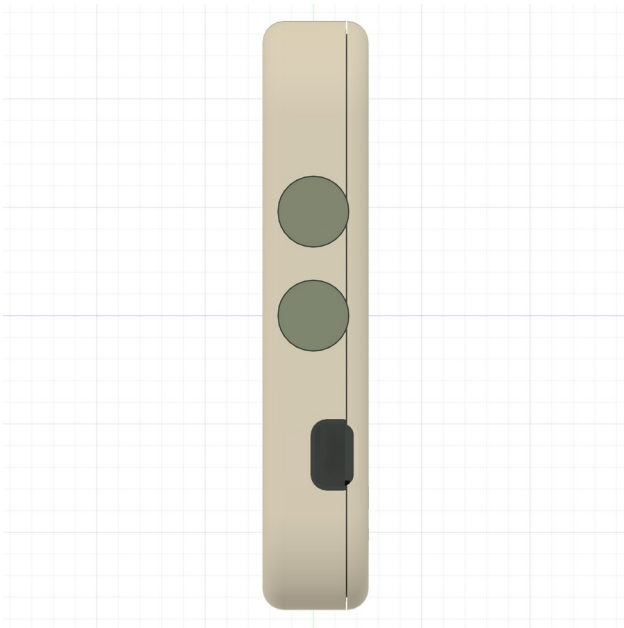
Fusion front: centered microphone, enlarged play and W | Fusion rear view with both requested markings



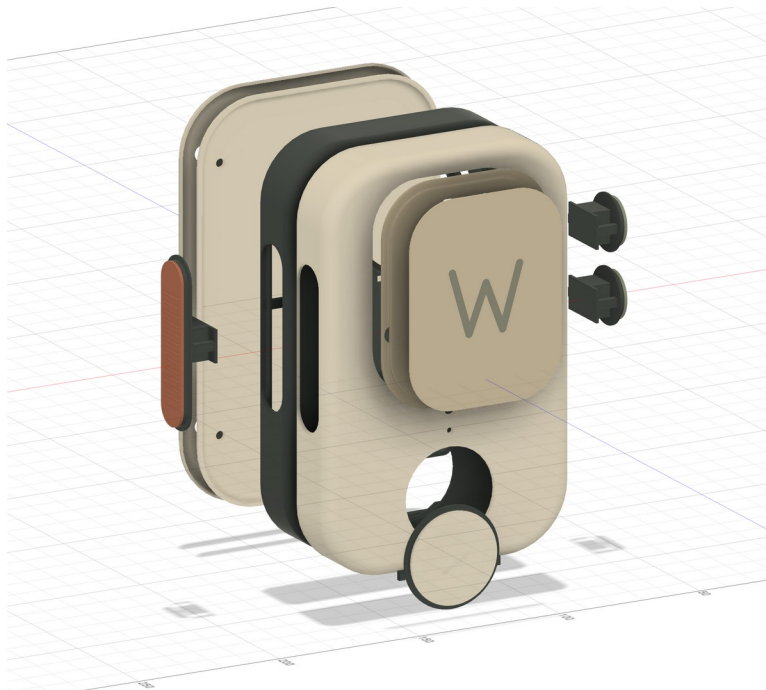
Fusion front perspective | Fusion rear perspective

04 Fusion construction views

Purchased hardware is retained separately from the enclosure parts. The microphone reference adds its true PCB acoustic bore from Adafruit CAD and faces the front port.



Fusion right side showing thickness and USB passage | Fusion internal hardware layout with front removed



Actual Fusion exploded view. Exploded offsets are for assembly explanation only; the archived model is restored to assembly position.

05 Rear branding and print placement



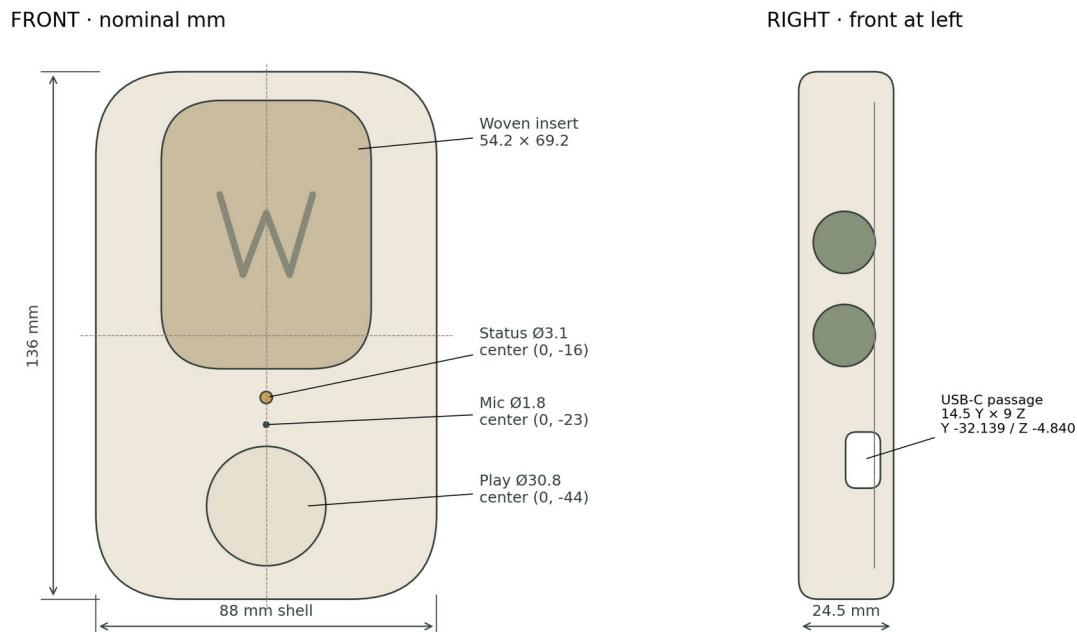
Rear CAD view. The lettering is included in STEP and Fusion as separate appearance reference components.

Mark	Nominal placement and size
Walkie One wordmark	42.00 W × 5.41 H mm. Artwork bounding-box center X0, Y−42. Unchanged from R4.
Designed in Los Angeles	Exact capitalization shown. 32.00 W × 2.85 H mm. Artwork bounding-box center X0, Y−50.5. Clear gap below wordmark 4.37 mm; bottom edge 16.07 mm above the body bottom.
Rear printing	Carbon #171716 on cream silicone. Pad-print with silicone-compatible ink and any required primer. Registration ±0.5 mm; artwork size ±0.2 mm.

Use the supplied outlined SVG files at 100% scale. The wordmark uses the website's embedded custom Inter artwork, with its original split weights and spacing. The inscription uses the website's IBM Plex Sans. No additional trademark symbol is part of the supplied wordmark.

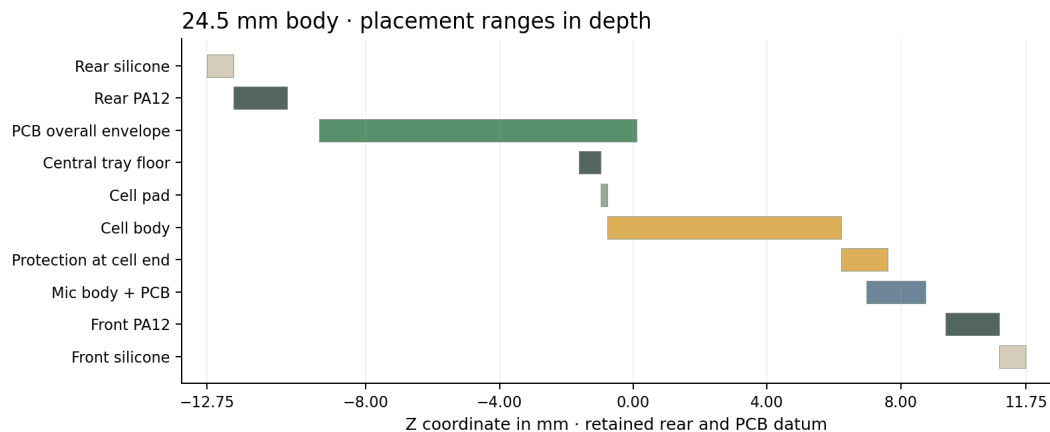
Both marks are on the exterior rear face at Z−12.75 mm. The 0.02 mm CAD color layers are visual references, not rigid parts or added relief. RPS should qualify ink adhesion, flexibility and rub resistance on the actual cured silicone. Confirm the print sample before decorating the case.

06 Geometry and depth budget



R7 · Inspection/reference views, not a full GD&T drawing. STEP controls nominal geometry. Do not scale this page.

Nominal reference dimensions. X = width; Y = height; Z = depth toward front. X/Y origin is the body center; Z retains the prior rear and PCB datum. STEP is authoritative.



Ranges are at different X/Y locations, not additive layers. Tray arms retain their prior elevation.
Actual 3D minimum clearance: tray to PCB 0.749 mm; central cup to PCB 1.169 mm; microphone to cell 0.75 mm.

Nominal geometry only. Verify cell tolerances, dressed leads, thermal performance and all functional clearances on hardware.

Actual depth placement ranges at different X/Y positions. Overlapping Z ranges do not imply physical interference; full 3D clearances are checked.

The 24.5 mm body uses 0.8 mm silicone over 1.6 mm PA12 on both broad faces. The 40 mm speaker sits above the battery in the same front layer. A remote RGB LED feeds the status dot through a thin light pipe. Grille openings are limited to the speaker area behind the tall woven insert.

The central tray floor is Z-1.63 to -0.98 mm; cell base Z-0.78 mm. Floor thickness remains 0.65 mm. The microphone body clears the nominal cell by 0.75 mm; protection-to-roof clearance is 1.73 mm. The play flange clears the conservative battery envelope by 1.38 mm at full stroke. Confirm real tolerances and dressed wiring.

07 Materials finish and process

Parts / quantity	Requested material and process	Finish / acceptance
Core, cover, cradles, plungers and grille backing	EOS PA 2200, unfilled PA12, SLS. RPS must confirm this grade or identify a proposed substitute.	Clean/depowder. Finish sliding guides and screw bores. Keep minimum main walls 1.6 mm; grille lattice 1.0 mm.
Front/rear skins and four button faces	Addition-cure silicone, 40 ±5 Shore A. End-use benchmark: WACKER ELASTOSIL LR 3003/40 A/B.	Cream body/play, orange PTT, sage volume. Matte fine texture; no tack or mold flash on visible edges.
One woven acoustic insert	Woven polyester speaker cloth, 0.6 mm installed target. Supplier and SKU require a physical swatch.	Warm cream/oat weave with W in contrasting yarn or textile ink. No closed film or rigid badge; bond only at perimeter.
Speaker and microphone seals	Closed-cell silicone foam. Speaker 1.6 mm free / 1.4 mm installed target; mic 0.8 / 0.6 mm.	Cut supplied outlines. Final foam grade, compression and adhesive require trial.
One status light pipe	Clear PMMA acrylic; machined/bonded prototype.	Polish coupling and transport faces; diffuse only output dot. Optical efficiency is unverified.
Rear wordmark and inscription	Silicone-compatible pad-print ink and qualified primer; Carbon #171716.	Use actual-size outlined SVGs. Confirm adhesion and rub resistance on cured silicone.
Antenna bond and fastening	3M 467MP is a proposed PSA; 0.10 mm bond allowance. Four stainless M2.5 × 8 screws. PET battery straps.	Use antenna-supplied adhesive if suitable; adjust bondline. No metallic exterior coating or conductive filler.

Silicone manufacturing route

LR 3003/40 is a heat-cured LSR benchmark, not a room-temperature pour resin. RPS should quote whether they can mold it, or identify an end-use RTV casting formulation with the same hardness target for a prototype. A cast polyurethane simulation changes the material and requires an approved sample. Record the actual grade and process on the quote and traveler.

Color targets in CAD: cream #EBE3D3, PTT #B76642, sage #87927B, cloth #C8BBA2. These screen values are not color standards. W target #898979; centered (0,26), 26.6 × 23.24 mm. Match approved physical plaques and a fabric swatch before finishing.

The skin-to-core interfaces are nominal bond surfaces. RPS must establish compatible preparation, primer, adhesive thickness, cure and shrink compensation using a thin-wall coupon. Do not cure hot silicone over the assembled electronics.

08 Construction and assembly



Exploded CAD view. Purchased electronics are supplied separately as reference components; they are not print parts.

1. Print the PA12 parts; inspect wall continuity and depowder every grille opening. Finish guides, trial-fit the bare enclosure and tap the four 2.1 mm pilots to M2.5 × 0.45. Confirm screw engagement and no bottoming.
2. Insert the four plungers from inside. Install the Omron switch cradles with temporary shims. Set side-button freeplay to 0.20 mm and play freeplay to 0.10 mm. Play stop travel is 0.65 mm; shim to measured actuation and return before bonding cradles.
3. Fit the speaker frame into the cradle and its foam ring against the grille backing. Bond cradle tabs and grille flange after confirming a compressed seal and no diaphragm contact. Bond cloth at its perimeter.
4. Fit the bottom-port microphone with its bare PCB face toward the front. Seal its PCB bore to the front tub using the 0.6 mm installed foam ring. Use low-profile soldered leads routed laterally; pin headers are not modeled. Check alignment and light-pipe brightness.
5. Place the PCB on the edge lands. Retain at verified bare-edge lands using removable nonconductive adhesive for this fit article; do not bond over components or antenna. Bond the battery tray tabs, fit a 0.2 mm pad and two PET straps without cell preload.
6. Route and strain-relieve all leads; keep them out of plungers, speaker diaphragm and seam. Place the LTE antenna on the rear inner face, attach coax, trial-fit the USB cable and close the rear cover. Finish and bond skins only after functional checks.

09 Interfaces and physical checks

Interface	Nominal CAD value / inspection requirement
Housing	88 × 136 × 24.5 mm; plan corner R22, edge round R5. Side cap maximum width approximately 88.4 mm; verify final measured export envelope.
Rear closure	Seam faces Z -7.50 / -7.80; 0.30 mm visible gap. Four screw axes at X ±34, Y -43 and +46. Clearance Ø2.8; counterbore Ø5.3.
Side controls	PTT center Y7, visible 54 × 13 mm; volume centers Y24 and Y0, Ø16. Radial running clearance 0.30 mm nominal. Flange pocket allows about 0.65 mm inward motion before static stop.
Play control	Face Ø30.8 centered (0,-44). Switch remains at (0,-48) using an offset tip. Freeplay 0.10 mm; stop travel 0.65 mm. Check actuation and return at every edge of the enlarged face.
USB-C	Right-side passage centered Y -32.1393, Z -4.8396; 14.5 along Y × 9.0 along Z, R2.8. Mouth flared. Connector is recessed approximately 14.2 mm from exterior.
Acoustics / optics	Mic aperture Ø1.8 at (0,-23), 7 mm below the status center. Status opening Ø3.7, optic output Ø3.1 at (0,-16). Cloth 54.2 × 69.2 mm; W 26.6 × 23.24 mm centered (0,26).
Battery / PCB	Battery body 36 × 60 × 7; supplied protection envelope reaches 8.4 mm. PCB assembly 60 × 85.75 × 9.5. 3D tray-to-PCB minimum 0.749 mm at retained outer arms; central cup 1.169 mm. Battery protection-to-roof 1.73 mm; microphone body-to-cell 0.75 mm.

Proposed tolerances for the quote

General rigid dimensions ± 0.30 mm; finished sliding and locating features ± 0.10 mm where feasible. These are requested inspection targets, not a statement of RPS process capability. RPS should identify exceptions and machining/hand-fitting needed. Maintain 0.30 mm running gaps after finish; verify the skin does not bind the controls.

Checks required before a finished functional sample

The model establishes nominal fit; functional performance requires physical checks. Fit real mated connectors and all wire terminations in the 24.5 mm body. Verify cell thickness tolerance, lead exit and expansion allowance without preload. Test full USB insertion and cable removal. Test all buttons for return, force and overtravel. Check playback, microphone feedback and cloth loss, plus light-pipe brightness.

Test LTE and Wi-Fi with the complete enclosure and normal hand grip. The rear LTE placement is close to the PCB; geometric clearance does not establish RF performance. Verify charging/operating temperatures and the effects of insulating silicone. No drop, water-ingress or radio-performance rating is claimed.

10 Files and verification

Folder / file	Purpose
fusion/Walkie_One_1_2_R7.f3d	Editable native Autodesk Fusion assembly with separate case components, positioned hardware and hidden original mesh references.
step/ Walkie_One_1_2_R7_CASE_ONLY.step	Preferred neutral enclosure assembly for quotation. 26 enclosure solids plus three artwork components (front W and two rear graphics); mm; excludes purchased electronics.
manufacturing/	Parts grouped by SLS, silicone molding, PMMA, textile, foam, adhesive and W artwork. Print only the SLS parts for the rigid fit set.
artwork/ and manufacturing/	Actual-size outlined rear SVGs, official website wordmark and front W. Rear_Print_Artwork and Textile_Artwork contain their process references. Ink color layers are display references only.
step/parts/ and stl/	Individual solids and meshes in assembly coordinates. STL is unitless: explicitly import as millimeters, scale 1:1.
references/ and source_inputs/	Positioned hardware, six concept views, eight unchanged original files, and attributed Adafruit Eagle source for the corrected microphone fit reference.
docs/BOM.csv and code/	Part/process list, validation records and rebuildable source. Fusion geometry is a direct BRep assembly, not a sketch-driven parametric timeline.

WALKIE ONE

Designed in Los Angeles

Stacked rear artwork. The combined SVG preserves this spacing; use page 6 for placement on the device.

Use the actual-size SVGs in manufacturing/Rear_Print_Artwork. The combined Rear_lockup_42mm_ACTUAL_SIZE.svg preserves both lines and their gap. Individual outlined SVGs are also included. Do not print this document image as production artwork.

11 Digital verification and sources

R7 retains 24.5 mm depth and 24 of 29 case/artwork components unchanged from R6. Only the front tub/skin port, battery cup, microphone cradle and seal change. All eight original hardware files remain unchanged; the microphone fit reference corrects its omitted PCB bore and package orientation using Adafruit CAD.

Motion checks sample 14 axial positions through 0.65 mm for the play control and each side button. The play flange retains 2.03 mm battery-envelope clearance at rest and 1.38 mm at the stop. Intended switch contact is excluded; tilt, friction and return require physical testing.

Geometry: 29 of 29 enclosure and artwork components contain valid BRep solids and watertight meshes. Rear text components contain multiple disconnected glyph solids.

Fabricated-part intersections: 0 reported overlaps above the documented numerical threshold.

Hardware-to-case conservative screen: 0 reported overlaps above the documented numerical threshold.

Hardware-to-hardware conservative screen: 0 reported overlaps above the documented numerical threshold.

Fusion archive was exported and reopened in Autodesk Fusion. Per-part neutral exports were checked against the source geometry; detailed results are included.

Mesh checks use convex hulls of connected rigid source pieces; the PCB uses its original STEP solids. Zero-volume and degenerate fragments of the non-watertight LED source are skipped. Tests do not cover real wire routing, elastic deformation, assembly access or functional performance. The full LED source remains preserved.

Source references • accessed 4 September 2026

Concept 1.2: <https://walkieone.com/concepts>

Design system and official wordmark: <https://walkieone.com/design-system>

Microphone bottom-port orientation: <https://learn.adafruit.com/adafruit-i2s-mems-microphone-breakout/overview>

Microphone PCB acoustic datum: <https://github.com/adafruit/Adafruit-I2S-Microphone-Breakout-PCB>

RPS services/materials: <https://www.rapid-products.com/materials/> and <https://www.rapid-products.com/service/urethane-castings/>

PA12: <https://store.eos.info/products/pa-2200-polyamide-12>

Silicone benchmark: WACKER ELASTOSIL LR 3003/40 A/B technical data, revision 2021-07-01; wacker.com.

Battery: <https://www.adafruit.com/product/2011>; speaker: <https://www.sameskydevices.com/product/resource/cms-40504n-l152.pdf>

LTE: <https://www.taoglas.com/product/fxub63-ultra-wide-band-flex-antenna/>

Play switch: Omron B3F-4000 pretravel 0.3 +0.2/-0.1 mm; https://components.omron.com/us-en/datasheet_pdf/A070-E1.pdf