Automotive HMI components

Engineering review and quotation note | Revision 2026-10-15

Custom membrane keypads, printed overlays, display windows and backlit legends, made to the buyer's artwork and housing constraints.

Baoshengda reviews the physical interface component and mounted sample. The OEM or Tier 1 owns the display, ECU, software, vehicle network, safety logic and vehicle-level validation.

Instrument-cluster interface shown as application context. The quoted scope is the custom interface component, not the complete cluster or vehicle electronics.

Use this note with the current drawing and equipment requirements. It is not a fixed performance specification, test report or finished-equipment approval.

Construction and scope review

A useful RFQ separates the custom front-panel component from the systems that remain outside the supplier's scope.

Baoshengda Can Review

- Overlay artwork, legends, windows and surface finish
- Membrane, tactile, FSR and backlight layer stack
- Adhesive landing, gasket clearance and housing support
- Flex-tail exit, connector pitch, stiffener and contact side
- Mounted sample evidence for key feel, lighting and fit

OEM or Tier 1 Owns

- Function allocation and driver-interaction logic
- Display module, ECU, software and vehicle network
- Safety analysis, diagnostic strategy and fail states
- Environmental specification and validation plan
- Module and vehicle-level release approval

Mounted-sample review

A flat sample can look acceptable while the assembled module fails. Review the physical interface in the intended housing before releasing artwork, adhesive die lines or tail geometry.

Key Feel Changes After Mounting

• Rib or bezel pressure shifts the dome support

• Adhesive bridges an intended relief area

• Two nearby functions become hard to distinguish

Backlight and Window Mismatch

• LED hot spots or dark legends appear in the real stack

• Bezel shadow clips an icon or display border

• Dead-front contrast changes between day and night

Adhesive Edge Lift

• The housing landing is too narrow or textured

• Curvature loads the overlay edge

• Cleaner, heat or surface contamination weakens contact

Tail and Connector Strain

• The tail exits into a tight bend or sharp edge

• The stiffener faces the wrong mating direction

• The connector cannot be serviced without peeling the panel

Agree the scope of any inspection records, test conditions and acceptance criteria before sampling. A company certificate does not replace approval of the actual component in the intended equipment.

Prepare your quotation

For an automotive HMI component, send enough information to connect the front artwork to the real housing, input function and validation stage.

- Front artwork plus rear housing, bezel and support-rib drawing
- Function map: printed only, display window, tactile key, sensor input or indicator
- Controls that need a fixed physical position and their normal use condition
- Day, night, backlight color, dead-front, viewing-angle and dimming targets
- Overlay material, surface finish, cleaning agent and environmental specification
- Adhesive landing, gasket, curvature and mounted-thickness limits
- Tail exit, bend area, connector pitch, pin count, stiffener and contact side
- Prototype quantity, annual quantity, validation stage and known sample failures

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