

PRACTICAL TOOL · OEM ELECTRONICS

Industrialization Readiness Checklist

15 Things to Validate Before Series Production

A practical reference for OEM engineering, quality, and procurement teams.

How to use this checklist

This checklist covers the 15 critical validation points that separate a working prototype from a product ready for repeatable series production. For each point, assess your current status and use the right-hand column to identify what to request from your electronics manufacturing partner.

For each checkpoint:

- ✓ **YES** This point is validated and documented for your current project.
- ~ **PARTIAL** Partially addressed or not formally documented. Needs attention before series.
- ✗ **NO** Not addressed. This is a gap that should be resolved before committing to production.

Structure: 5 phases, 15 checkpoints

- Phase 1:** Design Architecture (3 points)
- Phase 2:** Components & BOM (3 points)
- Phase 3:** Compliance & Certification (3 points)
- Phase 4:** Industrialization & Validation (3 points)
- Phase 5:** Production Readiness & Lifecycle (3 points)

This tool is provided by KELD as a practical resource for OEM teams. Your responses are for your own use.

Checklist

PHASE 1 Design Architecture

CHECKPOINT	WHAT TO ASK YOUR SUPPLIER
<p>01 SCHEMATIC MATURITY</p> <p>Has the electronic schematic been reviewed jointly by your design team and your manufacturing partner — not just validated internally?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Request a joint schematic review session before PCB layout begins. A manufacturing partner should flag testability, thermal, and component-risk issues at this stage.</p>
<p>02 DFM INTEGRATION</p> <p>Has Design for Manufacturability been applied to the PCB layout — optimizing for automated SMD assembly, not just electrical function?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Ask your supplier to provide a DFM report on the layout before prototype build. Key areas: component placement, pad geometry, panelization, and fiducial marks.</p>
<p>03 DFT ARCHITECTURE</p> <p>Are test points, boundary scan access, and functional test strategy defined as part of the board design — not as an afterthought?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Request the supplier's proposed test strategy (ICT, functional, end-of-line) and confirm that the PCB layout supports it without rework.</p>
<p>Design Architecture (01–03) Yes: Partial: No:</p>	

PHASE 2 Components & BOM

CHECKPOINT	WHAT TO ASK YOUR SUPPLIER
<p>04 BOM LIFECYCLE RISK</p> <p>Has every critical component been assessed for availability, second-source options, and obsolescence risk — not just current stock?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Ask for a BOM risk assessment: lifecycle status (active, NRND, EOL), lead times, and identified second sources for single-source components.</p>
<p>05 BOM COST OPTIMIZATION</p> <p>Is the BOM designed for your application's actual requirements — or does it carry cost overhead from general-purpose reference designs?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Request a BOM cost review comparing your current design against an application-optimized alternative. Custom designs should cost less, not more.</p>

PHASE 2 (cont.) Components & BOM

<p>06 COMPONENT QUALIFICATION</p> <p>Have components been validated against the operating environment (temperature range, humidity, vibration) — not just the datasheet?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Ask whether component selection accounts for your actual installation conditions and duty cycle, not just nominal specifications.</p>
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<p>Components & BOM (04–06)</p>	<p>Yes:</p>	<p>Partial:</p>	<p>No:</p>
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PHASE 3 Compliance & Certification

CHECKPOINT	WHAT TO ASK YOUR SUPPLIER
<p>07 TARGET CERTIFICATIONS MAPPED</p> <p>Are the target market certifications (CE, UL, ErP, RoHS, IEC 61800, etc.) identified and shaping design decisions from day one?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Request a compliance matrix: which standards apply, which design choices are affected, and what pre-compliance testing is planned before lab submission.</p>
<p>08 PRE-COMPLIANCE TESTING</p> <p>Has EMC and safety pre-compliance testing been conducted before committing to formal laboratory certification?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Ask your supplier whether they perform in-house pre-compliance EMC and safety screening. Failing formal certification is expensive; catching issues early is not.</p>
<p>09 CERTIFICATION OWNERSHIP</p> <p>Is it clear who manages the certification process — documentation, lab coordination, test sample preparation, and ongoing compliance maintenance?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Confirm whether your supplier manages certification end-to-end or whether your team needs to coordinate with external labs independently.</p>

<p>Compliance & Certification (07–09)</p>	<p>Yes:</p>	<p>Partial:</p>	<p>No:</p>
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PHASE 4 Industrialization & Validation

CHECKPOINT	WHAT TO ASK YOUR SUPPLIER
<p>10 PROTOTYPE-TO-SERIES GAP ANALYSIS</p> <p>Has the gap between 'working prototype' and 'production-ready product' been explicitly mapped — tooling, fixtures, test programs, process documentation?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Ask for an industrialization gap analysis: what needs to change between the prototype and series-zero to ensure repeatable production.</p>

PHASE 4 (cont.) Industrialization & Validation

<p>11 CONTROL PLAN DEFINED</p> <p>Is there a documented control plan specifying inspection points, acceptance criteria, and process controls at each production stage?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Request the proposed control plan before series launch. It should cover incoming inspection, in-process controls, and end-of-line test criteria.</p>
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<p>12 SERIES-ZERO VALIDATION</p> <p>Is a pre-production run (series-zero) planned to validate the manufacturing process under real production conditions before full ramp-up?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Confirm that a series-zero run is part of the standard industrialization process — and that its results require formal sign-off before serial production begins.</p>
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<p>Industrialization & Validation (10–12)</p>	<p>Yes:</p>	<p>Partial:</p>	<p>No:</p>
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PHASE 5 Production Readiness & Lifecycle

<p>CHECKPOINT</p>	<p>WHAT TO ASK YOUR SUPPLIER</p>
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<p>13 TRACEABILITY SYSTEM</p> <p>Can every production unit be traced back to its component lots, production parameters, test results, firmware version, and shipment data?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Ask for a sample traceability report from a recent production batch. If your supplier can't produce one in hours, the system isn't ready.</p>
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<p>14 MULTI-SERIES CAPABILITY</p> <p>Can your supplier handle your product portfolio realistically — multiple references, varying batch sizes, and rapid changeovers within the same quality system?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Ask how many different product families they produce on the same floor, what the typical changeover time is, and whether the quality system covers all variants equally.</p>
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<p>15 LIFECYCLE CONTINUITY PLAN</p> <p>Is there a documented process for managing component obsolescence, regulatory changes, firmware updates, and design revisions throughout the product lifecycle?</p> <p>Yes Partial No</p>	<p>WHAT TO ASK YOUR SUPPLIER</p> <p>Request the supplier's lifecycle management protocol: how they monitor obsolescence, how far in advance they alert you, and how they handle last-time-buy decisions.</p>
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<p>Production Readiness & Lifecycle (13–15)</p>	<p>Yes:</p>	<p>Partial:</p>	<p>No:</p>
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Summary & Score

Phase	Yes	Partial	No
1. Design Architecture			
2. Components & BOM			
3. Compliance & Certification			
4. Industrialization & Validation			
5. Production Readiness & Lifecycle			
TOTALS (out of 15)			/ 15

How to read your results

12–15 Yes

Your project is well-positioned for series production. Validate the remaining points and proceed with confidence.

8–11 Yes

Foundations are in place, but gaps remain. Address the “No” and “Partial” items before committing to production tooling and series launch.

< 8 Yes

Significant gaps exist. Industrializing now carries high risk of ECOs, delays, and quality issues. Prioritize the open items and consider engaging your manufacturing partner earlier in the design process.

Notes & priority actions

What Comes Next

If this checklist identified gaps in your industrialization readiness, the next step is understanding how a structured co-design and manufacturing partnership can close them — before they become production problems.

Most of these 15 points are easier to address when your electronics partner is involved from the design stage. DFM, DFT, BOM optimization, compliance planning, and traceability architecture are all capabilities that a co-engineering partner brings to the table — before the first prototype is built.

Ready to close the gaps before they reach the production floor?

KELD combines co-design, DFM, flexible multi-series production, and full traceability under one roof. A 45-minute Technical Discovery Call can help you review your project's industrialization readiness with an engineering team that manufactures what it designs.

- [Book a Technical Discovery Call at keld.es/contact](https://keld.es/contact)
- [Send your requirements \(NDA-First\) to keld@keld.es](mailto:keld@keld.es)
- [Download more resources at keld.es](https://keld.es)

About KELD

KELD is an engineering and manufacturing partner for industrial OEMs. Since 1972, we have designed and manufactured custom electronic subsystems — drives, controllers, and OEM electronics — from our integrated facility in Zaragoza, Spain. We export to 30+ countries. ISO 9001 certified.

Electrónica KELD S.L. · Polígono Empresarium, C/Lentisco 15, 50720 Zaragoza, Spain · keld@keld.es · keld.es
This is the third in a series of practical resources for OEM engineering and product teams. No sales pitch — just criteria.