✅ Good SMT Factory vs. ❌ Poor SMT Factory

Evaluation Criteria	✅ Good SMT Factory	❌ Poor SMT Factory
1. Equipment & Machines	Advanced Surface Mount Technology (SMT) lines with high-speed pick & place, automated stencil printer, and reflow ovens with profiling.	Outdated SMT machines with poor placement accuracy, manual printers, or reflow ovens without profiling.
Core to SMT Factory Audit	Brands: Yamaha, Juki, Panasonic.	Frequent soldering defects and misalignments.
2. Solder Paste & Printing Quality	Automated solder paste printers with SPI (Solder Paste Inspection). Ensures consistent volume and deposition.	Manual or semi-auto stencil printers. No paste inspection, increasing risk of tombstoning or cold solder joints.
SMT assembly quality control checklist		
3. Component Placement Accuracy	Vision-aligned placement,	Inconsistent placement due to lack of vision system. No AOI or minimal offline checking.
Key factors to assess PCB assembly partners	±0.05mm accuracy. Verified by inline AOI (Automated Optical Inspection).	
4. Reflow Soldering Process	Controlled reflow profile with multi-zone oven.	Uncontrolled or improperly calibrated ovens.
Best practices for SMT quality assurance	Temperature logged and matched to solder paste specs.	Results in cold solder joints and voiding.
5. Post-Reflow Inspection	100% AOI for each board. X-ray inspection for BGA, QFN packages.	Manual visual check only; no X-ray.
BGA inspection / AOI / Soldering defects		BGA/hidden joints prone to failure.
6. Quality Management System (QMS)	ISO 9001 / ISO 13485 / IATF16949 certified. Full documentation & traceability.	No valid certifications. Lack of QC records, no formal procedures.
ISO 9001 certified factory / China EMS factory audit standards	Adheres to IPC-A-610 standards.	

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7. ESD Control & Factory Cleanliness	Full ESD protection, grounded workstations, anti-static garments.	No ESD protection. Dirty, cluttered environment leading to contamination risk.
Factory visit checklist	Cleanroom or dust-controlled zones.	
8. Testing Capabilities	In-circuit test (ICT), functional test, flying probe, boundary scan, customer-specific test setups.	Only basic continuity or power-on tests. High risk of latent PCBA quality issues.
Turnkey PCB assembly supplier evaluation		
9. Design for Manufacturability (DFM) Feedback	Engineering team provides proactive DFM analysis to optimize yields & cost.	No DFM support. Builds strictly to file, even with obvious design issues.
DFM / Supplier evaluation		
10. Production Records & Traceability	Barcode tracking for PCBs and components. Detailed batch records for every build.	No traceability. Difficult to investigate failures or perform root cause analysis.
PCB manufacturing audit process		
11. Communication & Technical Support	Fast, clear communication. Technical team responds to engineering queries. Fluent English.	Delayed responses, poor communication, lack of technical support.
How to evaluate SMT supplier in China		
12. Flexibility & Lead Time Transparency	Capable of rapid prototyping and low-volume runs with fast turnaround.	Inflexible for small batches.
	Realistic lead time quoting.	Frequent delivery delays and vague schedules.