

PCBA One-Stop Service Introduction

1. Overview of PCBA Services

PCBA (Printed Circuit Board Assembly) refers to the complete process of assembling electronic components onto printed circuit boards after PCB fabrication. This includes SMT assembly, DIP insertion, soldering, testing, and final product assembly. PCBA is a critical stage in transforming electronic designs into mass-produced products, directly impacting product performance, reliability, and time-to-market.

2. Service Scope

- PCB Fabrication: 2–40 layers, including HDI boards, high-frequency boards, high-speed boards, thick copper boards, and metal core PCBs.
- SMT Assembly: High-precision placement for 0402/0201 components, supporting BGA, QFN, LGA, CSP, and other advanced packages.
- DIP Assembly & Soldering: Manual and automated insertion with wave soldering and selective wave soldering processes.
- Component Procurement: Global sourcing from original manufacturers and authorized distributors, ensuring 100% genuine components.
- Testing & Inspection: AOI, X-ray, ICT, FCT, and aging tests to ensure electrical performance and long-term reliability.
- Box Build & Final Assembly: Complete product assembly including enclosures, cable harnesses, labeling, and packaging.

3. PCBA Manufacturing Process

- Project evaluation and DFM/DFA analysis
- PCB fabrication and incoming material inspection (IQC)
- SMT process: solder paste printing, pick-and-place, reflow soldering
- AOI and X-ray inspection
- DIP insertion and wave soldering
- Functional testing (ICT/FCT)
- Final assembly and outgoing quality control (OQC)
- Packaging and logistics delivery

4. Service Advantages

- One-stop turnkey solution covering PCB fabrication, assembly, and final product delivery.
- Strict quality management systems compliant with ISO9001, ISO13485, and IATF16949 standards.

- Fast turnaround time: prototypes in as fast as 3–5 days and on-time mass production delivery.
- Strong engineering support with professional process optimization and cost-reduction suggestions.
- Extensive experience across multiple industries including industrial control, medical electronics, automotive electronics, communications, and consumer electronics.

5. Application Areas

PCBA products are widely used in industrial automation equipment, medical devices, automotive electronic control units, smart home systems, communication equipment, consumer electronics, and customized R&D; projects.

6. Conclusion

Professional PCBA services represent more than manufacturing capability—they reflect integrated strengths in engineering, quality management, and supply chain coordination. A reliable one-stop PCBA solution helps customers shorten product development cycles, improve product quality, and enhance market competitiveness.