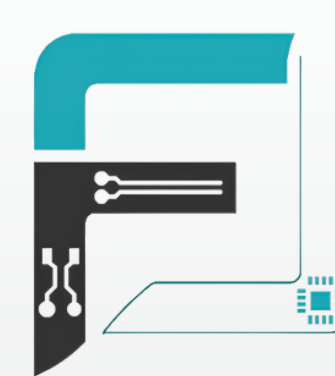




Manufacturing & Service Capabilities

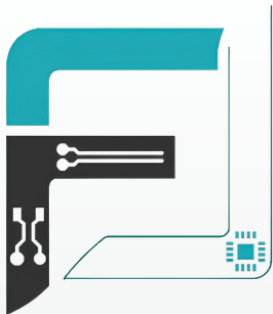
Flashline EMS

Electronics Manufacturing Services

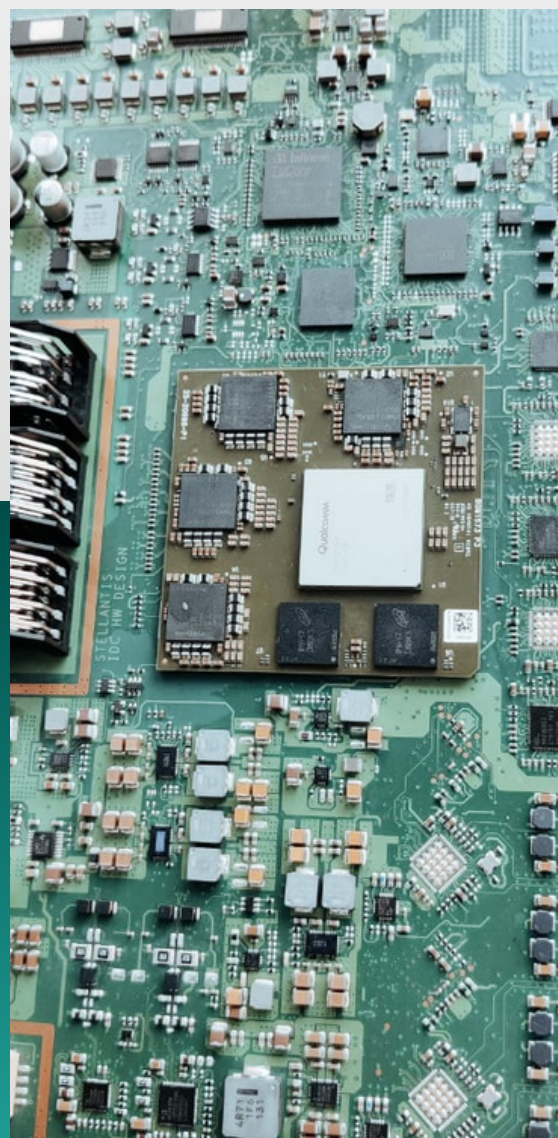
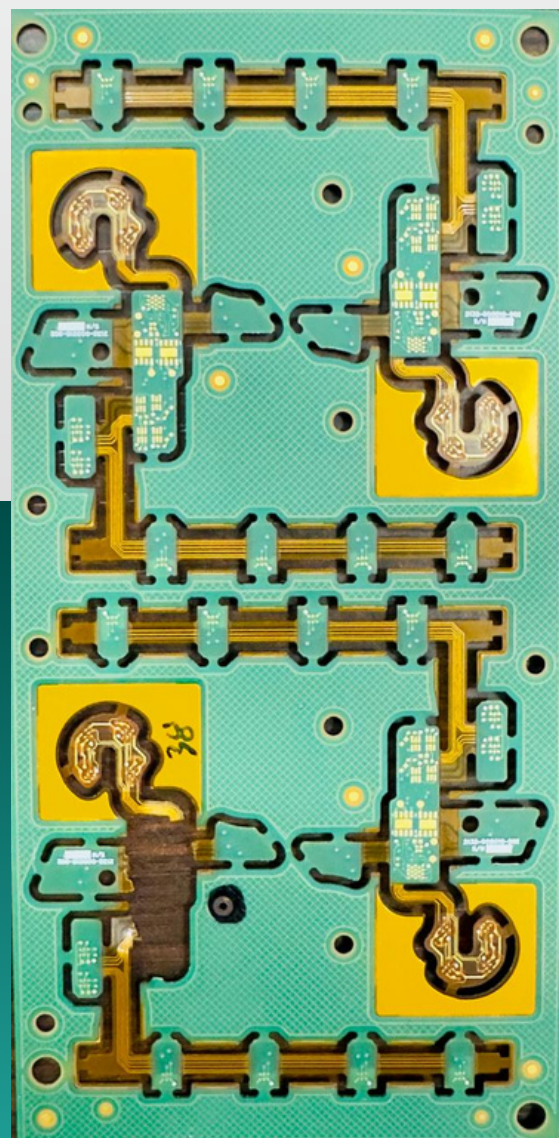
- PCB Manufacturing
- Components Procurement
- PCB Assembly
- Quality Inspection
- System Integration
- Engineering & NPI Support

Advanced Manufacturing. Assured Quality.





Our Manufacturing & Service Capabilities



PCB Technology

- Rigid PCB
- HDI PCB
- Flex PCB
- Rigid-Flex PCB
- Controlled Impedance
- Blind / Buried / Stacked Via Technologies

Electronics Assembly

- SMT Assembly
- Through-Hole Assembly
- Mixed Technology
- Fine-Pitch Assembly
- BGA / Micro-BGA
- High-Density PCBA

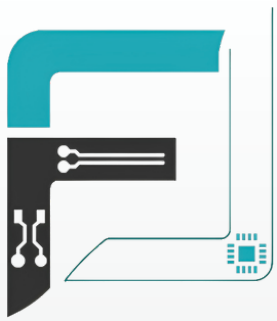


Procurement

- Component Procurement
- PCB Procurement
- Full / Partial Turnkey
- Customer-Supplied Material
- Alternate Sourcing
- Global Supply Chain

Special Processes

- BGA Rework
- BGA Replacement
- BGA Re-Balling
- Selective Soldering
- Wave Soldering
- Conformal Coating
- Thermal / Environmental Testing



Advanced PCB Manufacturing

PCB TECHNOLOGIES

Rigid PCB | HDI PCB | Flex PCB | Rigid-Flex PCB

ADVANCED STRUCTURES

Blind Vias | Buried Vias | Stacked Vias
High-Density Interconnect | Fine-Line / Fine-Pitch
Controlled Impedance

MATERIAL CAPABILITY

Standard FR-4 | High-Speed / Low-Loss Materials
Ultra-Low-Loss Materials | Application-Specific
Selection

PRODUCTION SCOPE

Prototype → NPI → Volume Production



Procurement Support | DFM & Engineering

PCB Sourcing

Fabrication Partner Management

Technical Specification Review

Material Selection

DFM-Oriented PCB Evaluation

DFM Analysis

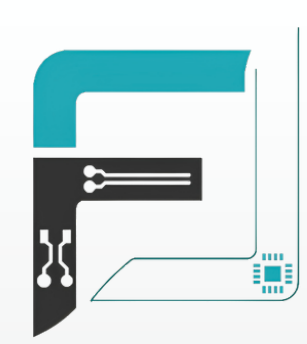
Design for Assembly

BOM Review

Layer Stack-Up Guidance

Impedance Verification





Component & PCB Procurement



01

COMPONENT SOURCING

- Active Components
- Passive Components
- Electromechanical Components
- Connectors & Modules
- Special / Application-Specific Components
- Alternate Component Sourcing



02

PROCUREMENT MODELS

- Full Turnkey Supply
- Partial Turnkey Supply
- Customer-Supplied Components
- BOM Management & Review
- Component Availability Analysis
- Manufacturer / Distributor Sourcing

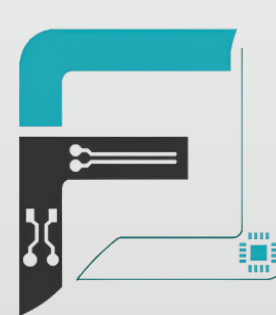
03

SUPPLY CHAIN SERVICES

- Global Supplier Network
- Procurement Coordination
- Incoming Material Verification
- Component Traceability
- Controlled Kitting
- Reel / Material Verification



Precision SMT & Advanced Assembly



Combined Placement Capacity 200K CPH
Component Capability 01005
Micro-BGA 0.15 mm Pitch

ASSEMBLY CAPABILITY

High-Speed Automated SMT
High-Mix / Low-to-Medium Volume
Prototype, NPI & Production
Fine-Pitch Components
High-Density PCBA
QFN / Bottom-Terminated Components
BGA & Micro-BGA

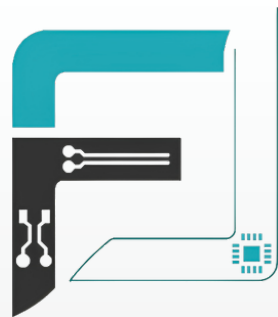


Industry-leading automated SMT placement with 200K CPH combined capacity. Fine-pitch and high-density PCBA with full BGA capability down to 0.15 mm pitch.



BGA SERVICES: Replacement | Re-Balling

End-to-end process control: 3D Solder Paste Inspection, controlled reflow profiling, 3D AOI, and X-Ray inspection for complete assembly quality assurance.



Through-Hole | Mixed Technology | Special Processes

Comprehensive assembly and process capabilities spanning conventional through-hole, mixed SMT+PTH, advanced soldering technologies, and specialised surface protection processes.



➤ Through-Hole Assembly

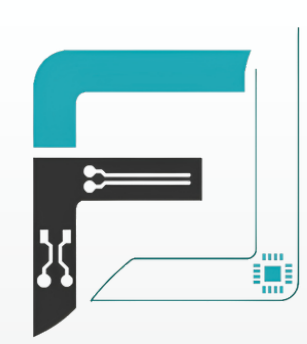
- Conventional Through-Hole Assembly
- Large Through-Hole Components
- Connector-Based Assemblies
- Mixed SMT + PTH Assemblies
- Process Inspection & Visual Verification

➤ Soldering Technologies

- Selective Wave Soldering
- Conventional Wave Soldering
- Manual Soldering & Touch-Up
- Rework & Repair Support
- Controlled Process Parameters

➤ Special Processes

- Conformal Coating
- Selective Coating Application
- Coating Thickness Control
- Thermal / Environmental Stress Testing
- Temperature Cycling
- Reliability Verification



Inspection & Quality Control



01

3D SPI & 3D AOI

3D SPI: Paste volume, paste height & process verification.

3D AOI: Component presence, placement accuracy, solder defects, missing / misaligned components.

100% Inline 3D SPI & AOI inspection at every stage.

02

X-Ray Inspection

Shimadzu X-Ray system for BGA & hidden solder-joint inspection.

QFN / bottom-terminated components, void detection, open / bridge detection & internal assembly analysis.

03

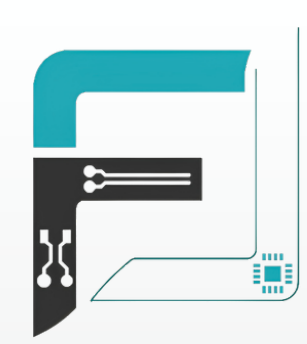
Final Inspection

Visual inspection & final quality verification.

Lot traceability & full process documentation.

Process & final inspection at every production stage.





Box Build & System Integration

PCBA INTEGRATION

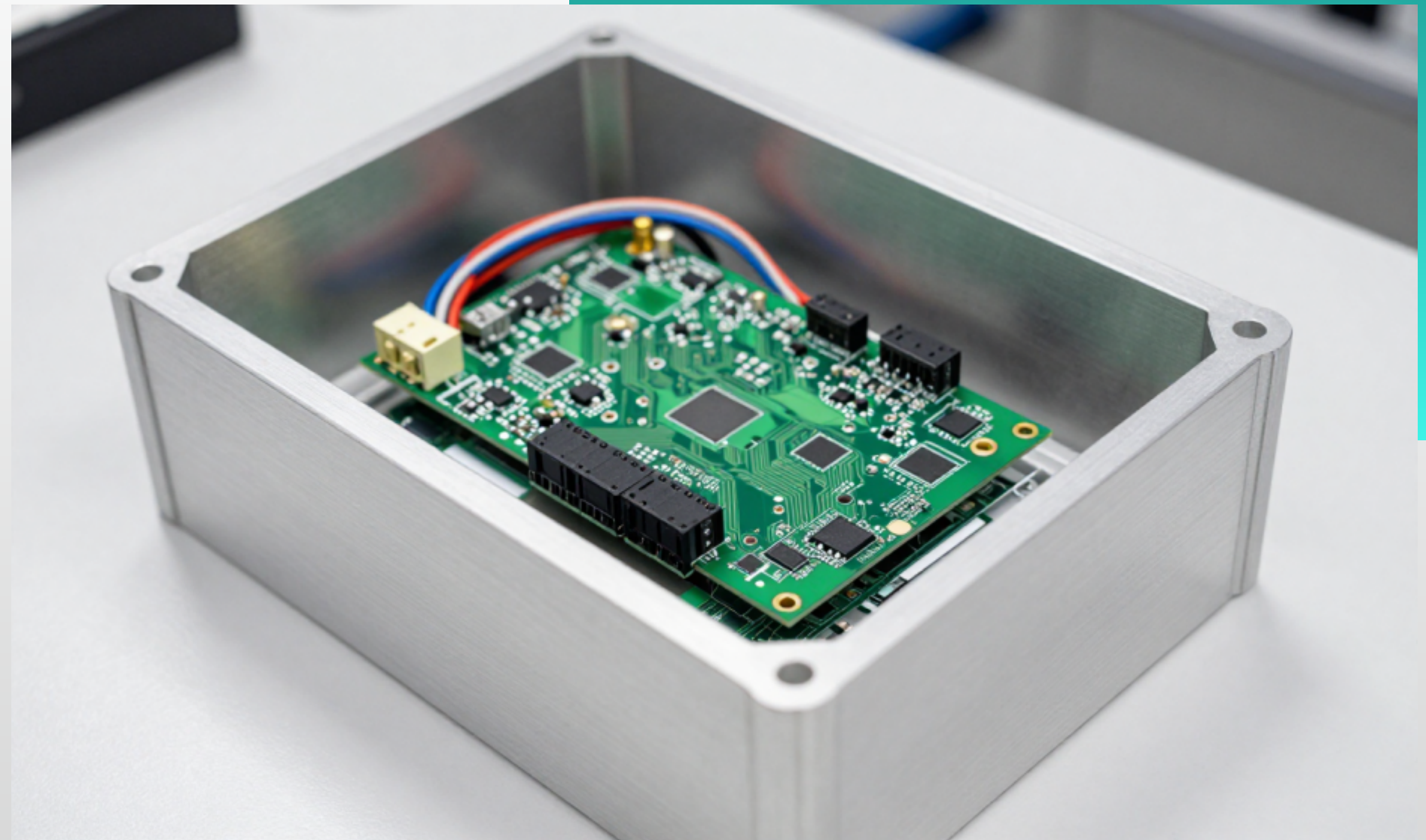
- PCB Assembly Integration
- Sub-Assembly Integration
- Board-to-Board / Module Integration

MECHANICAL INTEGRATION

- Enclosure Assembly
- Mechanical Sub-Assemblies
- Component & Hardware Integration

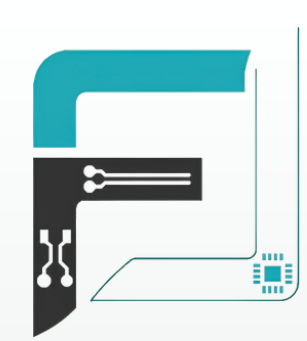
FINAL ASSEMBLY

- System-Level Assembly
- Wiring / Interconnect Integration
- Labeling / Identification
- Final Inspection & Pack-Out Support



PCBA → Sub-Assembly → Integration → Final Product

From board-level assembly through enclosure build and system integration — complete box build capability under one roof.



Engineering & NPI Services



01

DESIGN DATA & ENGINEERING REVIEW

- DFM / DFA / DFT Analysis
- BOM Engineering & Review
- Component Selection & Validation
- Alternate Component Recommendations
- Cost Analysis & Optimization
- Technical Specification Review



02

PROTOTYPE & NPI DEVELOPMENT

- Prototype Build & Validation
- Process Development & Refinement
- NPI Readiness Assessment
- Process Optimization
- First Article Inspection
- Build-Validate-Refine Cycle

03

PRODUCTION READINESS

- Controlled Manufacturing Transition
- Process Documentation & Control
- BOM & Component Traceability
- Quality Plan Implementation
- Scalable Volume Production
- Continuous Process Improvement