Assembly capabilities

Assembly

Quick turn PCB assembly, Full turnkey services, BGA rework

1.1 Process envelope

Assembly types	SMT and through-hole
Smallest component placed	0201 / 01005
Package support	BGA, μBGA, flip chip
Minimum pitch	0.3 mm, 0.4 mm
Substrate types	Rigid, flex, and rigid-flex assemblies
Volume range	Prototype and production quantities
Turnaround	Same day delivery available
Solder paste alloys	SAC305 lead-free and Sn63/Pb37 leaded
Cleaning process	Water soluble
Inspection	AOI and X-ray

1.2 Equipment

Solder paste printing	EKRA, DEK
Solder paste inspection	Mycronic SPI
Placement	Mycronic surface mount pick and place; iineo Europlacer dual turret, max 30,000 cph
Reflow	BTU Pyramax, 12 zone; Heller 1809W, 9 zone; Vitronics Soltec XPM2
Wave soldering	NU/ERA, leaded and lead-free
Selective soldering	Ersa Smartflow, leaded and lead-free
AOI	Mirtec MV-6 and MV-7, 5 high-resolution cameras
X-ray	Dage XD7600NT
BGA rework	Air-Vac DRS 24C; Chip-off WDS-650
Cleaning	Typhoon T-12 wash system

Leaded process capability is maintained alongside lead-free, supporting high-reliability builds where tin whisker risk rules out a RoHS process.

Testing and inspection

Choose the inspection and testing your program needs, from automated inspection to a full powered bring-up with firmware loaded. The test level for each order is agreed and documented in your quote.

4.1 What we run

Inspection · by quote	Automated optical inspection (AOI) and X-ray are available when specified in your quote, with inspection records included for the agreed scope.
Functional test	Powered test against your spec or test fixture to confirm the board performs before it leaves.
Board bring-up	Full bring-up of the assembled board, from bare hardware to a known-good, running state.
Firmware load & flashing	We flash your firmware and confirm the board boots and responds.
EMC and emissions	Not included in standard inspection or functional test. Pre-compliance work and certified-lab testing can be coordinated when quoted separately.

4.2 Fixtures and rework

Your acceptance criteria and any customer-supplied fixture are agreed before production. The fixture is available at the assembly and test site before boards leave the line, so a failed board can be diagnosed and reworked before shipment. Custom fixture design can be quoted with the build.

4.3 Standing behind the build

When ProvenMetal selects the MPNs, ProvenMetal owns the outcome. If a board fails because of a part we chose or our workmanship, we make it right, rework or rebuild, on us. You are not left holding a dead board over a sourcing call we made.

Parts and sourcing

Most orders are turnkey: you send a BOM and we source and verify every part. If you would rather supply your own components, we accept consigned parts too.

5.1 Turnkey and consigned

Turnkey · default	You send the BOM. We source and verify every part to your spec and budget, and buy against your build quantity before assembly starts.
Consigned parts	Prefer to supply your own components? Ship them to us and we build with your kit. Every consigned kit is received, counted, and inspected against your BOM before the build.

5.2 Storage and handling

ESD control	Parts are received, stored, kitted, and assembled in ESD-protected areas. Static-control packaging stays in place through point of use.
Moisture sensitivity	MSL labels and floor-life status are tracked through the build. Opened parts are dry-packed or baked when required by the manufacturer and IPC/JEDEC J-STD-033.
Lot traceability	Manufacturer, MPN, lot or date code, received quantity, and disposition remain tied to the order's build record.
Long-term storage	Stored inventory remains sealed and labeled. Moisture-sensitive material is dry-packed with desiccant and a humidity indicator card.

Certifications and standards

ProvenMetal

ITAR compliant

Held across our assembly and fab partners

ISO 9001:2015, AS9100, ITAR registered, NIST 800-171, ISO 13485:2016, ISO 27001:2022, IPC-A-600, IPC J-STD-001, UL certified, RoHS compliant

Certificates, registration numbers, and scopes available on request through ProvenMetal.