Home Page

Pioneering PCB Excellence

At Network PCB, we're more than just a PCB provider—we're pioneers in innovation. With over 3 decades of expertise, we continually advance the limits of PCB technology, supplying forward-thinking solutions to industries across the globe.

Backed by modern facilities and a skilled engineering team, we produce high-performance, dependable PCBs for everything from everyday electronics to aerospace systems. Our unwavering focus on quality, innovation, and customer satisfaction sets us apart as a trusted partner in every project.

Comprehensive PCB Services

From initial design to final delivery, we provide end-to-end PCB solutions customized to your unique requirements. With deep industry expertise, we ensure every board meets the highest standards of quality, performance, and reliability—no matter the application.

About

Our Journey

Our journey began in 1994 in San Jose, California, when our team set out to become a trusted name in printed circuit board solutions. Today, we specialize in prototyping, assembly, and engineering excellence—driven by innovation and advanced technologies to deliver a wide range of high-quality PCBs.

Our expertise extends far beyond production. We provide end-to-end support in PCB design, component sourcing, software integration, and mechanical engineering. With a value-driven mindset and a focus on speed and precision, we help customers bring their products to market faster.

Through continuous investment in employee training, modern tools, and best practices, we've built strong partnerships with leading PCB manufacturers and earned the loyalty of clients across the world. With our collaborative approach, rapid prototyping, and system-level support, Network PCB is your one-stop partner for reliable, high-performance electronic manufacturing solutions.

Services

**Update heading: Comprehensive PCB Solutions

Equipped with cutting-edge facilities and a highly skilled team, we provide top-tier PCB assembly and production solutions customized to your exact requirements. Whether it’s a prototype or high-volume order, we guarantee precision, reliability, and on-time delivery at every stage.

**Update heading: Quick-Turn PCB Solutions

Specializing in fast-track PCB production designed to address the critical demands of industries. Delivering swift, dependable, and budget-friendly solutions precisely aligned with your schedule.

**Update heading: Choose Us for Quick-Turn PCB Services

**Update heading: High-Volume PCB Solutions

Capable of handling large-scale PCB production to support the growing demands of industries worldwide. Providing reliable, cost-effective, and efficient solutions tailored to your specific requirements.

**Update heading: Choose Us for High-Volume Production

**Update heading: Multilayer PCB Solutions

Specializing in high-precision multilayer PCB fabrication designed for complex electronic systems. Delivering dependable, cost-efficient, and scalable solutions tailored to advance your projects.

**Update heading: Choose Us for Multilayer PCB Production

PCB Assembly Solutions

Dedicated to providing efficient, high-quality PCB assembly services that transform your designs into reality. Delivering fast, dependable, and scalable assembly solutions customized to fit your unique requirements.

**Update heading: Choose Us for PCB Assembly Services

Products

BIB (Burn-in Boards)

Overview

Burn-in boards (BIBs) are specialized printed circuit boards used to stress-test semiconductor devices under high temperature and voltage conditions. They hold chips or components during burn-in testing, a process designed to detect early failures and ensure long-term reliability. These boards are built to withstand extreme thermal environments—typically up to 125°C to 250°C—and are used in HTOL, HAST, PTC, and similar reliability tests. Burn-in boards often include high-temp sockets and materials like High-Tg FR4 or polyimide to meet rigorous testing standards.

Services

- Design, layout, and testing for all types, sizes, and complexities
- Engineering support for designs of all complexities
- Prototype to Production quantities
- Mechanical design for custom heatsinks
- Vector development available

Features

- Dedicated and Universal board designs
- Expertise across Product Development (Design, Fabrication, Assembly and Testing)
- 200°C maximum service temperature
- Gold-plated connectors and socket lands
- Range of burn-in board styles available
- BGA, LGA, PGA, QFP, TSOP, micro-BGA, SOJ, PLCC, DIP, or custom-designed sockets
- -55°C to +150°C temperature range (up to 250°C with special board materials)
- Tin-lead or tin-silver wave soldering
- Loader/unloader compatibility

Specifications

Parameter	Units	
	mm	inches
Layer Count	02 to 14	0.078 to 0.55
Base Materials	FR-4 High Tg, Polyimide, Nelco	FR-4 High Tg, Polyimide, Nelco
Thickness Range	1.57	0.062"
	2.36	0.093"
	3.2	0.125"
Conductor Width	0.08	0.003"
Conductor Space	0.08	0.003"
Hole Diameter	ø 0.15	ø 0.006
Surface Treatment (Hard Gold & Electroless Gold Plating)	1.3 µm	50 µm
Etc	HPL	

Probe Card

Overview

Probe cards are specialized printed circuit boards used to test semiconductor wafers during manufacturing. They connect the test system to the circuits on the wafer, allowing electrical testing and validation before the chips are separated and packaged. Probe cards feature contact elements that physically touch the wafer's pads to ensure accurate signal transmission during testing. They are essential for quality control and optimizing production yield in the semiconductor industry.

Features

- Provide interface for Logic device FT testing
- Provide interface for Mixed Signal device FT testing
- Provide interface for RF IC FT testing
- Provide interface for other device FT testing

Specifications

Parameter	Units	
	mm	inches
Layer Count	14 to 52	0.55 to 2.05
Base Materials	FR-4, FR-4 High Tg	FR-4, FR-4 High Tg
Thickness Range	4.8 to 6.5	0.19 to 0.26
Conductor Width	0.075	0.003
Conductor Space	0.1	0.004
Hole Diameter	ø 0.30	ø 0.012
Surface Treatment (Hard Gold & Electroless Gold Plating)	1.3 µm	50 µm
Etc	HPL	

Back Plane Boards

Overview

Backplane boards are large, multilayer printed circuit boards designed to connect multiple PCBs within a system. They act as the central hub or backbone, enabling high-speed communication between various components like processors, memory, or I/O modules. Unlike typical PCBs, backplanes usually don't contain active components; instead, they provide structured, high-density interconnections with features like controlled impedance, blind/buried vias, and back drilling. Commonly used in servers, telecommunications, industrial control systems, and military electronics, backplane boards offer enhanced reliability, especially in environments requiring frequent card insertion and removal.

Specifications

Parameter	Standard	High	Advanced
Layer Count (Max. Layers)	16	40	60+
PCB Size (Max.)	1100 mm × 500 mm	1200 mm × 550 mm	1200 mm × 630 mm
Thickness (Max.)	8 mm	10 mm	15 mm+
Outer Layer Line Width/Space	0.006" / 0.006"	0.005" / 0.005"	0.004" / 0.004"
Press-fit Hole Size Tolerance	+/-2 mil	+/-2 mil	+2 / -1 mil
Through Hole Aspect Ratio	14:01	17:01	20:01
Drill Registration	+/-5 mil	+/-4 mil	+/-3 mil
Buried Vias	Yes	Yes	Yes
Blind Vias	Layers n to n-1	Layers n to n-2	Layers n to n-3

**Update heading: HDI (High Density Interconnect) Boards

Overview

HDI (High-Density Interconnect) boards are advanced printed circuit boards characterized by high wiring density, smaller vias, finer lines and spaces, and higher pad density compared to traditional PCBs. They often feature microvias, blind and buried vias, and via-in-pad technology, allowing for more compact and lightweight designs without sacrificing performance.

HDI boards are ideal for applications requiring miniaturization, high-speed signal transmission, and improved electrical performance, such as in smartphones, medical devices, automotive electronics, aerospace, and advanced computing systems. Their multilayer construction supports increased functionality in smaller form factors, making them essential in today's complex electronic designs.

Product Variants

- Through vias from surface to surface
- Buried vias and through vias
- Two or more HDI layer with through vias
- Passive substrate with no electrical connection
- Coreless construction using layer pairs
- Alternate constructions of coreless constructions using layer pairs

Features

- High level of Reliability
- With increase of the wiring density, PCB layer count and footprint is reduced
- Increase in design efficiency, resulting in better signal integrity
- Enhanced thermal properties
- Supports the use of advanced packaging technology
- Minimal radio frequency interference, electromagnetic interference and electrostatic discharge

Specifications

Property	Typical Value	Advanced Production
Layer Count	4 - 16 Layers	4 - 20 Layers
PCB Thickness	0.6 - 1.0 mm	0.6 - 3.0 mm
Build up Technology	i+N+i (i≥2) HDI PCB	Any Layer Microvias Copper filled
Min. Laser Drill Diameter	4 mil	3 mil
Laser Technology	CO2 laser Drilling	CO2 laser Drilling
Materials	FR4	FR4(HF)
Glass Transition(TG)	140℃ / 150℃ / 170℃	140℃ / 150℃ / 170℃
Copper Plating Holes	12 μm / 18 μm	12 μm / 18 μm
Inner Layer Registration	+/-3 mil	+/-2 mil
Min. Line / Spacing	3 / 3 mil	2.5 / 2.5 mil (BGA area)
Min. Annular Ring	2.5 mil	2.5 mil
Smallest Drill	0.20 mm	0.15 mm

**Update heading: Flex, Rigid, & Rigid Flex PCB Boards

Overview

- Flex PCBs (Flexible PCBs):

Made of flexible plastic substrates (like polyimide), flex PCBs can bend and twist without damage. They're ideal for compact, dynamic applications like wearables, medical devices, and mobile electronics, where space-saving and movement are essential.

🔹 Rigid PCBs:
The most common type, made from solid materials like FR4, rigid PCBs retain a fixed shape and are used in devices where flexibility isn't required. Found in computers, TVs, and industrial control systems, they offer mechanical stability and cost-efficiency.

🔹 Rigid-Flex PCBs:
Combining the best of both worlds, rigid-flex PCBs have both rigid and flexible layers laminated together. They allow complex 3D configurations and reduce connectors and wiring, improving reliability. Common in military, aerospace, medical, and high-end consumer electronics.

Product Variants

- Rigid PCBs
    - Single-Sided Rigid PCB – Copper layer on one side; low-cost, basic applications.
    - Double-Sided Rigid PCB – Copper on both sides with plated through-holes; very common.
    - Multi-Layer Rigid PCB – 4+ layers for high-density, complex systems like servers, industrial, and telecom.
- Flex PCBs
    - Single-Sided Flex – Lightweight, bendable; used in printers, antennas, etc.
    - Double-Sided Flex – Adds routing flexibility; better for compact, layered designs.
    - Multi-Layer Flex – For EMI shielding, controlled impedance, or more complex layouts.
    - ZIF Flex – Tailored for Zero Insertion Force connectors, great for easy plugin-out devices.
    - Sculptured Flex – Tapered or shaped copper traces, often with exposed fingers for connections.
    - HDI Flex – High-density interconnects for fine-pitch or high-speed circuitry.
- Rigid-Flex PCBs
    - Standard Rigid-Flex – Combines rigid and flexible layers into one integrated unit.
    - Multi-Layer Rigid-Flex – Several rigid and flexible sections; used in aerospace, medical devices, and compact electronics requiring durability and reliability.

Features

Flexible, Rigid, and Rigid-Flex PCBs: Durable Solutions for Advanced Designs

Flexible PCBs offer unmatched design versatility. Their ability to bend, fold, and wrap around edges and contours makes them ideal for compact, lightweight devices requiring interconnections across all three axes. Thanks to their slim and lightweight construction, they enable significant reductions in both size and weight — a crucial advantage in modern electronics like wearables, aerospace, and medical devices.

Flex circuits also excel in environments subject to shock and vibration. Their inherent flexibility helps absorb mechanical stress, protecting solder joints and improving overall reliability. Many flex designs meet or exceed performance standards of up to 200,000 bend cycles, ensuring longevity even in dynamic applications.

Rigid PCBs, on the other hand, provide a stable and cost-effective platform for high-density and multi-layer designs. They are widely used in everything from consumer electronics to automotive and industrial control systems where structural integrity is key.

Rigid-Flex PCBs combine the best of both worlds — the durability of rigid boards and the adaptability of flex circuits. These hybrid solutions simplify complex assemblies, reduce interconnects, and improve signal integrity, making them ideal for mission-critical applications where space, weight, and reliability are top priorities.

**Update heading: RF (Radio Frequency) & Microwave PCB

Overview

RF (Radio Frequency) and Microwave PCBs are specially designed to operate at high frequencies, typically ranging from 100 MHz to 30 GHz and beyond. These boards are critical in applications such as wireless communication systems, radar, aerospace, satellite, and medical devices, where signal integrity, low loss, and minimal interference are essential.

They are built using specialized high-frequency laminates like PTFE (Teflon), Rogers, Isola, or Taconic, which offer low dielectric loss and consistent electrical performance. The design and fabrication of RF/microwave PCBs require tight control over trace dimensions, impedance, and material properties to ensure stable and reliable signal transmission.

At Network PCB, we support complex RF designs, including multi-layer, hybrid stack-ups, and mixed-material builds, tailored to meet stringent electrical and mechanical requirements.

Features

- Close etch tolerances on critical RF features
- Back drill for precision stub removal
- Conductive, nonconductive, and partial hole fill options
- Surface finishes include ENIG, ENEPIG, Hard and soft wire bondable gold, Immersion Silver

- Assembly & Testing capabilities for the boards that includes 6 Network analyzers with combined frequency sweep coverage of 50 MHz to 40 GHz & custom anechoic boxes for antenna measurements

Capabilities

Our Printed Circuit Board services follow all relevant certifications, industry standards, and customer-specific requirements. We are equipped to service a wide variety of board types, including those with tight tolerances and unique specifications. Let’s connect to discuss your project needs.