



Power Sector



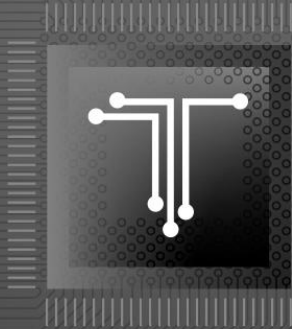
Aerospace



LED Lighting



Education



Telecommunication



Medical Device



Industrial
Automation



Defence Sector



Automotive

Your Innovation,
Our Precision



TruePCB

BY ATHREES ELECTRONICS PVT. LTD.

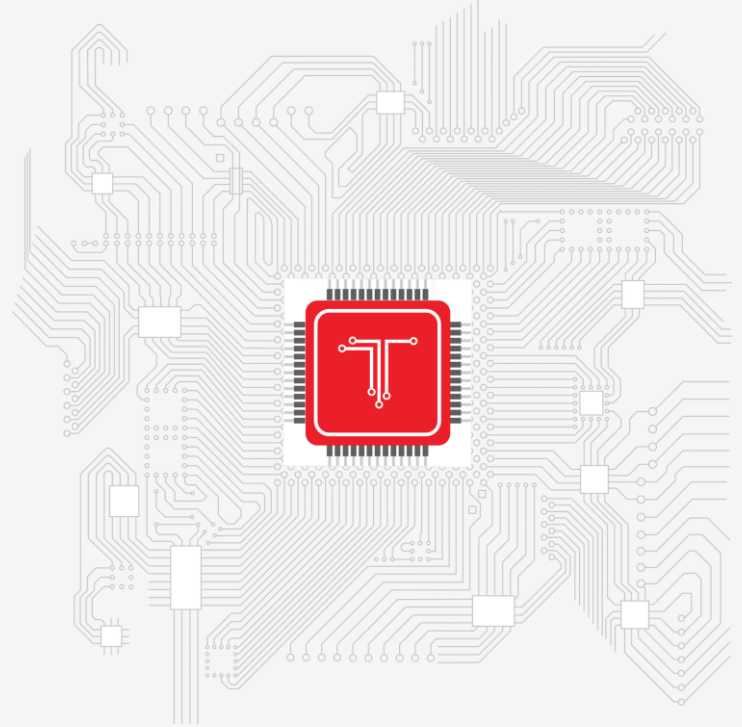
About our Company

True PCB

True PCB, a division of **Athrees Electronics Private Limited**, specializes in **prototype printed circuit boards (PCBs)** and **small-volume manufacturing**, delivering precision-driven solutions across industries.

We manufacture **high-quality PCB prototypes** using advanced technology, covering **Single-Sided, Double-Sided, and Multilayer boards**. Our capabilities extend across a wide range of materials, including **FR4, CEM-1, ALCC, PTFE, Polyimide, Rogers**, and more, enabling us to meet complex and demanding design requirements.

Aligned with **international quality standards** and best manufacturing practices, True PCB ensures **optimal quality, consistency, and reliability**, all delivered within the **shortest possible lead time**. Our focus remains on **precision engineering, rapid turnaround, and dependable performance**.



Our Manufacturing

Capabilities



Schmoll – CNC Drilling Machine

Min Drill diameter – 0.1mm & Aspect Ratio for drilling – 1:8 & Hole Positional Accuracy – 0.05mm



ATG – Flying Probe Tester

High-Speed & Accuracy and advanced automation, which significantly reduce the cost and time associated with, prototypes and small-to-mid volume production.



CIMS – AOI

High-precision detection, advanced data integration, and increased yields, particularly in high-density, high-reliability applications. CIMS machines are designed to cover a wide range of segments including IC substrates, HDI, flex, and rigid-flex PCBs.

Capabilities



Inkjet Printer for Legend Printing

High resolution for small text, flexibility for small batches/prototypes (no screens needed), faster turnaround, reduced waste/cost (less setup/consumables), and easy customization



Henger - Plasma Machine for Desmear

Plasma machines for PCB deburring (often termed plasma desmear or surface treatment) offer superior precision, cleanliness, and efficiency compared to traditional wet chemical methods. By utilizing ionized gases to remove epoxy residue, oxides, and organic contaminants at a molecular level, this dry process improves the adhesion and reliability of PCBAs.



Hitachi - XRF

Using XRF (X-ray Fluorescence) machines for PCB (Printed Circuit Board) analysis provides several key advantages, primarily centered on fast, non-destructive, and highly accurate testing of materials and coatings. These machines are essential for ensuring RoHS compliance, measuring layer thicknesses (such as ENIG or ENEPIG), and verifying the elemental composition of solder and component finishes.

Capabilities



Ionic contamination

Ionic contamination machines (such as ROSE testers or Omegameters) provide critical quality control for printed circuit boards (PCBs) by detecting conductive residues—like solder flux, salts, or processing chemicals—that can lead to corrosion, dendrite growth, and premature failure. These machines are essential for ensuring long-term reliability in high-stakes industries such as aerospace, automotive, and medical device manufacturing



Copper Plating Line with Reverse Pulse Plating

Reverse Pulse Plating (RPP) advantages include creating smoother, more uniform coatings with reduced internal stress, improved grain structure, better throwing power (filling holes), and enhanced mechanical/magnetic properties, making it ideal for high-density electronics (PCBs), aerospace, and micro-devices where precision and performance are critical. It allows tailoring deposits for specific applications, reduces defects like cracks, and can be more efficient by using less raw material.



LDI - For Direct Imaging

enables extremely high precision for complex, fine-line circuit designs by directly imaging patterns onto the PCB without the need for traditional phototools. This technology ensures superior alignment accuracy, reduces human and process-related errors, and supports the manufacturing of high-density and advanced PCBs. In addition, LDI improves overall production efficiency contributing to better energy efficiency.

Management Outlook



Vision

To become a significant contributor in positioning **Indian ESDM** as a **one-stop global solution**, by consistently focusing on the evolving needs of customers today and tomorrow.



Mission

To deliver **advanced PCB prototyping** and small-volume manufacturing solutions through cutting-edge technology, skilled expertise, and customer-centric practices that meet international standards.



Quality Focus

We are committed to deliver **consistent, high-quality PCBs** through advanced manufacturing processes and robust quality systems. Every order is driven by **precision, reliability, and on-time delivery**.



Growth

Driven by India's expanding **ESDM ecosystem**, True PCB continues to invest in technology and capability building. Our focus is to grow as a **trusted, long-term manufacturing partner**.

Certification Roadmap

2025-26 & 2026-27



UL (Underwriters Laboratories) certification for Printed Circuit Boards (PCBs) is crucial for ensuring safety, reliability, and quality, ultimately increasing consumer confidence and facilitating international market access.



It provides a structured framework for quality management, ensuring consistent product quality, reducing variation and waste, and fostering continuous improvement



Ensuring they meet the strict requirements of the Ministry of Defense and other entities

Certification Roadmap

2025-26 & 2026-27



Demonstrates a commitment to quality and consistency, benefiting both the company and its customers. It ensures that processes are standardized, products meet customer needs and regulatory requirements, and continuous improvements are made.

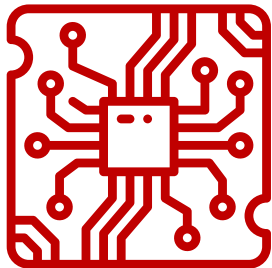
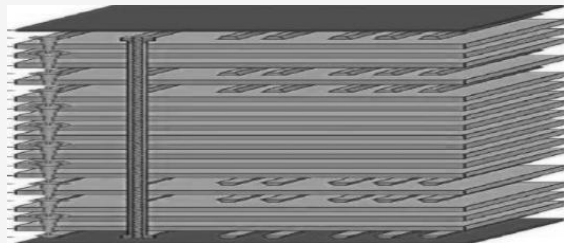


Improving environmental performance, demonstrating a commitment to sustainability, and ensuring compliance with regulations.



AS9100 is a widely adopted international standard for quality management systems specifically for the aerospace industry

Our Capacity



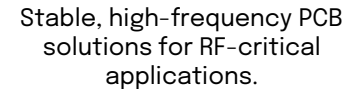
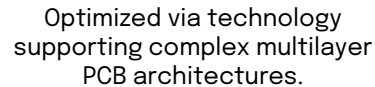
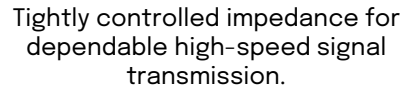
Types of PCB

- Single Side
- Double Side
- PTFE Material
- Roger Material
- Polyimide Material
- Aluminum PCBs
- Multilayer Up to 32 layer

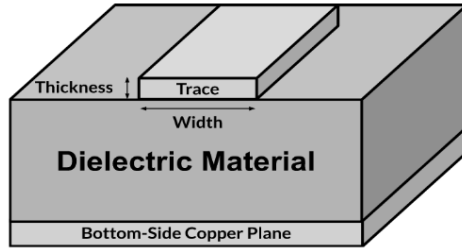


Type of PCB	Delivery Time
Single Side	24 Hours
Double Side	3 Working Days
MLB-4	5 Working Days
MLB-6	7 Working Days
Above MLB-6	10 Working Days

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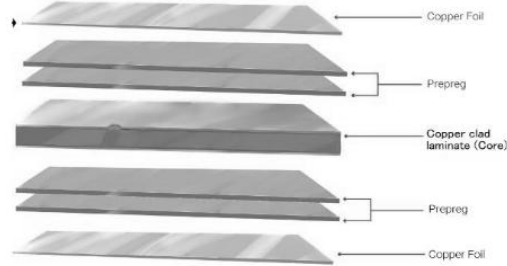


Our Capabilities



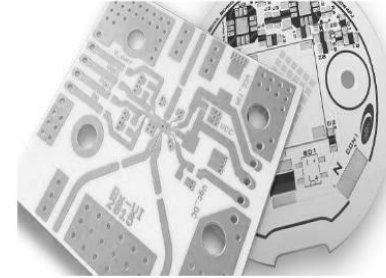
High Copper Build PCBs

Designed to handle higher current loads with enhanced thermal and electrical reliability.



Up to 32 Layer Build PCBs

Supports complex, high-density multilayer designs with precise layer control.



PTFE, Roger, Polyimide

Specialized materials for high-frequency, RF, and high-reliability applications.

Our Enablers & Tech Partners



Laminate



Dry Films



PCB Chemistry



Drilling



Electrical Testing

Ledia6



Direct Imaging



AOI

Tailored PCB Solutions for Every Industry



Power
Sector



Automotive
Sector



Education
Sector



Medical
Sector



Defence
Sector



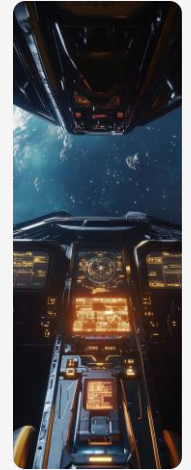
Telecom
Sector



LED
Sector



Industrial
Automation



Aero
Space

What We Do?



Types of PCB

- Single Side
- Double Side
- PTFE Material
- Roger Material
- Polyimide Material
- Aluminum PCBs
- Multilayer Up to 32 layer

Solder Mask Color

- Green
- Black
- Red
- Blue
- White
- Transparent

Legend / Ident / Silk Color

- White
- Black
- Yellow

Material

- Base Laminate
 - 140TG, 150 TG, 170TG, 180TG, PTFE, Polyimide, Rogers
- Base Thickness
 - 0.35mm to 3.2mm (0.125")
- Copper Thickness
 - 12 micron to 210 micron (6oz)

Surface Finish

- HASL (Sn-Pb)
- LF-HASL (Sn)
- Immersion Gold (Enig)
- Immersion Tin
- OSP
- Any Lead Free

Technologies

- Impedance Control
- Carbon Printing
- Blind/Buried Vias
- Peelable Solder Mask

Technical Specification

With Tolerances

Technical Capabilities (All values are in mm)	
Specification	Value
Maximum number of layers	Up to 32 layers
Maximum board thickness	Up to 3.2 mm
Minimum finished board thickness	0.35 mm

Max Board Size (LxW) (All values are in mm)	
Material	Value
FR4	420 × 571 (For SS, DS & MLB)
MCPCB	430 × 585 (For SS)

Base Materials	
Specification	Value
Base material	FR4
Inner layer copper cladding – Max (Planes)	3 oz
Inner layer copper cladding – Max (Signals)	2 oz
Inner layer copper cladding – Min	1/3 oz
Outer layer copper cladding – Max	5 oz
Outer layer copper cladding – Min	0.5 oz

Circuit Layers (All values are in mm)	
For copper thickness of 0.5 oz	
Specification	Value
Outer layer minimum spacing	0.076
Inner layer minimum spacing	0.076
For copper thickness of 1.0 oz	
Specification	Value
Minimum track width	0.125
Minimum spacing	0.125
For copper thickness of 2.0 oz	
Specification	Value
Minimum track width	0.15
Minimum spacing	0.15

Technical Specification

With Tolerances



Circuit Layers (All values are in mm)	
Specification	Value
Minimum finished via hole size	0.15
Minimum via pad size (Outer layers)	0.50
Minimum via pad size (Inner layers)	0.50
Minimum annular ring	0.125
Drill-to-drill clearance	0.15
Minimum slot size for PTH slots	0.50
Blind & buried vias manufacturable	Yes
Drill-to-track clearance (≤ 6 layers)	0.30
Drill-to-track clearance (> 6 layers)	0.40

Surface Finish	
Specification	Value
HASL (Pb-Sn)	1-30 microns
HASL (Lead Free)	1-30 microns
Immersion Tin	0.8-1.4 μm (32-55 μin)
ENIG	Gold: $\geq 0.05 \mu\text{m}$ / Nickel: 3-6 μm
OSP	0.2-0.65 μm

Layer Construction - Impedance Design (All values are in mm)	
Specification	Value
Minimum core thickness	0.10
Minimum dielectric thickness	0.10
Controlled impedance measurement	Yes

Solder Mask (All values are in mm)	
Specification	Value
Green mask opening	0.06
Min. solder mask web width (green)	0.08
Other than green mask opening	0.10
Min. solder mask web width (other colors)	0.125
Solder mask to trace clearance	0.10
Via fill maximum drill size	0.40

Legend (All values are in mm)	
Specification	Value
Legend line width	0.10
Min. character height	1.00

Technical Specification

With Tolerances



Carbon (All values are in mm)

Specification	Value
Minimum line width	0.20
Minimum carbon-to-carbon spacing	0.25

Scoring

Specification	Value
Angle for V-cut	20°/30°
Jump scoring	Yes

Routing (All values are in mm)

Specification	Value
Minimum router size	0.50

Drill Tolerances (All values are in mm)

PTH Hole Size	PTH Tolerance	NPTH Hole Size	NPTH Tolerance
0.50 – 3.50	±0.078	0.50– 3.50	±0.05
>3.50	±0.10	>3.50	±0.078

Copper Clearance from PCB Edge (All values are in mm)

For Routing

Layer	Value
Inner layer	0.40
Outer layer	0.25

For Scoring

Layer	Value
Inner layer	0.50
Outer layer	0.40

Other Tolerances

Specification	Value
PCB size tolerance	20°/30°
PCB thickness tolerance	Yes
Trace width / spacing	1 oz ±20% 2 oz ±20%
Copper thickness inside hole	≥0.020
Bow & twist tolerance	±1%

Peelable (All values are in mm)

Specification	Value
Min. width of any peel-off element	0.50
Max. coverable hole Endsize	6.00
Min. overlap on copper pattern	0.25
Min. clearance to free copper	0.25
Min. distance from PCB outline	0.50

PCB Testing Facility



Cross Section Facility

CMI Probe

X Y Coordinator

Bed of Nail Tester

Automatic Optical
Inspection

Copper Track
Verification System

Impedance Control
Tester

Ionic Contamination
Tester

Pencil Hardness Tester

Flying Probe Tester

Solder Float Test

Peel Strength Tester

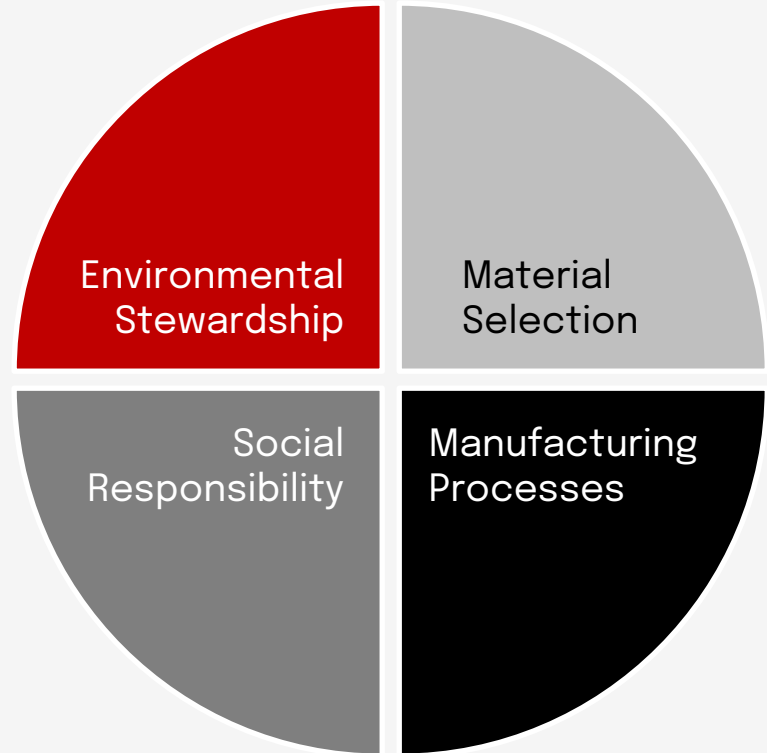
More than multiple Quality Checks
and Inspections for PCB.

Sustainability Policy



AEPL is committed to minimizing environmental impact across the entire PCB lifecycle—from design and manufacturing to usage and end-of-life management. We invest all possible **financial and intellectual resources** to reduce the ecological footprint of our processes.

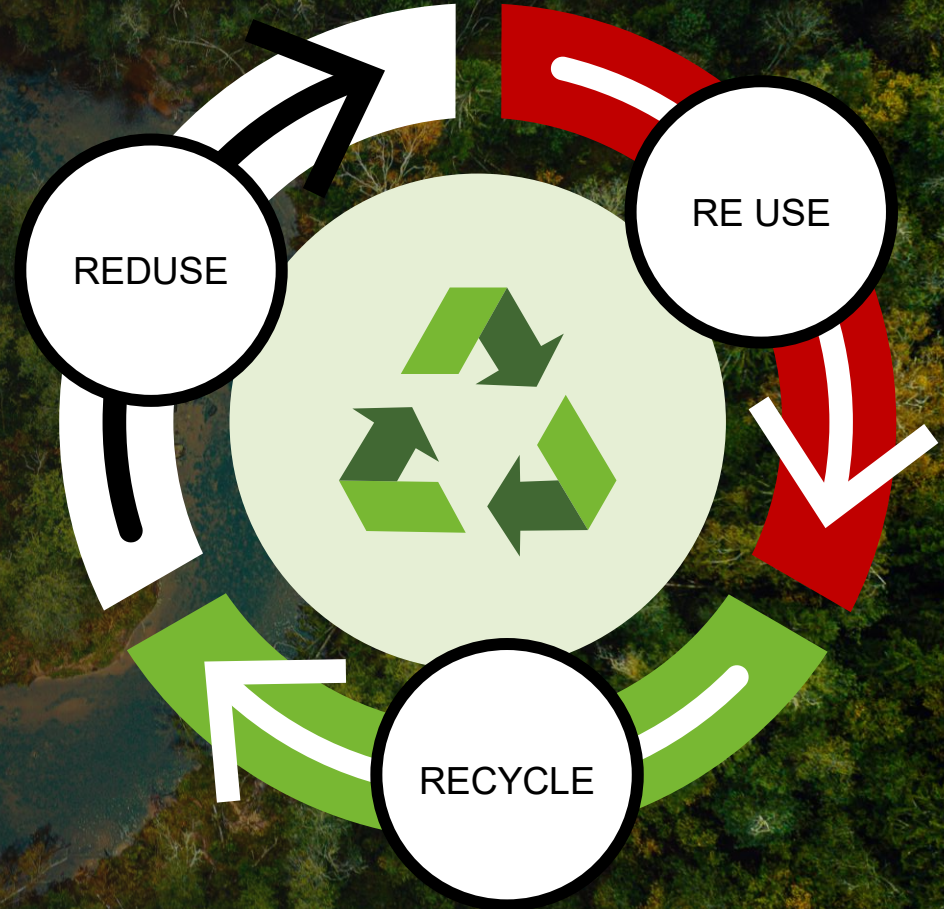
Guided by **four pillars of sustainability**, AEPL strives to adopt responsible practices and aims to become **India's leading sustainable PCB manufacturer.**



Environment Focus

Understanding Environmental Impacts
Adopting Sustainable Practices.

- ✓ Remain Ahead of Compliance
- ✓ Individual Actions
- ✓ Waste Management & Reduction
- ✓ Commitment of Solar Panel in Available area
- ✓ Inhouse ETP Facility



Future Strategy & Roadmap

AEPL will leverage unique Market Standing and High technological capabilities of today to develop compelling PCB solution of tomorrow which will cater to the requirements of all industries across the globe with focus on cutting edge products, that will be made in India.

Invest today for the future

- Mass production plant up to 20000 Sqm / month
- Mass production plant for high-tech technology



**INDIA's ESDM
FUTURE**

Enablers of the Future

- New Energy Vehicle
- Smart Thermal Solutions
- IOT/ADAS/Miniaturization
- 4G / 5G Solution

Thank You!



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