



# PCB Design and Manufacturing

## About Us

At Paradox Innovator, we specialize in delivering high-quality PCB (Printed Circuit Board) design and manufacturing solutions. With a strong foundation in innovation and precision, our team ensures that your product ideas are transformed into reliable, production-ready hardware.

We have successfully completed numerous projects across industries including industrial automation, robotics, IoT devices, consumer electronics, and customized R&D solutions.

## Our Services

### 1. PCB Design

- Schematic Capture
- PCB Layout Design (Single, Double, Multilayer Boards)
- High-Speed, RF, and Analog PCB Designs
- Signal Integrity Analysis
- Design for Manufacturing (DFM) & Design for Assembly (DFA) support.
- Design Rule Checking(DRC) is thoroughly checked for PCB Integrity.

### 2. PCB Manufacturing

- Rapid Prototyping and Bulk Production
- Single-sided, Double-sided, and Multilayer PCBs
- As of now, we only support Rigid PCBs manufacturing.
- Surface Finish Options: HASL, ENIG, OSP, and more
- Lead-free / RoHS Compliant Manufacturing

### 3. Additional Services

- Component Sourcing & BOM Optimization
- PCB Assembly (SMT, Through-hole, Mixed)
- Functional Testing & Quality Assurance
- Hardware Prototyping Support

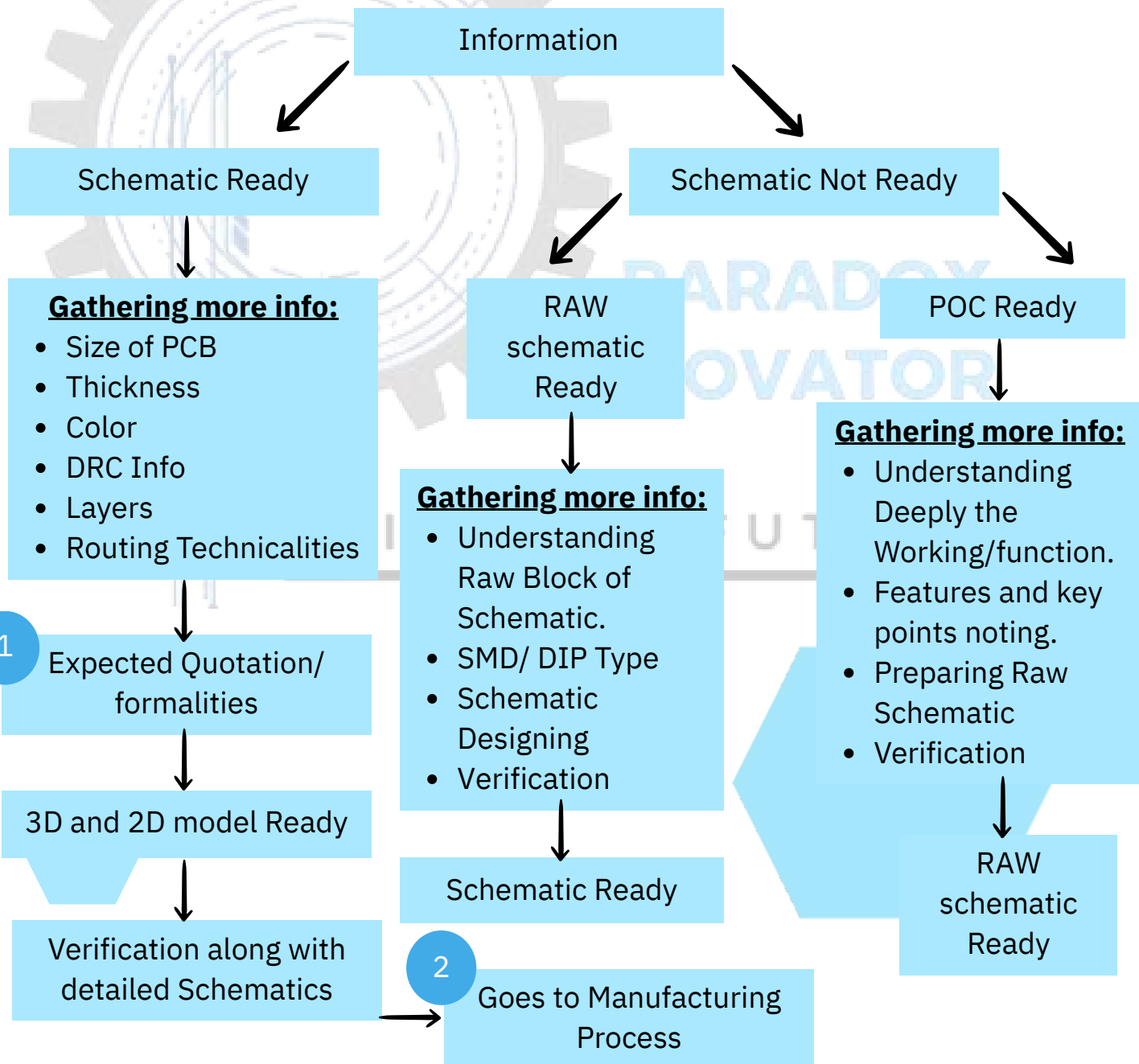




# PCB Design and Manufacturing

## Our Workflow:

1. Requirement Gathering
2. Proposal & Quotation
3. Design & Review Phase
4. Manufacturing & Assembly
5. Delivery to Your Location





# PCB Design and Manufacturing

## Detailed Process Explanation:

At Paradox Innovator, when we receive an inquiry for PCB design and manufacturing, we follow a structured process to ensure every requirement is addressed precisely. The process begins by collecting all necessary information from the client.

### **1. Schematic Ready:**

If the client already has a ready schematic, we proceed to gather further technical information such as:

- Size and dimensions of the PCB
- Thickness of the board
- Color preference for the PCB
- DRC (Design Rule Check) Information
- Number of layers
- Routing and other specific technical requirements

Once these details are finalized, we prepare the Expected Quotation and handle any required formalities within 1 business days.

After formalities, we create the 3D and 2D models of the PCB.

These models are thoroughly verified along with the detailed schematics to ensure correctness.

Upon successful verification, the design moves into the manufacturing phase.

### **2. Schematic Not Ready:**

If the client does not have a schematic ready, there are two sub-paths:

#### **a. RAW Schematic Ready:**

- We work with the client to gather more details including understanding the raw block diagram of the schematic.
- Clarify the types of components used (whether SMD or DIP type).
- Design and verify the full schematic based on this information.
- Once the schematic is verified and finalized, it follows the same downstream process as "Schematic Ready" projects — moving to 3D/2D model creation, verification, and manufacturing.





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## Detailed Process Explanation:

### b. Proof of Concept (POC) Ready:

- In cases where only a basic idea or proof of concept exists, we dive deep into understanding the device's intended function and operational features.
- We note key points, features, and functionality requirements.
- Based on this, we prepare a raw schematic and then verify it through a structured review process.
- After final verification, it transitions into a full schematic, following the same pipeline for design modeling, validation, and manufacturing.

Through this detailed flow, Paradox Innovator ensures that every PCB is designed precisely to the client's needs — whether they come with full documentation or just an idea. Our goal is to provide a smooth, transparent, and professional experience from concept to finished hardware.

## Manufacturing Process:

After the successful verification of schematics, 2D/3D models, and client's formal approval, we move into the pre-manufacturing legal formalities phase.

### 1. Legal Formalities:

- A Manufacturing Approval Document (MAD) is shared with the client, summarizing the final approved specifications:
  - PCB Size
  - Thickness
  - Color
  - Layer Count
  - Surface Finish
  - DRC Compliance
  - Special Requirements (if any)
- The client must review and sign this document, officially confirming that no further changes will be made.





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## Manufacturing Process:

- A Manufacturing Agreement is signed, covering:
  - Intellectual Property (IP) Protection
  - Non-Disclosure Agreement (NDA) if applicable
  - No-Modification Clause post-approval
  - Delivery terms, Payment terms, and Warranty conditions

Once these legal and formal steps are completed, the project is ready for production.

### 2. Manufacturing Execution:

- All final production files (Gerber, BOM, Pick and Place files) are securely shared with JLCPCB (China), our trusted manufacturing partner.
- Since material selection (like FR4 grade, solder mask color, copper weight, surface finish like ENIG/HASL, etc.) has already been finalized during the earlier design stage, there are no further changes at this stage.
- JLCPCB initiates production based on the finalized inputs without interruption or modification.

### 3. Lead Time:

- The standard manufacturing lead time is 20 working days from the date of receiving legal clearance and payment.
- Expedited options can be provided in special cases, depending on project urgency and at an additional cost.

### 4. Cost Optimization:

- We encourage clients to consider higher quantity orders as bulk manufacturing significantly reduces per-unit costs.
- Quantity planning advice is provided during the quotation stage to optimize both budget and delivery time.

### 5. Quality Assurance:

- 100% Electrical Testing: Each PCB undergoes full E-Test to ensure continuity and isolation.
- Final Visual Inspection for mechanical accuracy and cosmetic quality.
- In large projects, an initial pilot batch (5 nos) can be manufactured for sample testing before scaling to full production.





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## Manufacturing Process:

### 6. Shipping and Delivery:

- Once manufacturing is complete, PCBs are carefully packaged and shipped to our office for final inspection.
- After passing all quality checks, they are delivered to the client.

### **Final Note:**

At Paradox Innovator, we guarantee a rigorous, transparent, and quality-focused manufacturing process — ensuring your product reaches production exactly as envisioned, without unwanted surprises or delays.

## Payment Terms:

At Paradox Innovator, we follow a structured and transparent payment policy to ensure smooth project execution for both parties.

The payment structure for PCB design and manufacturing services is as follows:

### 1. Advance Payment (Post-Quotation Acceptance):

- Once the client reviews and accepts the initial project quotation,
- 40% of the total quoted amount must be paid upfront.
- This payment confirms the commencement of detailed design, modeling, and verification activities.

### 2. Post-Verification Payment:

- After successful completion of schematic verification, 2D/3D model creation, and design finalization,
- 50% of the total quoted amount becomes due.
- This payment ensures the client's commitment before the final handover of design deliverables.

### 3. Final Payment (Upon Document Handover):

- Upon handing over all finalized design files (such as schematic files, Gerber files, BOM etc.),
- The remaining 10% of the total quoted amount must be cleared.







# PCB Design and Manufacturing

## Payment Terms:

### 4. Manufacturing Phase Payment:

- Manufacturing is considered a separate phase after design handover.
- A new manufacturing quotation will be provided, based on:
  - Required quantity (more quantity reduces per-unit cost)
  - Type of PCB
  - Technical specifications (material, thickness, surface finish, special requirements, etc.)
- The manufacturing payment terms will be shared with the client during the manufacturing quotation stage and must be agreed upon separately.

### Important Notes:

- No design documents or files will be released without full settlement of design charges.
- Any additional work or changes requested after verification will be treated as a new change request and may incur additional charges.
- Manufacturing cannot proceed without written approval of the manufacturing quotation and corresponding payment clearance(100%).
- All quoted prices will be inclusive of the import and VAT duties that is carried out by us.

If you have any questions, concerns, or need any clarifications regarding the quotation, payment terms, technical details, or the overall process, please feel free to contact us at any time.

We value clear communication and are always available to assist you throughout every stage of your project.

You can reach us via:

- **Email:** [sales@paradoxinnovator.com](mailto:sales@paradoxinnovator.com)
- **Phone/WhatsApp:** +91 7667492418 / +91 7004499845
- **Website:** [www.paradoxinnovator.com](http://www.paradoxinnovator.com)

We look forward to working with you and turning your ideas into reality!

