Development Procedure

FOR EDUCATIONAL USE ONLY

What is a miniPCB?

A miniPCB is a printed circuit board that contains a layout of an electronic circuit.

A miniPCB has a mechanical design that is consistent with numerous similar miniPCBs.

A miniPCB has an interface connector that is simple and economical.

A miniPCB has educational documentation that is approved by an engineer.

A miniPCB is sold in minimum-order-quantities determined by the PCB panel size.

This document is available for free as a download from the GitHub repository:

https://github.com/miniPCB

This document is associated with the miniPCB Channel on YouTube:

https://www.youtube.com/@minipcb

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1. PURPOSE

This document provides steps for developing new miniPCBs.

2. SCOPE

This document applies to development activities related to the miniPCB project.

3. RESPONSIBILITIES

Nolan Manteufel is responsible for maintaining this procedure.

Anyone developing a miniPCB is responsible for adhering to this procedure.

4. TERMINOLOGY AND ABBREVIATIONS

Terminology and abbreviations used throughout the miniPCB project are consistent with the definitions presented in this section.

Table 1 – Definitions and Abbreviations

TERM	DEFINITION
PCB	Printed Circuit Board, Bare Board
PCBA	Printed Circuit Board Assembly, Bare Board + Parts + Assembly
SMD	Surface mount device
THD	Through hole device

5. PROCEDURE

5.1. IDEA PHASE

Purpose: Generate ideas for miniPCBs and record those ideas in the Product Catalog.

Conclusion: A kickoff video for a miniPCB development project.

5.2. PROTOTYPE PHASE

Purpose: Develop deliverables for miniPCBs and publish those deliverables to the GitHub repository.

Activities:

- Design circuit
- Select parts
- Capture parts
- Capture schematic
- Layout board
- Generate fabrication files
- Order prototype
- Create test plan
- Assemble prototypes
- Perform test plan
- Create test report
- Create datasheet

Conclusion: A hardware release video for a miniPCB development project.

5.3. RELEASED PHASE

Purpose: Help as many students and teachers as possible.

Conclusion: A hardware obsolescence video changing a miniPCB status from Active to Obsolete.

5.4. OBSOLETE PHASE

Purpose: Provide a record for past efforts of the miniPCB project.

6. REFERENCES

miniPCB™ Design Standard

miniPCB™ Product Catalog

ECObase Template

TESTbase Template

7. CHANGE AND LIABILITY NOTICE

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WORDMARK	FIGUREMARK	FIGUREMARK
miniPCB™		

9. REVISION HISTORY

REV	DESCRIPTION	ECO	DATE
A	Initial Release	1013	15JAN2023
B	Moved sections included in Initial Release to the miniPCB Quality Manual. Added sections Idea, Prototype, Released, and Obsolete phases.	1015	16JAN2023