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| |  | | --- | | **Development Procedure** | |  | |
| **FOR EDUCATIONAL USE ONLY** |

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| **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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# Purpose

This document provides steps for developing new miniPCBs.

# Scope

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

# Responsibilities

**Nolan Manteufel** is responsible for maintaining this procedure.

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

# Terminology and Abbreviations

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

Table – 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 |

# Procedure

## Idea Phase

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

Conclusion: A kickoff video for a miniPCB development project.

## 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.

## Released Phase

Purpose: Help as many students and teachers as possible.

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

## Obsolete Phase

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

# References

miniPCB™ Design Standard

miniPCB™ Product Catalog

ECObase Template

TESTbase Template

# Change and Liability Notice

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# Trademark Notice

miniPCB is a trademark of Nolan Manteufel.

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| --- | --- | --- |
| WORDMARK | FIGUREMARK | FIGUREMARK |
| miniPCB™ | A picture containing drawing  Description automatically generated™ | Icon  Description automatically generated™ |

# Revision History

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| --- | --- | --- | --- |
| 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 |