Quality Manual

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

The purpose of this document is to establish a simple quality system for the miniPCB project.

2. SCOPE

The scope of this document is engineering activities related to the miniPCB project.

3. RESPONSIBILITIES

Chief Engineer is responsible for maintaining this manual.

Engineer developing a miniPCB is responsible for adhering to this manual.

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. QUALITY SYSTEM

5.1. DESIGN STANDARD

Adhere to the **miniPCB™ Design Standard** throughout all project activities.

5.2. DEVELOPMENT PROCEDURE

Adhere to the **miniPCB™ Development Procedure** throughout development activities.

5.3. PRODUCT CATALOG

Maintain the **miniPCB™ Product Catalog** spreadsheet for all idea and product changes.

5.4. PRODUCT LIFECYCLE

Adhere to the **miniPCB™ Product Management Procedure** when creating and revising products.

5.5. ENGINEERING CHANGE ORDERS

Use **ECObase** to organize and document changes caused by engineering actions.

5.6. DETAILED TEST DOCUMENTATION

Use **TESTbase** to organize and document test plans.

5.7. YOUTUBE CHANNEL

Maintain the **miniPCB™ Channel** on YouTube.

Table 2 – YouTube Channel

CHANNEL	LOCATION
miniPCB Channel	https://www.youtube.com/@minipcb

5.8. WEBSITE

Maintain the **miniPCB™ Website** on Google Sites.

Table 3 – miniPCB Website

CHANNEL	LOCATION
miniPCB Website	www.minipcb.com

5.9. GITHUB REPOSITORY

All engineering files and records are opensource and available on the GitHub.

Table 4 – GitHub Repository

REPOSITORY	LOCATION
GitHub	https://github.com/miniPCB

5.10. CAD TOOLS

Use the following CAD tools to perform engineering work.

CAD TOOL	DESCRIPTION OF USE
EAGLE	EE Development
FUSION 360	ME Development

5.11. ENGINEERING RECORDS

Types of engineering records within the miniPCB project are listed on the table below.

RECORD	DESCRIPTION
Source Files	Gerbers, CAD files, Word documents, Excel documents, images, videos, etc.
Schematics	PDF documents (from CAD source file)
Datasheets	PDF documents (from Word source file)
Plans	PDF documents
Reports	PDF documents
Procedures	PDF documents
Engineering Change Orders	PDF documents

5.12. DOCUMENT CONTROL

Control miniPCB documentation with each of the following methods.

5.12.1. REVISION HISTORY TABLE

Maintain a revision history table within datasheets and schematic sheets.

5.12.2. REVIEW AND APPROVAL

Review, approve, and sign engineering documentation prior to official release.

5.12.3. ELECTRONIC SIGNATURES

Use one of the following signature formats.

- NM.ddmmmyyyy
- N. MANTEUFEL
- NM

5.13. PURCHASING

Purchase boards from any of the approved PCB vendors.

Table 5 – Approved Vendor List

VENDOR NAME	VENDOR WEBSITE
SeeedStudio Fusion	https://www.seeedstudio.com/fusion_pcb.html

6. REFERENCES

miniPCB™ Design Standard

miniPCB™ Product Catalog

miniPCB™ Development Procedure

miniPCB™ Product Management Procedure

ECObase Template

TESTbase Template

7. CHANGE AND LIABILITY NOTICE

This document is subject to change without notice. While effort has been made to ensure the accuracy of the material contained within this document, Nolan Manteufel shall under no circumstances be liable for incidental or consequential damages or related expenses resulting from the use of this document.

8. TRADEMARK NOTICE

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WORDMARK	FIGUREMARK	FIGUREMARK
miniPCB™		

9. REVISION HISTORY

REV	DESCRIPTION	ECO	DATE
A	Initial Release	1014	16JAN2023
B	Added Product Management Procedure	1026	29OCT2023