|  |  |  |
| --- | --- | --- |
| |  | | --- | | **Software Design Notes** | |  | |
| **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. |
| [www.minipcb.com](http://www.minipcb.com)  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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# Introduction

## Purpose

The purpose of this document is to record software design notes for the 13A-777 miniPCB.

## Scope

The scope of this document is limited to specifications and requirements, source code, and firmware releases.

## File Locations

|  |  |
| --- | --- |
| **FILE NAME** | **FILE LOCATION** |
| [ALL] | https://github.com/miniPCB/EAGLE/tree/main/miniPCB/13/A/13A-777 |

# Specification Requirements

#### SSR1 – Hardware Abstraction

No text (title)

#### SSR1.1 – Power

Manage power with these functions:

|  |  |
| --- | --- |
| **FUNCTION** | **DESCRIPTION** |
| readVoltage |  |
| sleepActive |  |
| sleepDeep |  |

#### SSR1.2 – LCD

Control the 2x16 LCD with these functions:

|  |  |
| --- | --- |
| **FUNCTION** | **DESCRIPTION** |
| setContrast |  |
| setBacklight |  |
| refreshScreen |  |

#### SSR1.3 – LED

Control the LED indicator with these functions:

|  |  |
| --- | --- |
| **FUNCTION** | **DESCRIPTION** |
| setLED |  |
| clearLED |  |
| toggleLED |  |

#### SSR1.4 – Primary Select Button

Interface with the primary select button with this function:

|  |  |
| --- | --- |
| **FUNCTION** | **DESCRIPTION** |
| readSelectButton | Signals include: (1) wake, (2) confirm, (3) select. |

#### SSR1.5 – Rotary Encoder

Interface with a rotary encoder with these functions:

|  |  |
| --- | --- |
| **FUNCTION** | **DESCRIPTION** |
| setEncoderRGB |  |
| readEncoderButton |  |
| readEncoderRotation |  |

#### SSR1.6 – Device Clock

Maintain a device clock with 1 second resolution with these functions:

|  |  |
| --- | --- |
| **FUNCTION** | **DESCRIPTION** |
| setTimer |  |
| getTimer |  |
| incTimer |  |
| spareTime | Returns with the counts available in the long (8 bytes). |

#### SSR1.7 – Device Histogram

Maintain a device histogram with these functions:

|  |  |
| --- | --- |
| **FUNCTION** | **DESCRIPTION** |
| addGamePlayed |  |
| getHistogram |  |
|  |  |

#### SSR2 – Game Functionality

No text (title)

#### SSR2.1 – Core Functionality

Selects catalog entries according to three variables: (1) the user control of the button input, (2) the game being played, and (3) the state of game being played.

# Source Code

Table – \FilePath\FileName1.ext

|  |
| --- |
| INSERT CODE HERE |

Table – \FilePath\FileName2.ext

|  |
| --- |
| INSERT CODE HERE |

Table – \FilePath\FileName3.ext

|  |
| --- |
| INSERT CODE HERE |

Table – \FilePath\FileName4.ext

|  |
| --- |
| INSERT CODE HERE |

# Firmware Release History

Table – Release 000-000-0-NM.DDMMMYYYY

|  |  |
| --- | --- |
| **File Name** |  |
| **File Size** |  |
| **File Location** |  |
| **Target Hardware** |  |
| **Maturity Level** |  |
| **Compiler Notes** |  |

Table – Release 000-000-0-NM.DDMMMYYYY

|  |  |
| --- | --- |
| **File Name** |  |
| **File Size** |  |
| **File Location** |  |
| **Target Hardware** |  |
| **Maturity Level** |  |
| **Compiler Notes** |  |

# Change and Liability Notice

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This document does not constitute permission to use the miniPCB trademark.

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

# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| REV | DESCRIPTION | ECO | DATE |
| A | Initial Release | N/A | DDMMMYYYY |
|  |  |  |  |

# Related Content

|  |  |  |  |
| --- | --- | --- | --- |
| # | TYPE | DESCRIPTION | LOCATION |
| 1 | Sale Posting | eBay |  |
| 2 | Sale Posting | Mouser |  |
| 3 | Repository | Engineering Files | https://github.com/miniPCB/EAGLE/tree/main/miniPCB/04/A/04A-005 |
| 4 | Repository | Datasheet |  |
| 5 | Video | Development |  |
| 6 | Video | Development |  |
| 7 | Video | Testing |  |
| 8 | Video | Engineering Release |  |