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

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 1 – \FilePath\FileName1.ext

```
INSERT CODE HERE
```

Table 2 – \FilePath\FileName2.ext

```
INSERT CODE HERE
```

Table 3 – \FilePath\FileName3.ext

```
INSERT CODE HERE
```

Table 4 – \FilePath\FileName4.ext

```
INSERT CODE HERE
```

Firmware Release History

Table 5 – Release 000-000-0-NM.DDMMMYYYY

File Name	
File Size	
File Location	
Target Hardware	
Maturity Level	
Compiler Notes	

Table 6 – Release 000-000-0-NM.DDMMMYYYY

File Name	
File Size	
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Change and Liability Notice

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Trademark Notice

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miniPCB™		

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	