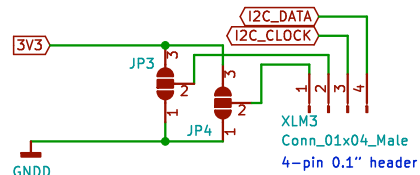


USER-PROVIDED OPTIONAL ADD-ONS AND BATTERY PACK

OLED MONOCHROME I2C – TOP

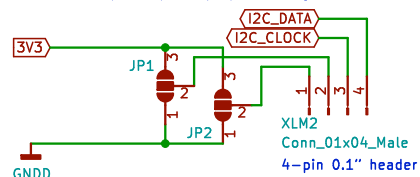
0.96" (128x64)
I2C 4-pins, ADDRESS: 0x3C (60 decimal)
Alternate is 0x3D, not 0x7A or 0x78 (wrong 8-bit!)
Must choose power polarity by soldering SJs.



SILKSCREEN: 3V3 ONLY, 3V3/GND sides of jumpers,
I2C OLED and pin names

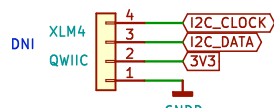
OLED MONOCHROME I2C – BOTTOM

0.96" (128x64)
I2C 4-pins, ADDRESS: 0x3C (60 decimal)
Alternate is 0x3D, not 0x7A or 0x78 (wrong 8-bit!)
Must choose power polarity by soldering SJs.



SILKSCREEN: 3V3 ONLY, 3V3/GND sides of jumpers,
I2C OLED and pin names

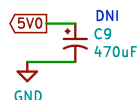
QWIIC I2C



SILKSCREEN: 3V3 ONLY
QWIIC I2C and pin names

OPTIONAL 5V0 BUFFER CAPACITOR

Optional 5V0 buffer capacitor.



Diffuser layer alignment or mounting points



"AAA" BATTERY PACK LOCATION

PRIMARY FOR CORE64c, ALTERNATE FOR CORE64

The 4x "AAA" battery pack (or 3x "AA") can be installed to the back side of the LED Matrix.
This configuration is not electrically or mechanically compatible with the 1S LiPo option described below.
If this configuration is desired, solder the battery pack wires to the B- and B+ position on the board where the 1S LiPo Charger would go.
Thread the wires up from the bottom side so the insulated part of the wire is strain-relieved in the holes adjacent to the solder pads.
In this schematic GND (Ground Power) and +BATT correspond to the silk screen B- and B+ labels.

OPTIONAL 1S LIPO BATTERY – USER SUPPLIED

!!! 1S LIPO ONLY !!!

!!! 7.5V ABSOLUTE MAXIMUM !!!

* Do not connect AAAs to a LiPo charger! You will destroy it.

1) Remove the 4x "AAA" battery pack from the Logic Board or LED Matrix Board. It is no longer needed and is not compatible with the LiPo charger.

2) Purchase and install a LiPo charge manager.

- a) The logic board is designed to accept this one: <https://www.adafruit.com/product/4410> (USB C).
- b) Solder the charge manager directly to the board without headers to keep a low profile.

3) Purchase and install a 1S LiPo using double-sided tape.

- a) Choose a 1S LiPo with built-in cell over/under voltage protection. Largest recommended: 2500mAh <https://www.adafruit.com/product/328> 2.0" x 2.4" x 0.3" (50mm x 61mm x 7mm)
- b) Make sure no part of the LiPo foil pouch can short-out adjacent pins or pads in the area. Insulate it with Kapton tape or similar.

Configuration of the Logic_Board_Power_Enable Solder Jumper (SJ):

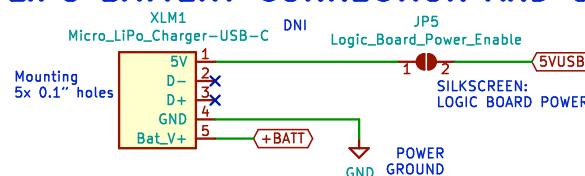
A) DEFAULT SJ OPEN:

If you do NOT want the system to be powered from the USB port of the charger, leave the Logic_Board_Power_Enable SJ open.
Connecting a USB cable to the LiPo charger will ONLY charge the battery and power the system when the power switch is ON (BAT).
Connecting a USB cable to the Logic Board will NOT charge the battery.

B) OPTIONAL SJ CLOSED:

The LiPo charger 5V pin (LiPo Charger USB port) is connected to the Logic Board USB port through 5VUSB.
Connecting a USB cable to the LiPo charger will charge the battery and power the system even when the Power Switch is OFF (USB).
Connecting a USB cable to the Logic Board will power the Core64/c board and charge the battery and connect to the serial port of the MCU.

LIPO BATTERY CONNECTION AND USB CHARGER



SILKSCREEN:
LIPO CHARGER
SILKSCREEN: BAT. + BAT. -
SILKSCREEN: +/- pins
1S ONLY
ADAFRUIT #4410 USB C

All capacitors ceramic X7R unless otherwise noted.

As released 2022-06-15

Visit www.Core64.io for information on assembly and optional features.

Concept and design by Andy Geppert | www.MachineIdeas.com

Sheet: /LED MATRIX EXPANSION/
File: Core64 LM v1.0 Expansion.sch

Title: Core64 LED MATRIX (LM)

Size: A Date: 2022-06-15

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Rev: 1.0

Id: 2/2