LED MATRIX

5V0
LED_MATRIX_5V0_SIG
GND

R1DO
R1DIN

R2DO
R2DIN

R3DO
R3DIN

R4DO
R4DIN

R5DO
R5DIN

R6DO
R6DIN

R7DO
R7DIN

Row 1: D1 D2 D3 D4 D5 D6 D7 D8 — WS2813 — C1 0.1uF
Row 2: D9 D10 D11 D12 D13 D14 D15 D16 — WS2813 — C2 0.1uF
Row 3: D17 D18 D19 D20 D21 D22 D23 D24 — WS2813 — C3 0.1uF
Row 4: D25 D26 D27 D28 D29 D30 D31 D32 — WS2813 — C4 0.1uF
Row 5: D33 D34 D35 D36 D37 D38 D39 D40 — WS2813 — C5 0.1uF
Row 6: D41 D42 D43 D44 D45 D46 D47 D48 — WS2813 — C6 0.1uF
Row 7: D49 D50 D51 D52 D53 D54 D55 D56 — WS2813 — C7 0.1uF
Row 8: D57 D58 D59 D60 D61 D62 D63 D64 — WS2813 — C8 0.1uF

(Each WS2813 pin labels: 2 VDD, 1 VCC, 4 DIN, 3 DOUT, 6 BIN, 5 GND, RGB)

J2 PASS THROUGH BOARD
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

POWER GROUND
GND

5V0

LED_MATRIX_5V0_SIG

I2C_CLOCK
I2C_DATA
3V3

+BATT
5VUSB

GNDD

J1 PASS THROUGH BOARD
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

SILKSCREEN MISC.

SILKSCREEN F/B:
L: LSIG, USER
L: SCL, SDA, 3V3, GNDD
L: +BATT, 5VUSB
R: 5V0, GND
R: N/C, N/C

CORE64 LED MATRIX (LM)   V[version]
Project information at www.Core64.io
Designed by Andy Geppert at www.MachineIdeas.com
WS2813 LEDs

L1
Core_64_Logo_9mm_tall

[Design Release Date]

Sheet: LED MATRIX EXPANSION

File: Core64 LM v0.1 Expansion.sch

SILKSCREEN: SILKSCREEN:
Pixel 0-7 –>   <–bit 63-56
SILKSCREEN: SILKSCREEN:
Pixel 56-63–>   <–bit 7-0

All capacitors ceramic X7R unless otherwise noted.

*** Work in progress ***
Visit www.Core64.io for information on assembly and optional features.
Concept and design by Andy Geppert @ www.MachineIdeas.com
Sheet: /
File: Core64 LM v0.1.sch

Title: Core64 LM (LED MATRIX)

| Size: A | Date: 2021-02-12 | **Rev: 0.1** |
| KiCad E.D.A. kicad (5.1.2-1)-1 | | Id: 1/2 |

EVERYTHING ON THIS SHEET IS USER−PROVIDED OPTIONAL ADD−ONS

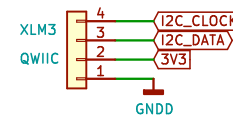## LIPO BATTERY CONNECTION AND USB CHARGER

XLM1
Micro_LiPo_Charger

1	5V
2	GND
3	BAT_GND
4	Bat_V+

+BATT

POWER
GROUND GND

JP3
SolderJumper_2_Open
1 2

5VUSB

SILKSCREEN:
1S ONLY
ADAFRUIT #1904 MICROUSB
ADAFRUIT #4410 TYPE C USB

CLOSE SOLDER JUMPER TO
ENABLE CHARGING OF BATTERY
WHEN THE MICROCONTROLLER IS
POWERED BY USB/PROGRAMMING
CONNECTION.
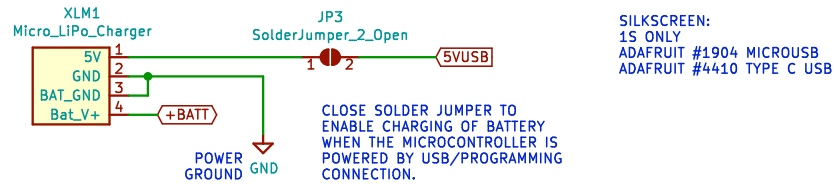
OLED MONOCHROME I2C

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.

3V3

I2C_DATA
I2C_CLOCK

JP1

JP2

GNDD

XLM2
Conn_01x04_Male

4−pin 0.1" header
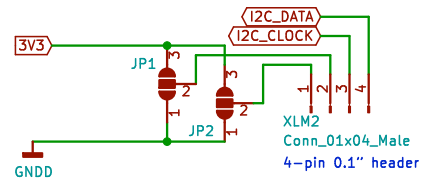
SILKSCREEN: 3V3 ONLY, 3V3/GNDD sides of jumpers,
I2C OLED and pin names

QWIIC I2C

XLM3
QWIIC

4	I2C_CLOCK
3	I2C_DATA
2	3V3
1	

GNDD

SILKSCREEN: 3V3 ONLY
QWIIC I2C and pin names

ALTERNATE PIMORONI UNICORN HAT LED MATRIX

5V0

LED_MATRIX_5V0_SIG

3	XLM4
2	Conn_01x03_Male
1	

GND

SILKSCREEN F/B:
5V0, LSIG, GND
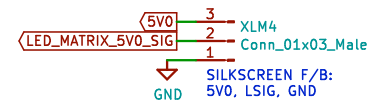
All non−polarized capacitors are X7R or X5R ceramic unless otherwise noted.

Andy Geppert
Work in progress
www.Core64.io

Sheet: /LED MATRIX EXPANSION/
File: Core64 LM v0.1 Expansion.sch

Title: Core 64 LED Matrix − Expansion

Size: A	Date: 2021−02−12	Rev: 0.1
KiCad E.D.A. kicad (5.1.2−1)−1		Id: 2/2