APA102 Addressable LEDs

D3 APA102-5050
D4 APA102-5050
D5 APA102-5050
D6 APA102-5050
D7 APA102-5050
D8 APA102-5050

CI CO
DI DO
VCC
GND

LED_CLK
LED_DATA

3.3V

GND

Input Buttons

J4

MISO_ATTINY
SCL/2
RESET

MISO   VCC
SCK   MOSI
RST   GND

3.3V

SDA/2

GND

S3 — BTN_A
S4 — BTN_B
S6 Joystick

UP   LEFT
DOWN   RIGHT
GND   CENT

A   C
D   B
CTR

BTN_UP
BTN_DOWN

BTN_LEFT
BTN_RIGHT
BTN_CENTER

GND

C12
0.1uF

3.3V

U2 ATTINY84

R3 100k

3.3V

VCC

(RESET)PB3
(INT0)PB2
(XTAL2)PB1
(XTAL1)PB0

(ADC7)PA7
(TX/SDA/MOSI/ADC6)PA6
(RX/MISO/ADC5)PA5
(SCL/SCK/ADC4)PA4
(ADC3)PA3
(ADC2)PA2
(ADC1)PA1
(ADC0)PA0

GND

RESET
BTN_LEFT
BTN_B
BTN_A

INT
SDA/2
MISO_ATTINY
SCL/2
BTN_CENTER
BTN_UP
BTN_RIGHT
BTN_DOWN

7-bit Unshifted I2C Address: 0x71

MicroMod Connector

J1

VIN   3.3V

RESET
BOOT

3.3V_EN/2

USB_D-/2
USB_D+/2

CAN-TX/2
CAN-RX/2

SWDIO
SWDCK

SCL/2
SDA/2
INT

3.3V   SPI_SCK1/SDIO_CLK
RESET   SPI_SDO1/SDIO_CMD
BOOT   SPI_SDI1/SDIO_DATA0
             SDIO_DATA1
3.3V_EN   SDIO_DATA2
RTC_3V   SPI_CS1/SDIO_DATA3
USB_VIN   SPI_SCK
USB_D-   SPI_SDO
USB_D+   SPI_SDI
             SPI_CS
USBHOST_D-
USBHOST_D+   A0
             A1
CAN-TX   PWM0
CAN-RX   PWM1
             D0
SWDIO   D1/CAM_TRIG
SWDCK
             TX1
AUD_MCLK   RX1
AUD_OUT/CAM_MCLK   RTS1
AUD_IN/CAM_PCLK   CTS1
AUD_LRCLK   TX2
AUD_BCLK   RX2
I2C_SCL   G0/BUS0
I2C_SDA   G1/BUS1
I2C_INT   G2/BUS2
I2C_SCL1   G3/BUS3
I2C_SDA1   G4/BUS4
             G5/BUS5
BATT_VIN/3   G6/BUS6
             G7/BUS7
             G8
             G9/ADC_D-/CAM_HSYNC
             G10/ADC_D+/CAM_VSYNC
GND   G11

SPI_SCK
SPI_COPI
SPI_CIPO
SD_CS

A0/2
A1/2
DISP_BL
BUZZER/2
DISP_CS
DISP_D/C

TX1/2
RX1/2

LED_CLK
LED_DATA
DISP_RST

MICROMOD-2222-C

GND

2.4" TFT Screen

Q1
1.1A/600mΩ

DISP_BL

R9 100k

R12 10

3.3V

J5 2.4" TFT

VCC   SDI
RESET
LEDK   SCK
LEDA   CS
GND   D/C
       SDO

SPI_COPI
DISP_RST
SPI_SCK
DISP_CS
DISP_D/C
SPI_CIPO

R4 100k
R10 100k

3.3V   3.3V

GND

C7 0.1uF
3.3V
GND

Micro SD

R6 100k

3.3V   3.3V

J2 MICRO-SD

NC
CS
DI
VCC
SCK
DO
RSV

GND
SHIELD

SD_CS
SPI_COPI

SPI_SCK
SPI_CIPO

C6 0.1uF
3.3V

GND

J7 CORTEX_JTAG_DEBUG

VCC   RESET
      SWDIO
      SWDCK
GND   SWO

3.3V

RESET
SWDIO
SWDCK

GND

SWDCK   TP1

H5 STAND-OFF

GND

S1 Reset
RESET
GND

S2 BOOT
BOOT
GND

TITLE: SparkFun_MicroMod_Input_and_Display_Carrier

Design by: Alex Wende

REV: v11

Date: 9/14/2020 12:41 PM

Sheet: 1/2

sparkfun
qwiic
open hardware

USB-C

V_USB

J3
USB-C

VBUS
D+ — USB_D+/1
D- — USB_D-/1
CC1
CC2
SHLD
GND

USB-C_Prog

R1 5.1k
R2 5.1k
GND GND GND
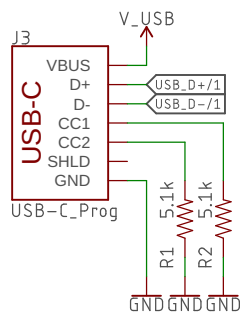
This is the penny-in-the-fuse jumper.
Close only if you know what you're doing.

V_USB   VIN
BYP
F2
6V/2A
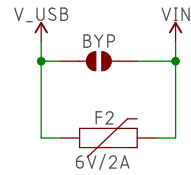
Voltage Regulation

6V Max

Cut the MEAS jumper to measure
the current on the 3.3V power rail.

VIN
C2 10uF
C13 0.22uF
C1 0.1uF
GND GND GND

R5 100k

3.3V_EN/1 — 3V3_EN
D1 3.3V
GND GND

U5
IN OUT
GND
EN
AP7361C-33FGE

MEAS
3.3V
C3 1.0uF
C5 0.22uF
C4 0.1uF
GND GND GND

3.3V
PWR
R11 1k
D2 RED
GND
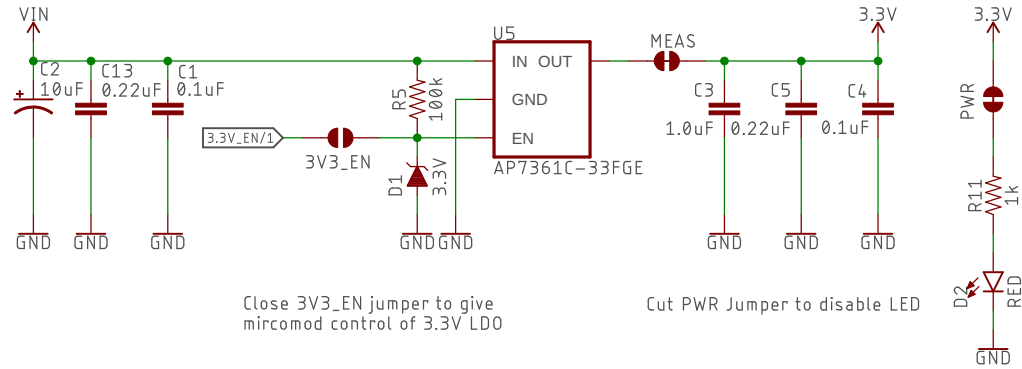
Close 3V3_EN jumper to give
mircomod control of 3.3V LDO

Cut PWR Jumper to disable LED

Qwiic

3.3V
I2C
R7 2.2k
R8 2.2k
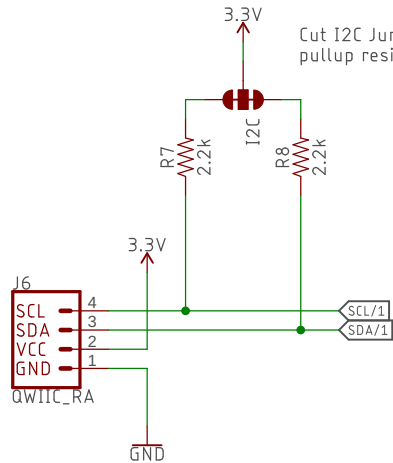
Cut I2C Jumper to disable
pullup resistors
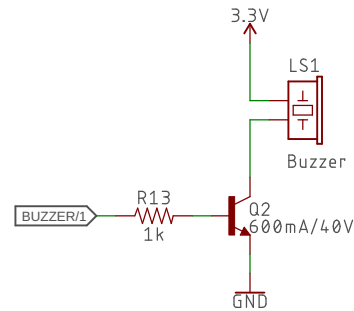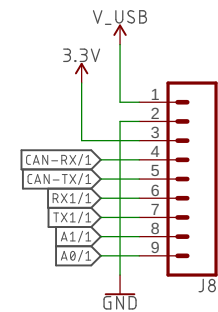
3.3V
J6
SCL 4 — SCL/1
SDA 3 — SDA/1
VCC 2
GND 1
QWIIC_RA
GND

Buzzer

3.3V
LS1
Buzzer
BUZZER/1 — R13 1k — Q2 600mA/40V
GND

IO Connector

V_USB
3.3V
J8
1
2
3
4 — CAN-RX/1
5 — CAN-TX/1
6 — RX1/1
7 — TX1/1
8 — A1/1
9 — A0/1
GND

TITLE: SparkFun_MicroMod_Input_and_Display_Carrier

Design by: Alex Wende

REV: >REV

Date: 9/14/2020 12:41 PM   Sheet: 2/2