EZ Connectors

IN
3.3V
PROC_PWR_EN
Bottom
1
2
3
4 SCLK
5 COPI
6 CIPO
7 CS0
8 CS1
9 CS2
10 GPIO0
11 GPIO1
12 SDA
13 SCL
14
15 V_USB
16
FPC_16_0.5MM_BACKFLIP
GND

OUT
3.3V
PROC_PWR_EN
Top
1
2
3
4 SCLK
5 COPI
6 CIPO
7 CS0
8 CS1
9 CS2
10 GPIO0
11 GPIO1
12 SDA
13 SCL
14
15 V_USB
16
FPC_16_0.5MM_BACKFLIP
GND

Disable Processor Board Regulator

PROC_PWR_EN
PROC_PWR_EN
GND

LiPo Charger

D1
Yellow
V_USB
U2
VIN VBAT
STAT VSS
PROG
V_BATT
LiPo Range: 3.6-4.2V
BATT+
1k
R1
MCP73831
10k
RPROG
C6
4.7uF
J1
+
GND
V_USB
C2
2.2uF
GND
Charge current: 100mA
(1000V/Rprog)

Voltage Regulation

V_BATT
Q1
3.1A/30V/105mΩ
V_USB
D
G
S
D2
VIN
VIN
1A/23V/620mV
R3
100k
AP2112K-3.3V
Iout (max): 600mA
Vin (max): 6.5V
Vdrop (max): 250mV
Iq: 55uA
Output discharge: 60Ω
GND
VIN
C1
2.2uF
GND
3V3_EN
3V3_EN
R2
100k
U3
IN OUT
EN
GND NC
3.3V
3.3V
C3
2.2uF
GND
GND

Fuel Gauge

V_BATT
V_BATT
U4
VDD ALRT
CELL SDA
CTG SCL
GND QSTRT
FG_SDA
SDA
SCL
C4
0.1uF
GND
MAX17048
GND

I2C Address = 0x36

ATtiny43

AVR_SPI_PROG_3X2TESTPOINTS
J3
AT_CIPO
SCL
RESET
CIPO 1 2 VCC
SCK 3 4 COPI
RST 5 6 GND
AT_VCC
SDA
AT_VCC
GND

U1
D0
D1
D2
D3
D4/DI/COPI/SDA
D5/DO/CIPO
D6/SCK/SCL
D7/SS/INT0
VCC
GND
RESET/D15
D14
RXD/D13
TXD/D12
A3/D11
A2/D10
A1/D9
A0/D8
VBAT
LSW
RESET
3V3_EN
VIN
SDA
AT_CIPO
SCL
AT_VCC
ATTINY43_QFN20
GND
1A/23V/620mV
D3
L1
15uH
VIN
C7
22uF
C8
0.1uF
C5
4.7uF
GND
GND
GND

ATtiny43
======
Pin 4 is COPI and Pin 5 is CIPO when the chip is in peripheral mode or is being programmed
Pin 4 is CIPO and Pin 5 is COPI when the chip is operating in controller mode
The #defines in the ATTinyCore assume controller mode

open hardware

SPARK X

Special Instructions

TITLE: SparkX_EZ_LiPo_Power
Design by: Paul Clark
REV: X01
Date: 17/05/2021 17:59
Sheet: 1/1