Sheet: Main
MCU, Power
PWM
Fault
USB_EN
RX
TX
TXD
RXD
File: file5FB6D6CA.sch
Sheet: DCDC
Boost Driver
PWM
Fault
File: file5FB6D6F1.sch
Sheet: USB
USB⇔Serial
RXD
TXD
PWREN#
File: file5FF363A5.sch
H101
H102
H103
H104
H105
H106
GND

* See "is31lt3975 calculator.xlsx" for component calculations
* 12V in / 20.4V @ 500mA output
* appx 92% eff in boost circuit
* recommend 12V/2A source for input

RXD ⇐ To Upstream USB
RX
TP301
VCCIO Decoupling
+3.3V
C304
4u7
C305
0u1
GND
U301
FT232RQ
CTS#
DCD#
DSR#
NC_1
GND_1
RI#
RXD
VCCIO
CBUS4
CBUS2
CBUS3
NC_2
NC_3
USBDP
USBDM
3V3OUT
EP
RTS#
DTR#
TXD
NC_6
OSCO
OSCI
TEST
NC_5
GND_2
RESET#
VCC
GND_3
CBUS1
CBUS0
NC_4
AGND
TP302
TX
TXD ⇒ From Upstream USB
J301
USB_B_Mini
VBUS
D+
D−
ID
Shield
GND
Self−powered
Vbus
LO when USB configured
PWREN#
D+
D−
R301
4K7
R302
10k
C301
0u1
D301
SP0503BAHT
VBUS Decoupling
Vbus
C302
4u7
C303
0u1
GND
GND

J401
Barrel_Jack
D401
B240-E3
C401
10u
Vin
GND
Backpower safe?
U401
AMS1117CD-3.3
TP402
VCC
+3.3V
C403
4u7
C406
1u0
Temp Sense
10K NTC on LED board
NTCS0603E3103HLT
B25 = 10K
B25/85 = 3435K
R402
10K 0.5%
J406
Conn_01x04_Female
T_Sense
J404
I2Cs
SCL
SDA
Prevent backpowering via SWD
D402
SD103BW
J402
TC2030-CTX-NL
VCC IO
RESn CK
GND SWO
XRES
SWD_D
SWD_C
D403
LED
120R
R401
IC401
CY8C4024AZI-S403
P3.1
P3.2
NC_2
P3.3
P3.4
P3.5
P3.6
P3.7
VDDD_1
P4.0
P4.1
P4.2
RX
TX
USB_EN
P3.0
NC_1
VSSD_1
P2.7
P2.6
P2.5
P2.4
P2.3
P2.2
P2.1
P2.0
P1.7
TP401
PWM
TP403
Fault
P1.6
P1.5
P1.4
P1.3
P1.2
P1.1
P1.0
VSSA
VDDA
VDDD_2
VSSD_2
VCCD
J405
TP2-4
Bypass
C407
0u1
VDDD
C408
0u1
C409
1u0
VDDA
C410
1u0
P4.3
NC_3
NC_4
P0.0
P0.1
P0.2
P0.3
P0.4
P0.5
P0.6
P0.7
XRES
J403
ON/OFF
D404
SMP3V3
C402
1n0
Y401
32.768kHz
DNP, 4000S doesn't
clock ILO from WCO
C404
12p0
C405
12p0