MCU

File: MCU.kicad_sch

Power_and_USB

File: Power_and_USB.kicad_sch

+3V3

C100
10u
C101
100n
C102
100n
C103
100n
C104
100n

L100
10n
+3V3

C105
10n
C106
1u
GND

C107
1u
GND

GND

U100

NRST   7   NRST

BOOT0   44   BOOT0

R100
0R

RCC_OSC_IN   5   PD0
RCC_OSC_OUT 6   PD1

CL=10pF ESR=80R

Y100

XTAL_IN

Crystal_GND24

C108
10p
C109
10p

GND

PC13   2   PC13
PC14   3   PC14
PC15   4   PC15

PB0   18 PB0
PB1   19 PB1
BOOT1 20 PB2
PB3   39 PB3
PB4   40 PB4
PB5   41 PB5
PB6   42 PB6
PB7   43 PB7
PB8   45 PB8
PB9   46 PB9
PB10   21 PB10
PB11   22 PB11
PB12   25 PB12
PB13   26 PB13
PB14   27 PB14
PB15   28 PB15

VBAT 1
VDD 24
VDD 36
VDD 48
VDDA 9

PA0   10   PA0
PA1   11   PA1
PA2   12   PA2
PA3   13   PA3
PA4   14   PA4
PA5   15   PA5
PA6   16   PA6
PA7   17   PA7
PA8   29   PA8
PA9   30   PA9
PA10 31   PA10
PA11 32   USB_D-   PA11
PA12 33   USB_D+   PA12
PA13 34   SWDIO
PA14 37   SWCLK
PA15 38   PA15

VSS 23
VSSA 8

GND

STM32F103C8Tx

SWD connector

+3V3

J100
Conn_01x04

D101
PESD3V3L1BA,115

R102
49R9
SWDIO
SWCLK
R103
49R9

D102
PESD3V3L1BA,115
D103
PESD3V3L1BA,115

GND

PIN headers

+3V3   +3V3   GND   +5V

PC13   2
PC14   3
PC15   4
PA0   5
PA1   6
PA2   7
PA3   8
PA4   9
PA5   10
PA6   11
PA7   12
PB0   13
PB1   14
PB10   15
PB11   16
NRST   17
       18
       19
       20

J101
Conn_01x20

+3V3 GND +5V

1
2
3
4   PB9
5   PB8
6   PB7
7   PB6
8   PB5
9   PB4
10   PB3
11   PA15
12   PA12
13   PA11
14   PA10
15   PA9
16   PA8
17   PB15
18   PB14
19   PB13
20   PB12

J102
Conn_01x20

Reset button

+3V3

SW100
SW_Push

R104
10k

NRST

C110
10u

GND

BOOT switch
(normally tight to ground)
+3V3

SW101A
SW_DPDT_x2

BOOT0

R105
10k

GND

+3V3

SW102A
SW_DPDT_x2

BOOT1

R106
10k

GND

PC13 onboard LED

D100
LED Blue

PC13

R107
1k

GND

USB connection

+3V3

R202
1k5

VBUS

C200
100n

GND

U201
USBLC6-2SC6

USB_CMC_D−   1   6   USB_CMC_D+
USB_CONN_D− 3   4   USB_CONN_D+

GND

VBUS

J200

A4   VBUS
A5   CC1   USB_CONN_CC1
B5   CC2   USB_CONN_CC2

USB_CONN_D−   A7   D−
B7   D−
USB_CONN_D+   A6   D+
B6   D+

R200   R201
5k1   5k1

GND

A8   SBU1
B8   SBU2

A1 GND   S1 SHIELD

GND

USB_C_Receptacle_USB2.0_16P

USB_CMC_D−   1   4   USB_D−
L200
USB_CMC_D+   2   3   USB_D+

CMF3216F−900−2P−T
Common−Mode Choke Impedance: 90R

Signal Path:
Connector <−> ESD Protection <−> Common−Mode Choke <−> Pull−Up <−> MCU

Input filter

VBUS   +5V

L201
10n

C201   C202
1u   1u

GND   GND

DCR=0R15
I(DC)=500mA

5V to 3v3 converter

U200
TLV62569DBV

4   VIN   SW   3   BUCK_SW
1   EN   FB   5
2   GND

C203
22u

GND

L202
MWSA0603S−100MT
15u Sunlord

BUCK_SW

BUCK_FB

C204
22u

R203
100k

R204
22k

GND

+3V3

C205
DNP

I(load)=0.25A max
f(sw)=1.5MHz

V(out)=0.6*(1+100k/22k)=3.327V

Power LED

D200
LED Red

R205
1k

GND