U2D
IOB_0a 46
IOB_2a 47
IOB_3b_G6 44
IOB_4a 48
IOB_5b 45
IOB_6a 2
IOB_8a 4
IOB_9b 3
VCC_33 1
I
IOB_2A
IOB_3B_G6
IOB_4A
IOB_5B
IOB_6A
IOB_8A
IOB_9B
VCCIO_2
C16 0.1uF
C15 1.0uF
GND

U2B
IOT_36b 25
IOT_37a 23
IOT_38b 27
IOT_39a 26
IOT_41a 28
IOT_42b 31
IOT_43a 32
IOT_44b 34
IOT_45a_G1 37
IOT_46b_G0 35
IOT_48b 36
IOT_49a 43
IOT_50b 38
IOT_51a 42
RGB0 41
RGB1 40
RGB2 39
VCC_33 33
IOT_36B
IOT_37A
IOT_38B
IOT_39A
IOT_41A
IOT_42B
IOT_43A
IOT_44B
IOT_45A_G1
IOT_46B_G0
IOT_48B
IOT_49A
IOT_50B
IOT_51A
RGB0
RGB1
RGB2
VCCIO_0
C20 0.1uF
C5 1.0uF
GND

U2C
ICE40UP5K
CDONE 7
CRESET 8
IOB_13b 6
IOB_16a 9
IOB_18a 10
IOB_20a 11
IOB_22a 12
IOB_23b 21
IOB_24a 13
IOB_25b_G3 20
IOB_29b 19
IOB_31b 18
SPI_MOSI 14
SPI_MISO 17
SPI_CLK 15
SPI_CS 16
22
CDONE
CRESET_B
IOB_13B
IOB_16A
IOB_18A
IOB_20A
IOB_22A
IOB_23B
IOB_24A
IOB_25B_G3
IOB_29B
IOB_31B
IOB_32A_SPI_SO
IOB_33B_SPI_SI
IOB_34A_SPI_SCK
IOB_35B_SPI_SS
SPI_VCCIO1
R2 10K
VCC_33
C4 0.1uF
C21 1.0uF
GND

VCC_33
R3 10K
R4 10K
U3
SPI_CS 1 CS
SPI_MISO 2 DO/IO1
3 WP/IO2
4 GND
VCC 8
HOLD/IO3 7
CLK 6
DI/IO0 5
W25Qxx
SPI_CLK
SPI_MOSI
C6 0.1uF
GND

J11
VCC_33 1
2
SPI_MISO 3
CDONE 4
CRESET 5
SPI_CS 6
SPI_MOSI 7
IOT_37a 8
IOB_25b_G3 9
IOB_29b 10
11
IOB_31b 12
IOB_23b 13
IOT_36b 14
IOT_39a 15
IOT_41a 16
IOT_38b 17
IOT_44b 18
IOT_46b_G0 19
IOT_48b 20
GND

J12
1 VCC_5
2 SPI_CLK
3 IOT_50b
4 RGB2
5 RGB0
6 IOT_49a
7 IOB_13b
8 IOB_16a
9 IOB_8a
10 IOB_9b
11
12 IOB_6a
13 IOB_4a
14 IOB_5b
15 IOB_2a
16 IOB_0a
17 IOB_3b_G6
18 RGB1
19 IOT_45a_G1
20 NEO_OUT

C19 0.1uF
X1 EN OUT GND Vdd
CLK_OSC_16MHZ
J2 shorting
GND
Solder shorting block to disable clk source.
FPGA switch and LEDs

J1 Boot0
boot0 = 0, boot from flash
boot0 = 1, bootloader (shorted)
J1 shorting
BOOT0

R8 10K
NRST

U4
STM32F042F6
NRST 4
PF0 2
PF1 3
PB1 14
PB8 1
VDD 16
VDDA 5
VSSA 15
PA0 6
PA1 7
PA2 8
PA3 9
PA4 10
PA5 11
PA6 12
PA7 13
PA9 17
PA10 18
PA13 19
PA14 20
PA0 IOB_20a
SPI_CS
PA2 IOB_22a
PA3 IOB_24a
LED
SPI_CLK
SPI_MISO
SPI_MOSI
USB_DM
USB_DP
SWD
SWCLK
CDONE
CRESET
PB1 IOB_18a
Board revision
{PA0,PB1} 00 = revA

R10 220
D3 BLUE LED
J7
R11 100K

VCC_5
D1 VDD DIN DOUT VSS RGB
IOT_43a
NEO_OUT
WS2812B_like
C18 0.1uF
R5 100K
IOT_51a
WHITE micro push
SW1
R13 10K
IOT_42b
R12 220
D4 YLW LED
R6 100K
R7 100K
SW2
RED micro push
C14 0.1uF

C17 0.1uF
GND

J9
USB_A
VBUS 1
USB_DP 3
USB_DM 2
Shield GND
D5 NSR0530_Schottky
VCC_5
C1 0.1uF
C2 4.7uF
U1
OUT2 1
GND 2
EN2 3
OUT1 6
IN 5
EN1 4
AP7312-1233
C7 0.1uF
C9 4.7uF
GND

C22 0.1uF
C8 4.7uF
100
R1
VCC_PLL
VCC_12
U2A
PAD
29 VCCPLL
5 VCC[2]
24 VPP_2V5
GND[3]
C3 0.1uF
C11 1.0uF
C10 1.0uF
C12 4.7uF
C13 0.1uF
GND

R9 220
D2 GRN LED
GND