POWER INPUT

J3
CON_12VDC_IN
F1 Polyfuse
D1 SS54
D2 SMBJ12A
+12V
C1 1000uF
GND_PWR

PROGRAMMING CONNECTION

P1
USB_C_Plug_USB2.0
+VBUS
VBUS — A4
CC — A5
VCONN — B5
R1 5.1k
GND_LOGIC
D- — A7 USB_D-
D+ — A6 USB_D+
SHIELD
S1
A1 GND
GND_LOGIC

+VBUS
F2 Polyfuse
D4 SS14
+5V
D5 SMBJ12A
GND_LOGIC

LED CONNECTORS - OUTPUTS

J1
RGB_Strip
4 +5V
3 LED_R(-)
2 LED_G(-)
1 LED_B(-)
D3 SMAJ5.0A
GND_PWR

J2
CW/WW_Strip
3 +12V
2 LED_CW(-)
1 LED_WW(-)

POWER PROCESSING

+12V
C2 15uF
C3 15uF
C4 15uF
C5 0.47uF
U1 LM2678T-ADJ
INPUT
ON/OFF
CB
FB
GND
SWITCH_OUTPUT
C8 0.01uF
22uH L1
D6 MBR735
+5V
C9 180uF
C10 180uF
GND_PWR

U2 TPS7A20xxxDQN
+5V
C6 1uF
100k R6
IN
EN
OUT
GND
Pad
+3V3
C7 1uF
GND_LOGIC

MICROCONTROLLER

+3V3
C11 10uF
+3V3
C12 0.1uF
GND_LOGIC
SW1
Value: uC_Reset
+3V3
R13 10k
C14 0.1uF
C16 1uF
GND_LOGIC
+3V3
U3 ESP32-C3-WROOM-02
EN
3V3
IO0
IO1
IO2
IO3
IO4
IO5
IO6
IO7
IO8
IO9
IO10
IO18
IO19
GND
IO20/RXD
IO21/TXD
Signal_WW
Signal_CW
Signal_R
Signal_G
Signal_B
USB_D-
USB_D+
R14 22
R15 22
C13 22pF
C15 22pF
GND_LOGIC

LED'S POWER CONTROL

Signal_R
R2 100
Q1 IRLZ44N
R4 10k
LED_R(-)
GND_PWR

Signal_G
R7 100
Q3 IRLZ44N
R9 10k
LED_G(-)
GND_PWR

Signal_B
R11 100
Q5 IRLZ44N
R12 10k
LED_B(-)
GND_PWR

Signal_WW
R3 100
Q2 IRLZ44N
R5 100k
LED_WW(-)
GND_PWR

Signal_CW
R8 100
Q4 IRLZ44N
R10 10k
LED_CW(-)
GND_PWR

GND CONNECTION

NT2
NetTie_4
GND_PWR
GND_LOGIC

InGnia Tech
Sheet: /
File: RGB_LED_&_High_Dencity_CCT_Controller.kicad_sch
Title: High-Density RGB+CCT LED Strip Controller
Size: A3
Date:
Rev: Fredys Matos
KiCad E.D.A. 9.0.5
Id: 1/1