[1] POWER

Power

File: Power.kicad_sch

[2] MCU

MCU

File: MCU.kicad_sch

MECHANICAL

H1 MountingHole

[3] SENSORS & FEEDBACK

sense_feedback

File: sense_feedback.kicad_sch

[4] STEREO AUDIO CODEC

Audio CODEC

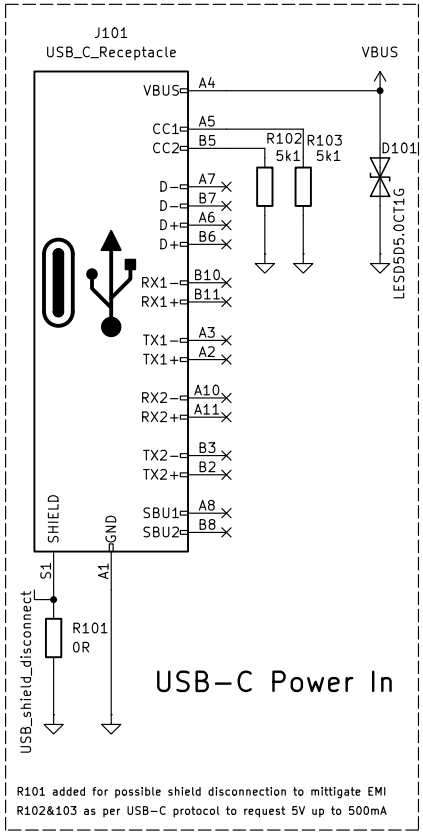
File: codec.kicad_sch

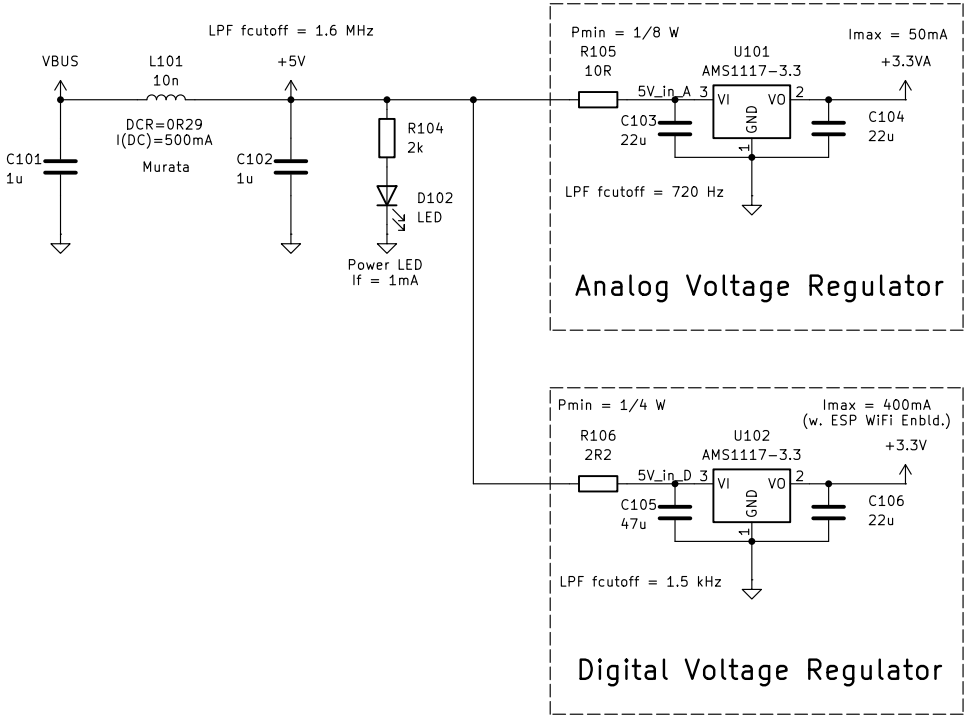
BACKLOG

SPI CS PULL-UP ?
CODEC IN2, OUT2 PULL-DOWNs ?
FOOTPRINT SELECN. {JACK, SW}

I2C Bus Topology: ESP32 <> Pull-up Resistors <> ICP20100 (BARO) <> LSM6DSL (MPU) <> RC FILTER <> ES8388 (CODEC)
SPI Bus Topology: ESP32 <> MicroSD Card
I2S Bus Topology: ESP32 <> Resistors (counter. Signal Reflection) <> ES8388 (CODEC)

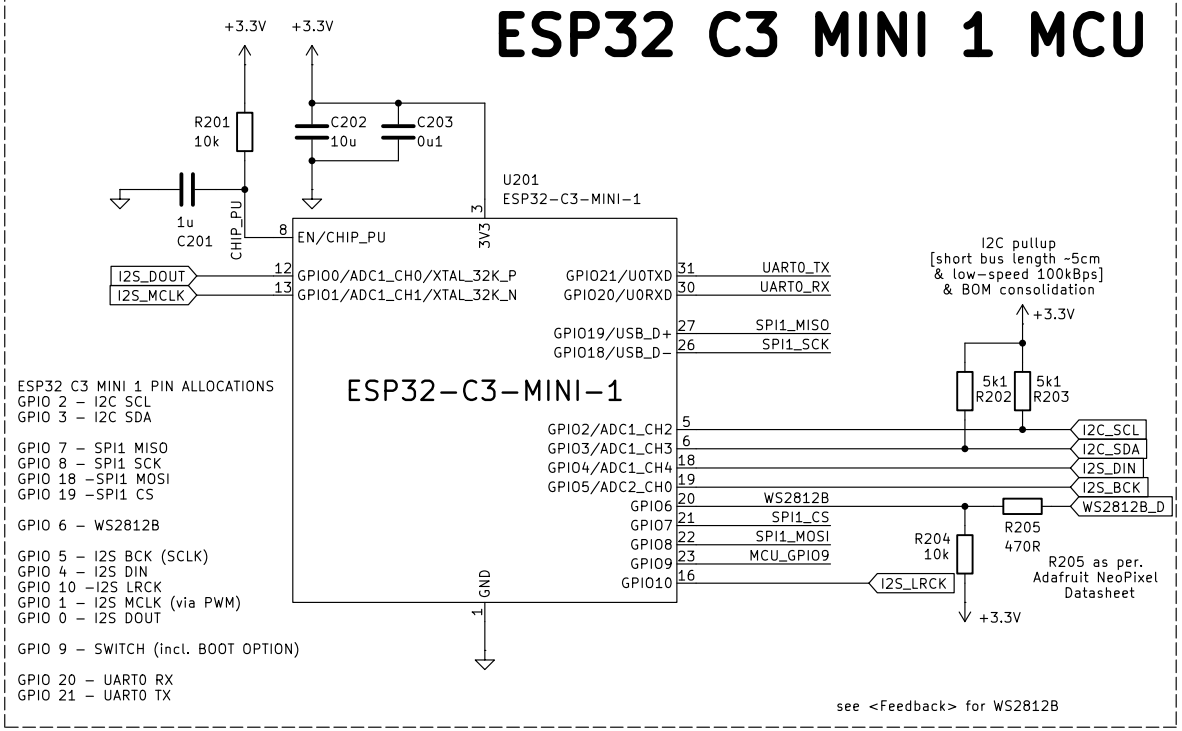
Sheet: / File: basmsoundcard.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.8		Id: 0/5



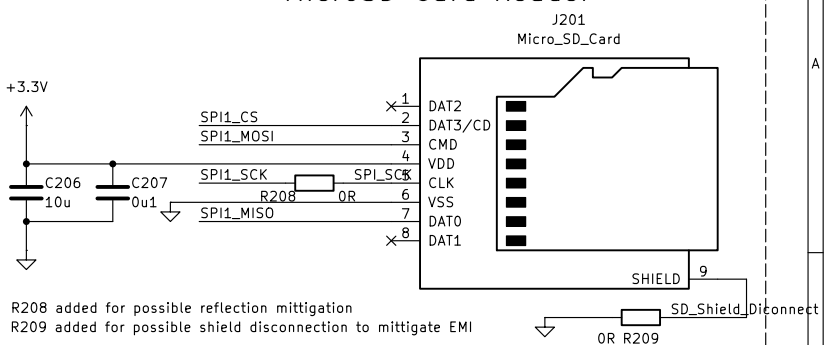


Sheet: /Power/		
File: Power.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.8		Id: 1/5

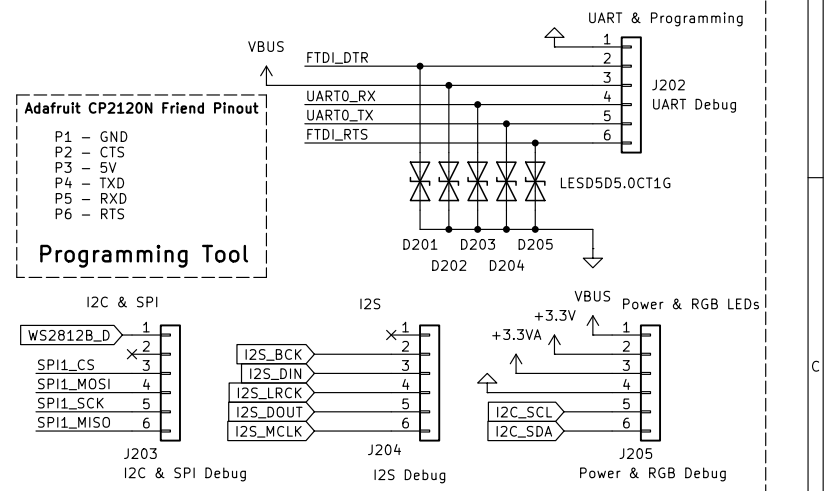
ESP32 C3 MINI 1 MCU



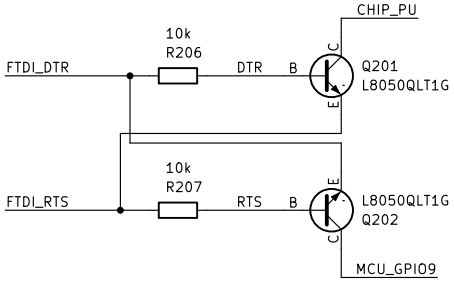
MicroSD Card Reader



Programming & Debug Headers

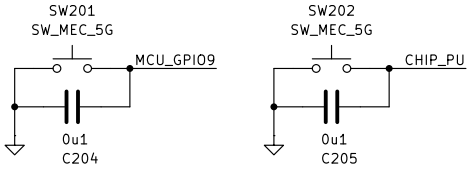


Auto-Programming



implemented as per
1. ESP32-C3-DevKitM-1 Schematic Diagram Rev1.0

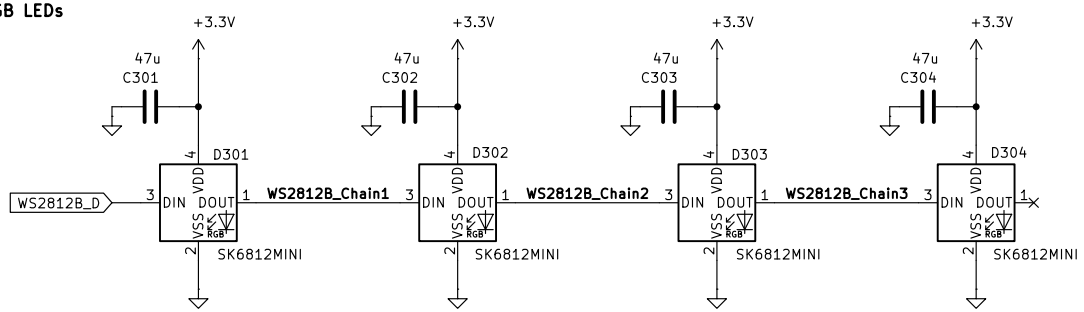
Programming Switches



implemented as per
1. ESP32-C3-DevKitM-1 Schematic Diagram Rev1.0

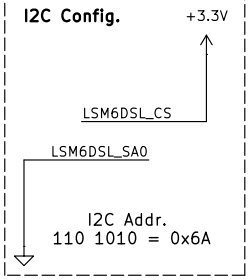
Sheet: /MCU/		
File: MCU.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.8		Id: 2/5

RGB LEDs

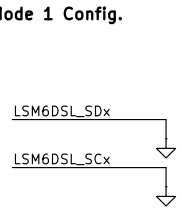


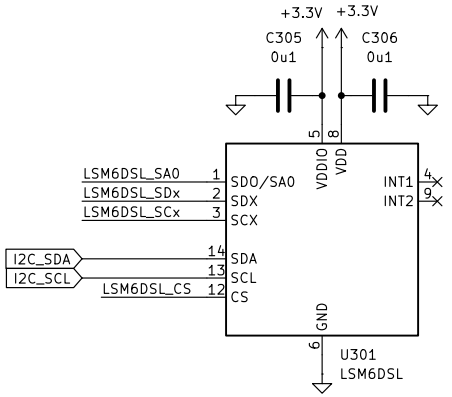
6-DoF IMU

I2C Config.



Mode 1 Config.

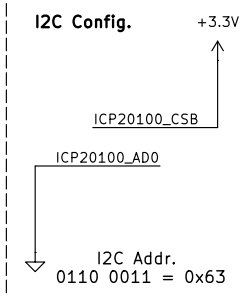


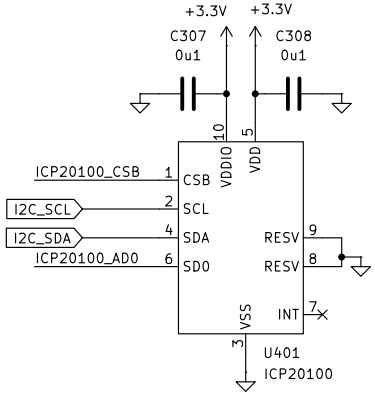


I2C Pull-ups on MCU Sheet
CS tied HI for I2C (App. Note 6.1)
LSM6DSL Connections as per. Application Hints Mode 1 (App. Note 7.1)

Barometric Sensor

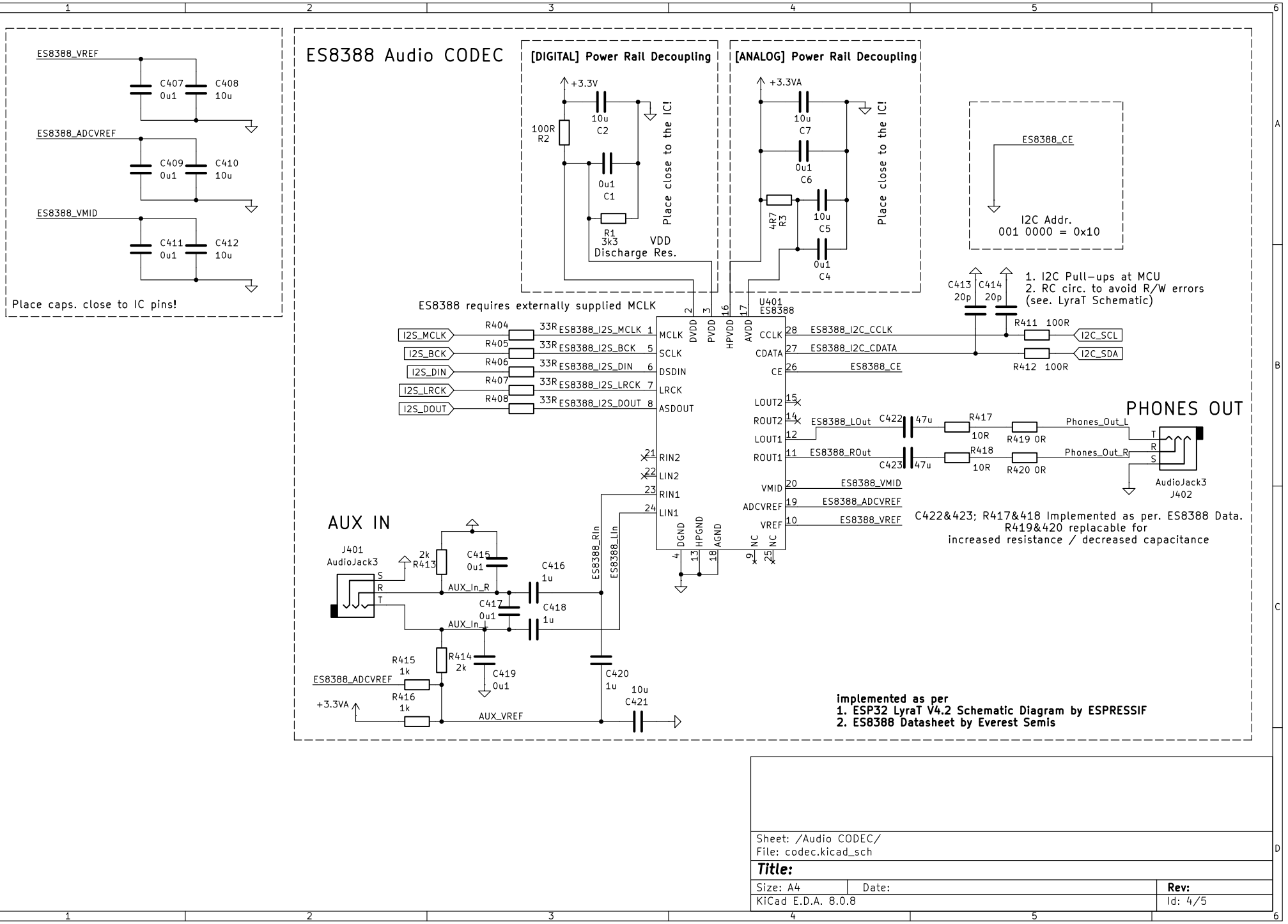
I2C Config.





I2C Pull-ups on MCU Sheet
CSB tied HI for I2C (App. Note 4)
ICP20100 Connections as per. Application Notes

Sheet: /sense_feedback/ File: sense_feedback.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.8		Id: 3/5


ES8388_VREF
C407 0u1
C408 10u
ES8388_ADCVREF
C409 0u1
C410 10u
ES8388_VMID
C411 0u1
C412 10u
Place caps. close to IC pins!
ES8388 Audio CODEC
[DIGITAL] Power Rail Decoupling
+3.3V
100R R2
10u C2
0u1 C1
R1 3k3 VDD Discharge Res.
Place close to the IC!
[ANALOG] Power Rail Decoupling
+3.3VA
10u C7
0u1 C6
4R7 R3
10u C5
0u1 C4
Place close to the IC!
ES8388_CE
I2C Addr.
001 0000 = 0x10
1. I2C Pull-ups at MCU
2. RC circ. to avoid R/W errors
(see. LyraT Schematic)
ES8388 requires externally supplied MCLK
U401 ES8388
I2S_MCLK
I2S_BCK
I2S_DIN
I2S_LRCK
I2S_DOUT
R404 33R ES8388_I2S_MCLK 1
R405 33R ES8388_I2S_BCK 5
R406 33R ES8388_I2S_DIN 6
R407 33R ES8388_I2S_LRCK 7
R408 33R ES8388_I2S_DOUT 8
MCLK
SCLK
DSDIN
LRCK
ASDOUT
DVDD
PVDD
HPVDD
AVDD
CCLK 28 ES8388_I2C_CCLK
CDATA 27 ES8388_I2C_CDATA
CE 26 ES8388_CE
C413 20p
C414 20p
R411 100R
R412 100R
I2C_SCL
I2C_SDA
PHONES OUT
LOUT2 15
ROUT2 14 ES8388_LOut
LOUT1 12
ROUT1 11 ES8388_ROut
C422 47u
C423 47u
R417 10R
R418 10R
R419 0R
R420 0R
Phones_Out_L
Phones_Out_R
T
R
S
AudioJack3 J402
RIN2 21
LIN2 22
RIN1 23
LIN1 24
VMID 20 ES8388_VMID
ADCVREF 19 ES8388_ADCVREF
VREF 10 ES8388_VREF
DGND 4
HPGND 13
AGND 18
NC 9
NC 25
C422&423; R417&418 Implemented as per. ES8388 Data.
R419&420 replacable for
increased resistance / decreased capacitance
AUX IN
J401 AudioJack3
S
R
T
2k R413
C415 0u1
C416 1u
C417 0u1
C418 1u
AUX_In_R
AUX_In
ES8388_RIn
ES8388_LIn
R414 2k
C419 0u1
R415 1k
R416 1k
ES8388_ADCVREF
+3.3VA
AUX_VREF
C420 1u
C421 10u
implemented as per
1. ESP32 LyraT V4.2 Schematic Diagram by ESPRESSIF
2. ES8388 Datasheet by Everest Semis
Sheet: /Audio CODEC/
File: codec.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. 8.0.8
Id: 4/5