Receive

Bandpass Sallenkey with 60kHz from Ti Tool and
changed to have higher input impedance. Also added mid points to
allow single supply

Diode bridge,
so that bus polarity
does not matter

Bus

J1
MB10S
D1

R1 130k
R32 100k
C2 100p
C6 100n
C4 100p
R3 82k
R4 82k
U2 LMV321
R12 2k4
R5 5k1
R7 5k1
R10 18k

V+ U6C LM393
C17 100n

RX_ANA

R27 4k7
R25 2k4
R26 4k7
R24 10k
R23 10k
U6A LM393
R28 47k
R29 10k

RX

Vhigh: 1.63V
Vlow: 1.33V

~ 0.8V hysteresis

RX_THRESH
R22 18k
U6B LM393
R30 47k
R31 10k

RX_DAC

Send

C1 47n
U1 TLV9351
Sine (filtered PWM) out
R11 10k
U3 LMV321
R15 18k
R18 82k
C8 100p
C15 100n
R20 130k
R34 0
PWM IN
TX

R2 22k
R6 18k
R33 18k
C7 100n
R14 1k
R16 18k
R17 5k1
R19 82k
C9 100p
R21

ON/OFF and Buffer Stage

Power

ESP32mini has Schottky on its
5V output

J4
D2 SS14
C5 100n
C12 10u
C11 100n
Q1 MMBT5401
R8 10k
R9 47k

Make TX turn on/off,
so that during
non-transmission
the Gira Bus is
not loaded by the 47nF

Alternative 5V input

Main supply is 5V from either USB or 5V input.
3.3V is from ESP, powered by the 5V.

C3 100n
Q2 MMBT2222A
R13 10k
TX_EN

C19 100u
C16 100n
C13 100n
C14 10u

Filter
"bad" ESP clone boards
power supply to
avoid brownout

C20 100u

{GPIO}

ESP32 Mini

J2 ESP_left
GND, NC, IO_39/SVN, IO_35, IO_33, IO_34, IO_14/TMS, NC, IO_09/SD2, CMD
RST, IO_36/SVP/A0, IO_26/D0, IO_18/D5, IO_19/D6, IO_23/D7, IO_05/D8, 3V3, IO_13/TCK, IO_10/SD3
RX_THRESH
3.3V

J3 ESP_right
TXD, RXD, IO_22/D1/SCL, IO_21/D2/SDA, IO_17/D3, IO_16/D4, GND, VCC (USB), TDO, SD0
GND, IO_27, IO_25, IO_32, IO_12/TDI, IO_04, IO_00, IO_02, SD1, CLK
RX_DAC, RX
TX_EN, TX, RX_ANA
5V, GND

ESP32 Footprint and Symbol thanks to
https://github.com/r0oland/ESP32_mini_KiCad_Library

Additional BoM items:

Plugin Stecker

Alternative?
https://www.phoenixcontact.com/de-de/produkte/
leiterplattenstecker-mc-15-2-st-381-1803578

Silkscreen Symbols:

GDoor

Documentation:
For more information check out our Github Repo:
https://github.com/gdoor-org/gdoor

Sheet: /
File: esp32.kicad_sch
Title: ESP32 Mini
Size: A3 | Date: | Rev: V3.1
KiCad E.D.A. kicad 7.0.10-7.0.10-ubuntu23.04.1 | Id: 1/1