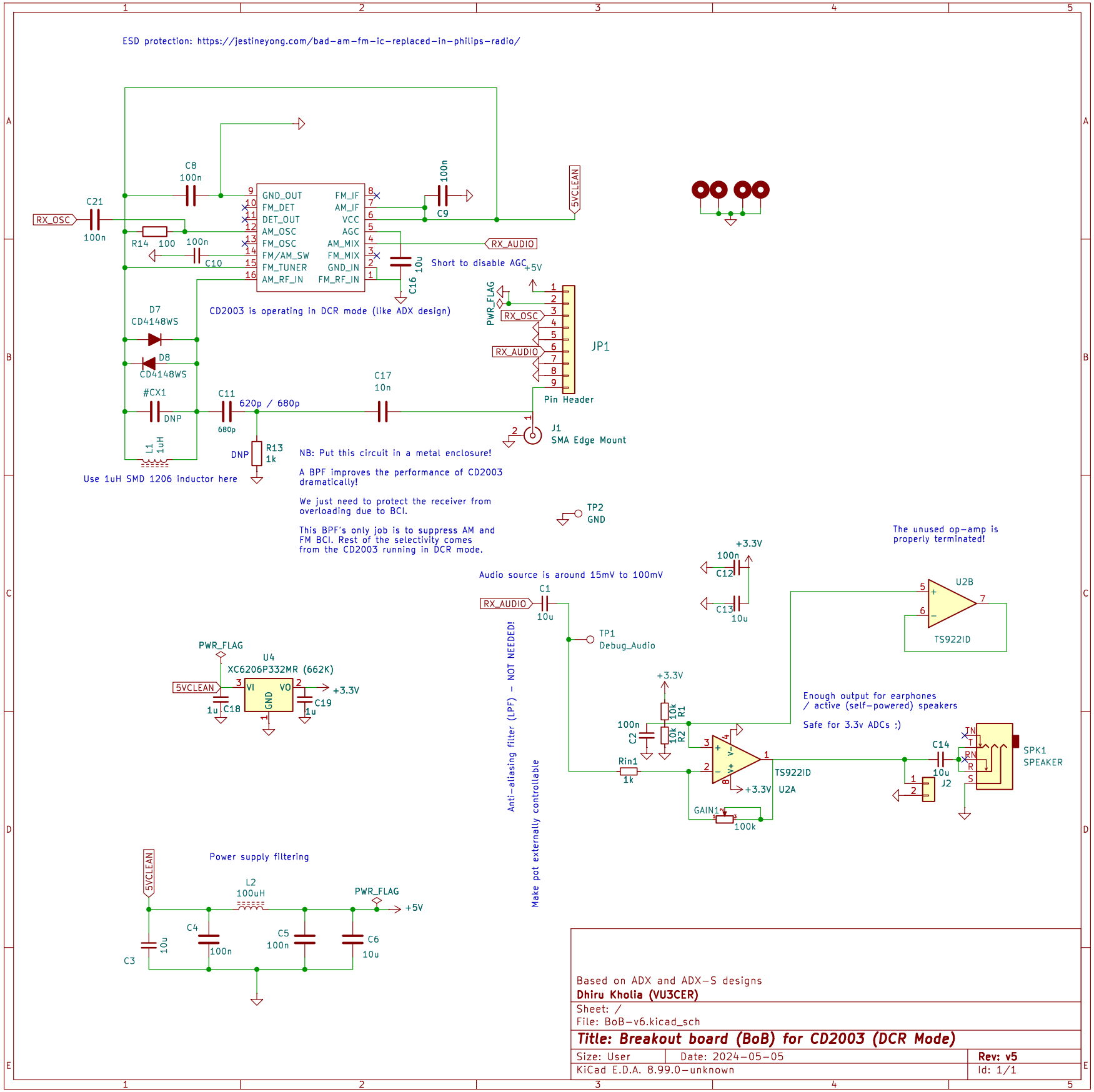
ESD protection: https://jestineyong.com/bad-am-fm-ic-replaced-in-philips-radio/
C8
100n
C21
100n
RX_OSC
R14
100
100n
C10
GND_OUT
FM_DET
DET_OUT
AM_OSC
FM_OSC
FM/AM_SW
FM_TUNER
AM_RF_IN
FM_IF
AM_IF
VCC
AGC
AM_MIX
FM_MIX
GND_IN
FM_RF_IN
C9
100n
5VCLEAN
RX_AUDIO
C16
10u
Short to disable AGC
+5V
PWR_FLAG
RX_OSC
RX_AUDIO
JP1
Pin Header
CD2003 is operating in DCR mode (like ADX design)
D7
CD4148WS
D8
CD4148WS
#CX1
DNP
C11
620p / 680p
680p
C17
10n
J1
SMA Edge Mount
L1
1uH
DNP
R13
1k
Use 1uH SMD 1206 inductor here
NB: Put this circuit in a metal enclosure!
A BPF improves the performance of CD2003 dramatically!
We just need to protect the receiver from overloading due to BCI.
This BPF's only job is to suppress AM and FM BCI. Rest of the selectivity comes from the CD2003 running in DCR mode.
TP2
GND
The unused op-amp is properly terminated!
+3.3V
100n
C12
C13
10u
U2B
TS922ID
Audio source is around 15mV to 100mV
RX_AUDIO
C1
10u
TP1
Debug_Audio
PWR_FLAG
U4
XC6206P332MR (662K)
5VCLEAN
VI
VO
GND
+3.3V
1u
C18
C19
1u
+3.3V
10k
R1
100n
C2
10k
R2
Rin1
1k
TS922ID
U2A
+3.3V
GAIN1
100k
Anti-aliasing filter (LPF) - NOT NEEDED!
Make pot externally controllable
Enough output for earphones / active (self-powered) speakers
Safe for 3.3v ADCs ;)
C14
10u
J2
SPK1
SPEAKER
IN
T
RN
R
S
Power supply filtering
5VCLEAN
L2
100uH
PWR_FLAG
+5V
C3
10u
C4
100n
C5
100n
C6
10u
Based on ADX and ADX-S designs
Dhiru Kholia (VU3CER)
Sheet: /
File: BoB-v6.kicad_sch
Title: Breakout board (BoB) for CD2003 (DCR Mode)
Size: User
Date: 2024-05-05
Rev: v5
KiCad E.D.A. 8.99.0-unknown
Id: 1/1