

Note that on some MCUs I2C doesn't start properly unless you add a 2.7 pF capacitor between SDA and GND. To my knowledge this is a hardware issue in this MCU family. See "STM32F10xx8 STM32F10xxB errata sheet", section 2.8.7 "I2C analog filter may provide wrong value [...]". Personally I've seen this issue several times and adding a capacitor always helped.

$$0.24\mu = 71 \text{ } @ \text{ } 150-6$$

Sheet: /
File: hbr-mk2-digital.kicad_sch

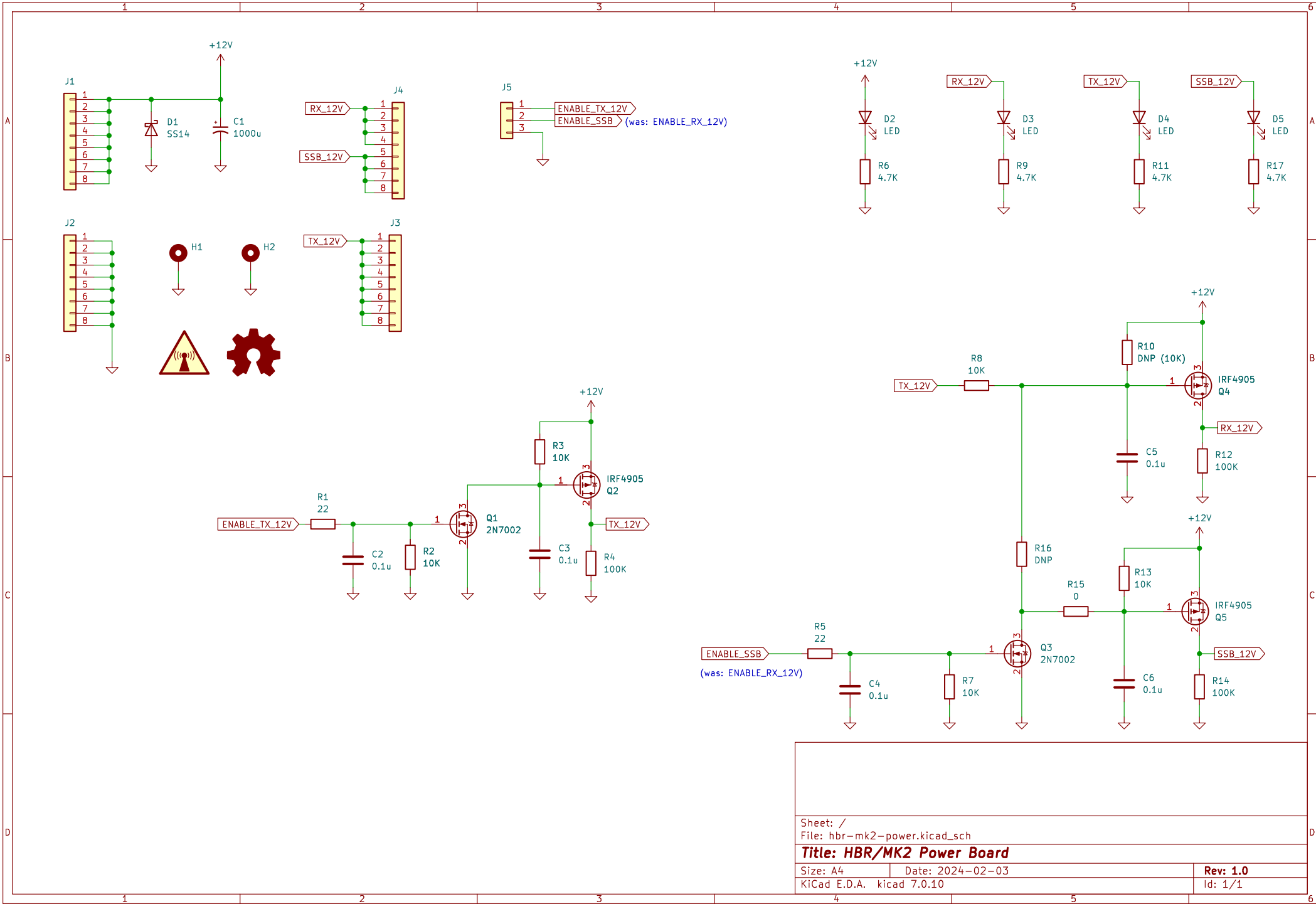
Title: HBR/MK2 Digital Board

Size: A4 Date: 2024-02-03

KiCad E.D.A. kicad 7.0.10

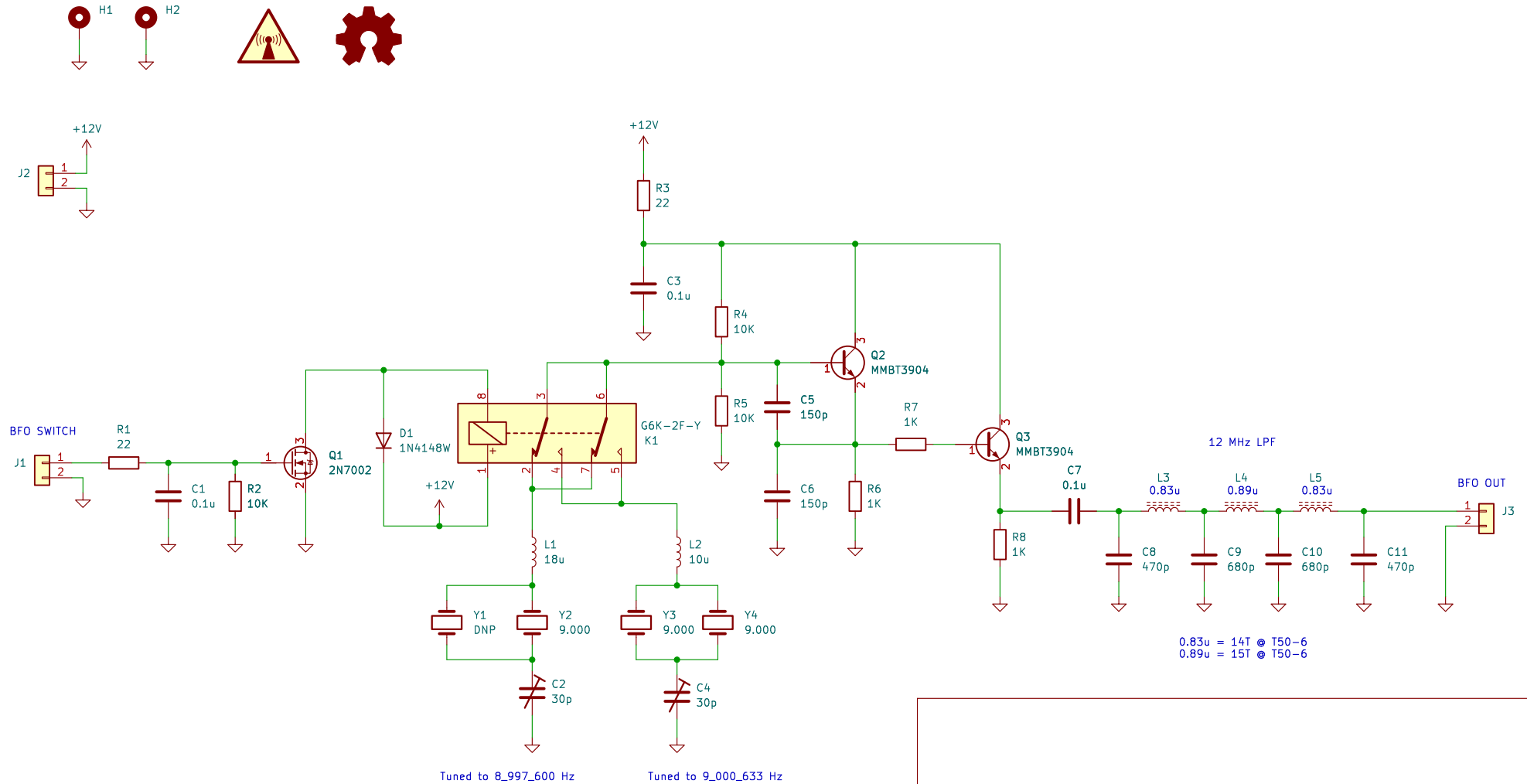
Rev: 1.0

Id: 1/1



== General notes ==

- HFD4/12 relay is a full equivalent of G6K-2F-Y
- KT3142A transistor is a full equivalent of 2N2369A
- KT3142A can be replaced with another transistor with $f_T \geq 500$ Mhz
- ADE-6 mixers can be replaced with ADE-1, ADE-2, etc

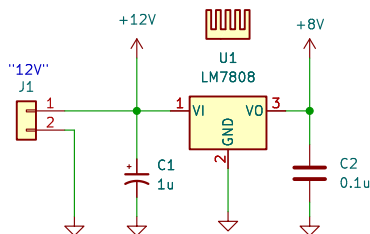


Some experimentation with different
coils and crystals may be required.

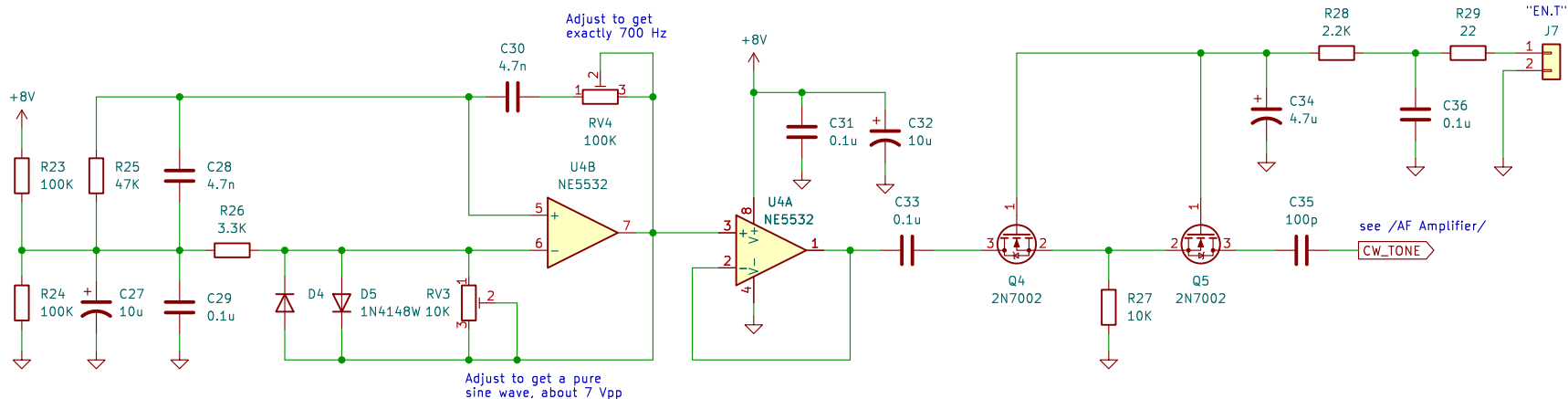
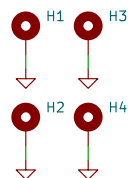
Sheet: /	
File: hbr-mk2-bfo.kicad_sch	
Title: HBR/MK2 BFO Board	
Size: A4	Date: 2024-02-03
KiCad E.D.A. kicad 7.0.10	Rev: 1.0
Id: 1/1	

AF Amplifier

File: af-amplifier.kicad_sch



== General notes ==
 - HFD4/12 relay is a full equivalent of G6K-2F-Y
 - KT3142A transistor is a full equivalent of 2N2369A
 - KT3142A can be replaced with another transistor with ft >= 500 Mhz
 - ADE-6 mixers can be replaced with ADE-1, ADE-2, etc

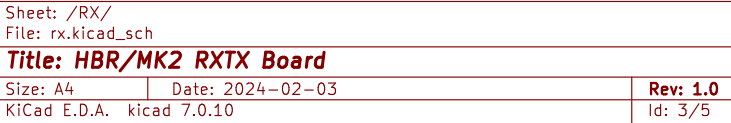


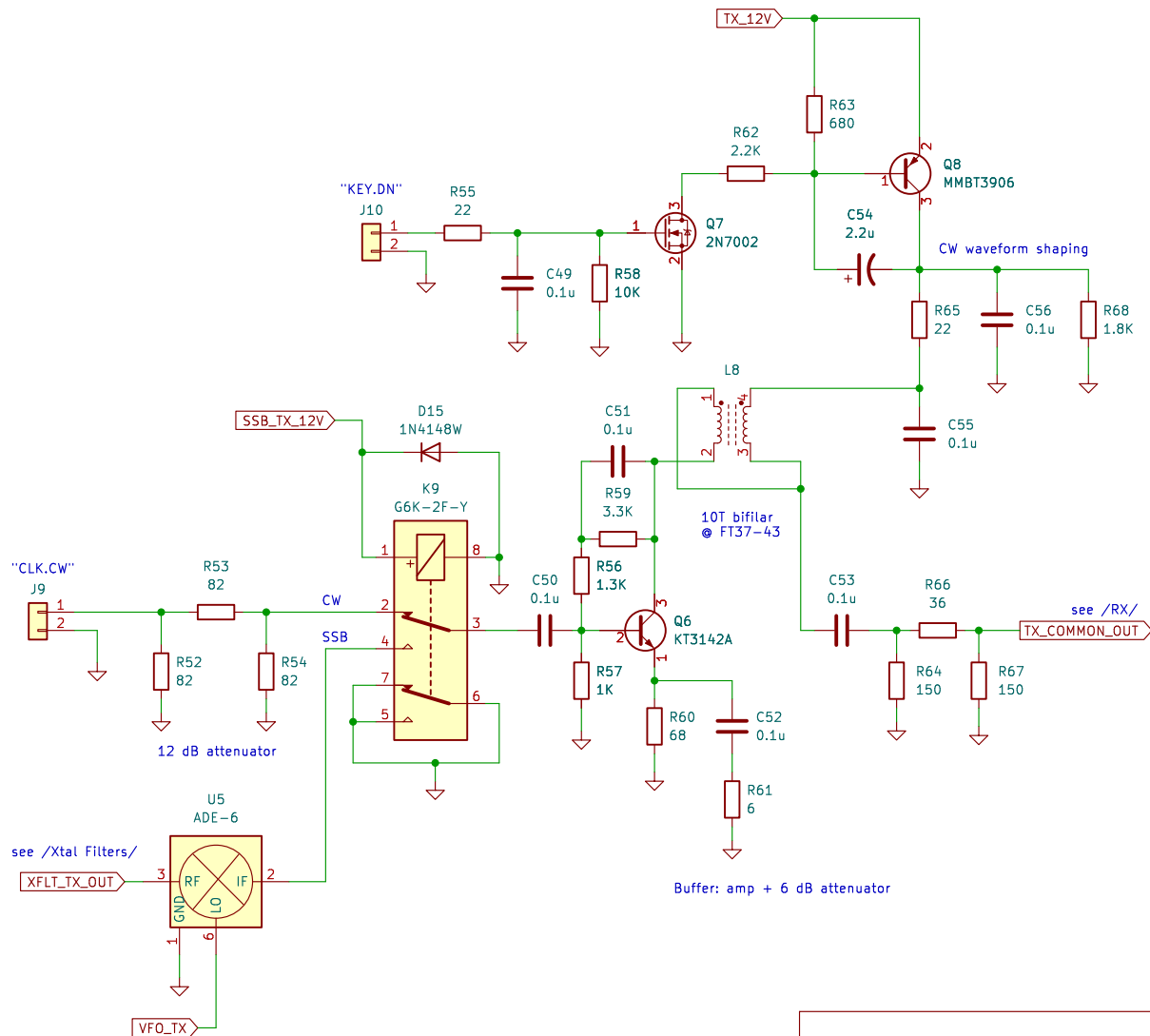
Sheet: /
 File: hbr-mk2-af.kicad_sch

Title: HBR/MK2 AF Board

Size: A4 Date: 2024-02-03
 KiCad E.D.A. kicad 7.0.10

Rev: 1.0
 Id: 1/2



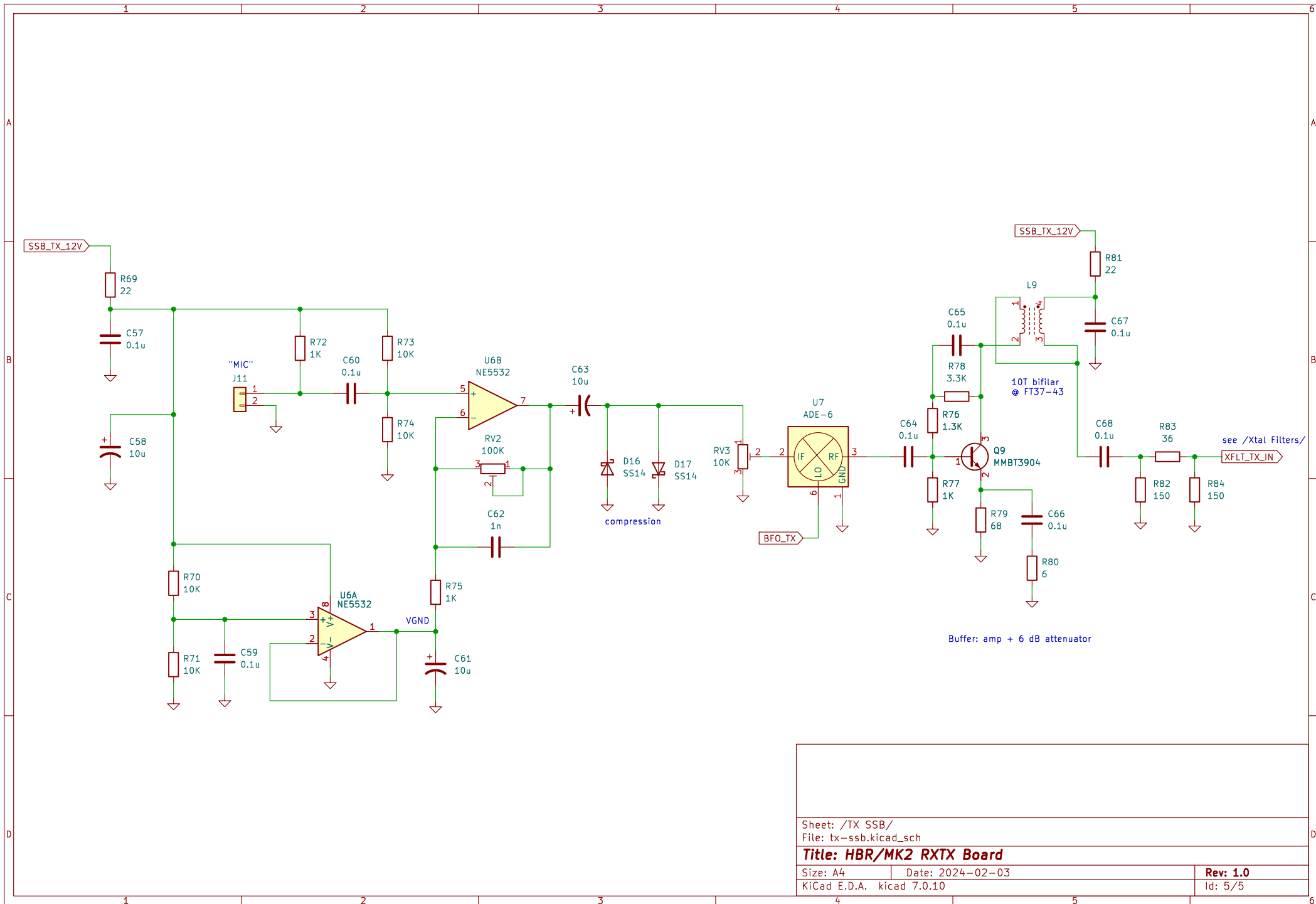


Sheet: /TX Common/
File: tx-common.kicad_sch

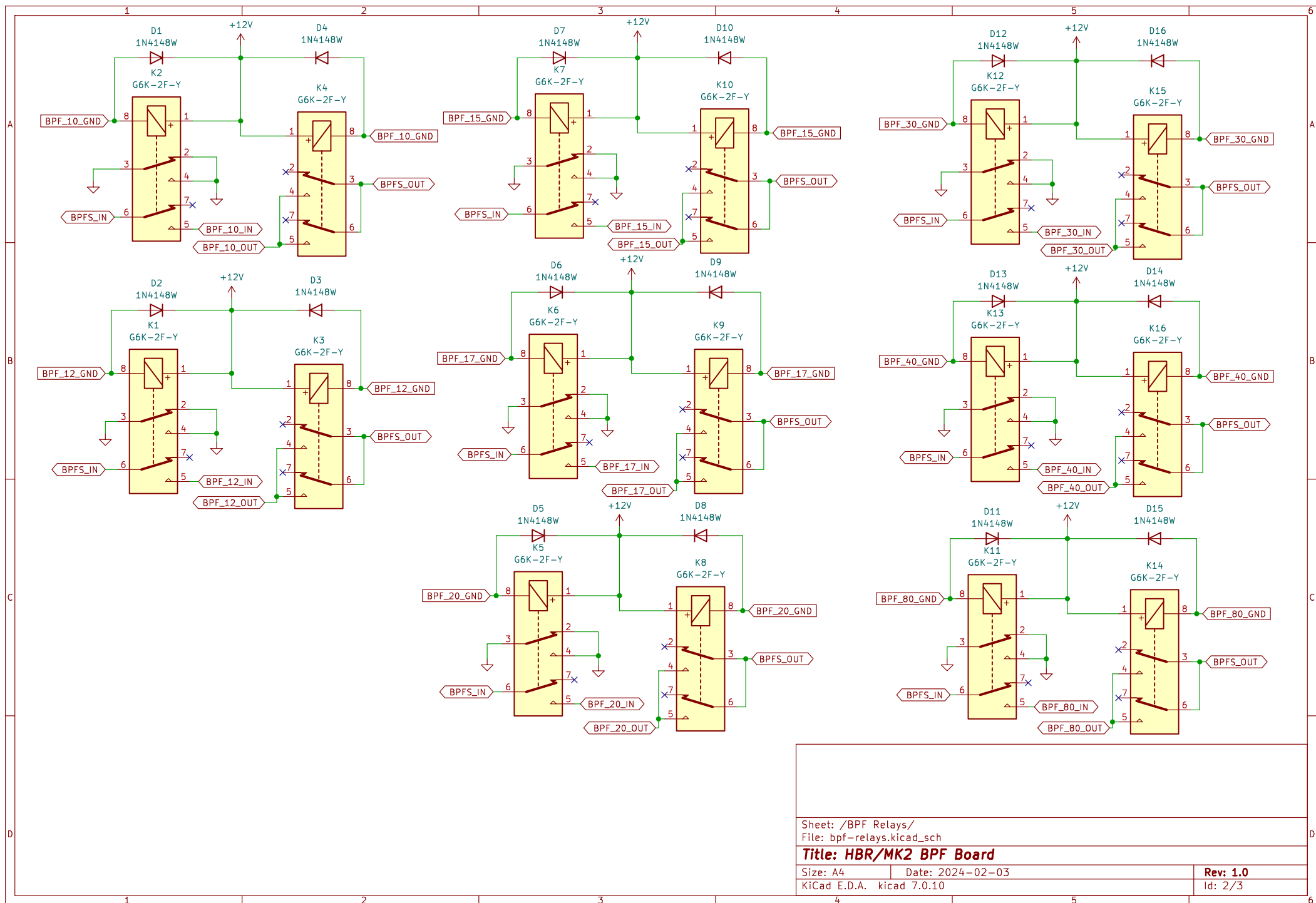
Title: HBR/MK2 RXTX Board

Size: A4 Date: 2024-02-03
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Rev: 1.0
Id: 4/5



Sheet: /TX SSB/	
File: tx-ssb.kicad_sch	
Title: HBR/MK2 RXTX Board	
Size: A4	Date: 2024-02-03
KiCad E.D.A. kicad 7.0.10	Rev: 1.0
Id: 5/5	



Sheet: /BPF Relays/

File: bpf-relays.kicad_sch

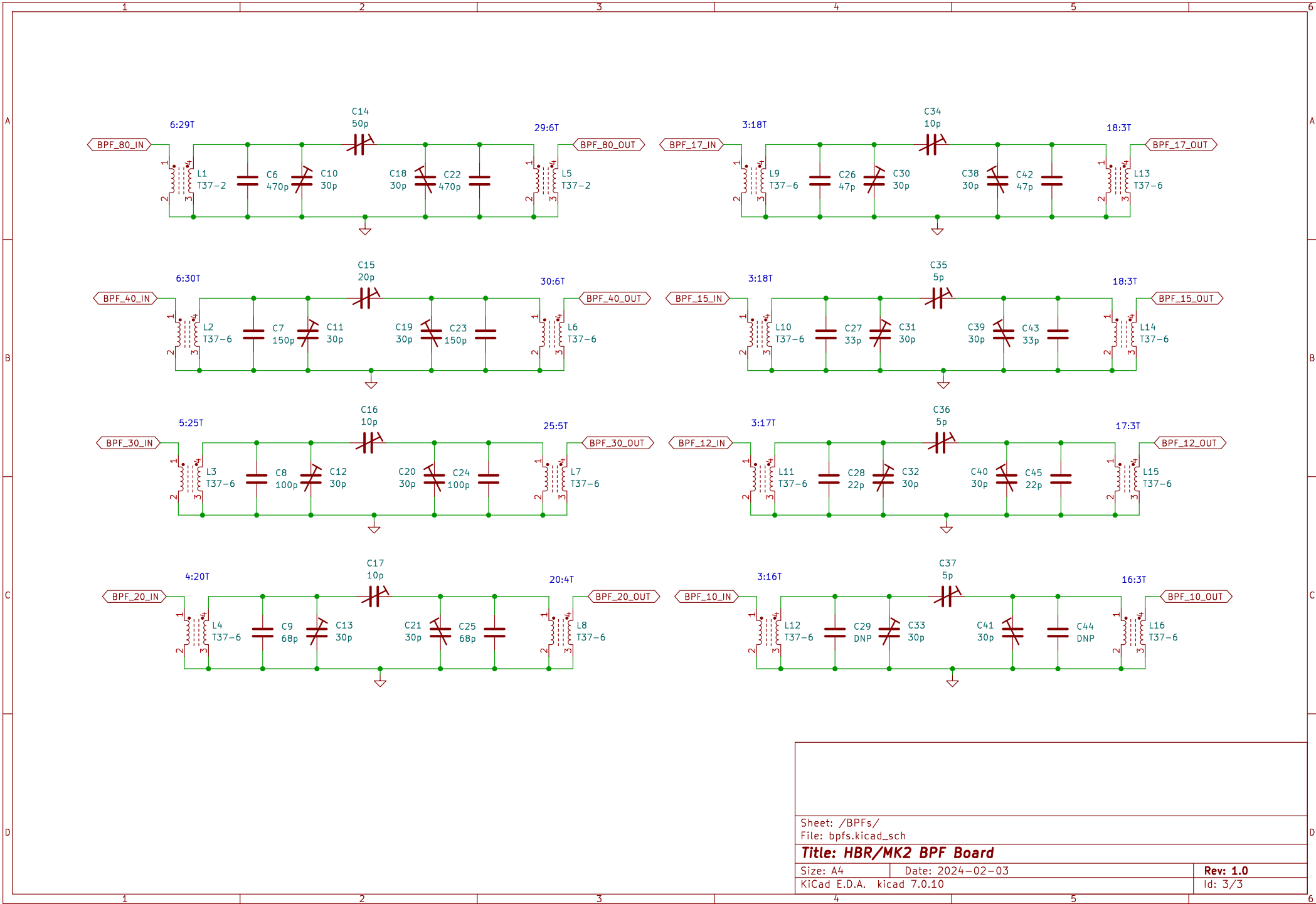
Title: HBR/MK2 BPF Board

Size: A4 Date: 2024-02-03

KiCad E.D.A. kicad 7.0.10

Rev: 1.0

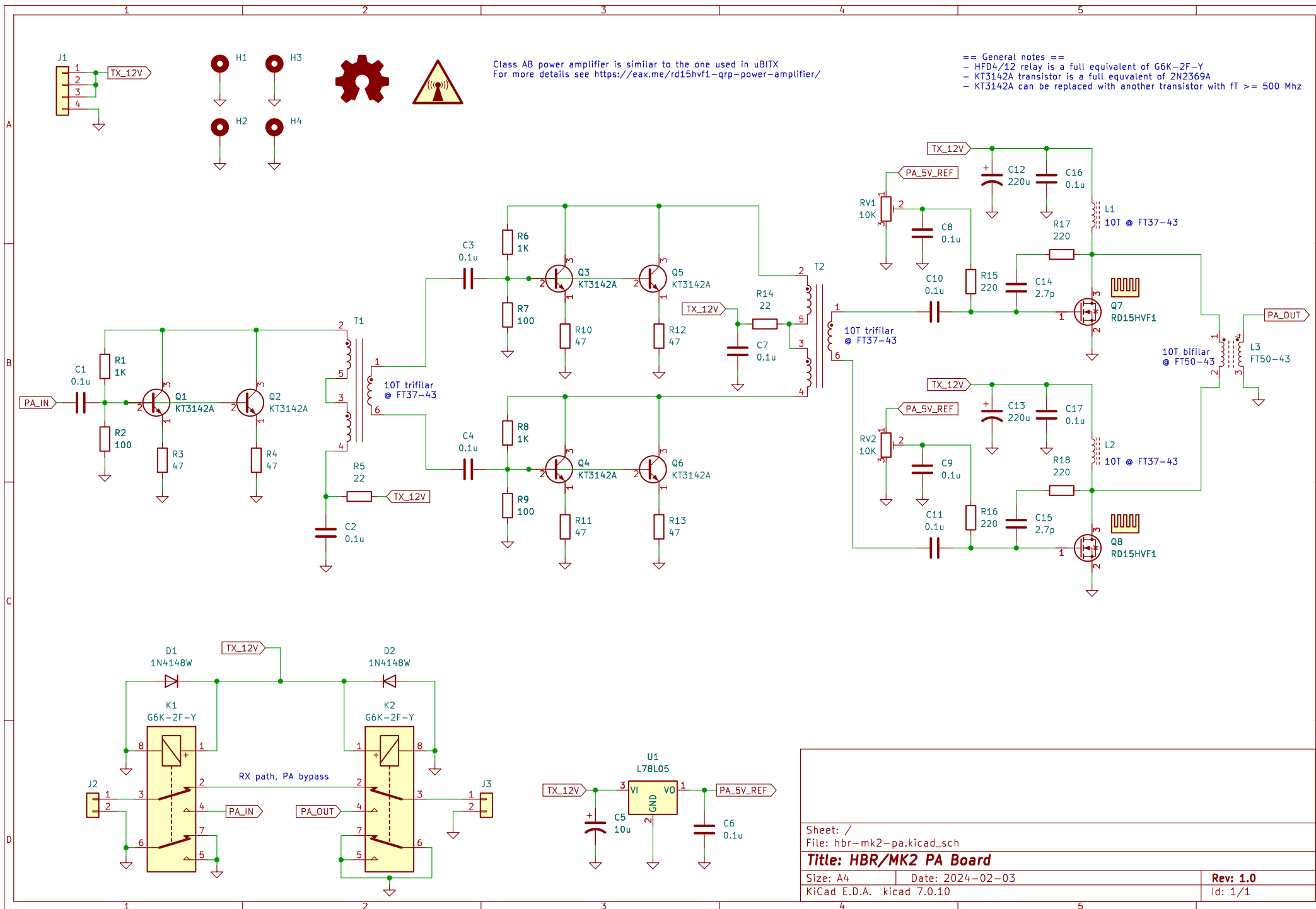
Id: 2/3



Class AB power amplifier is similar to the one used in uBITX
For more details see <https://eax.me/rd15hvf1-grp-power-amplifier/>

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Sheet: /
File: hbr-mk2-pa.kicad_sch

Title: HBR/MK2 PA Board

Size: A4 Date: 2024-02-03

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Rev: 1.0

Id: 1/1

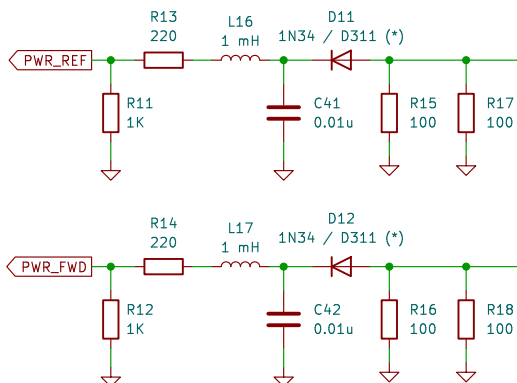
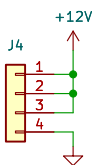
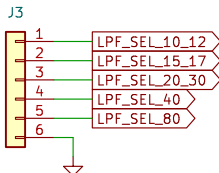
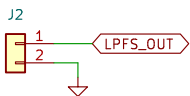
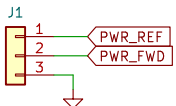
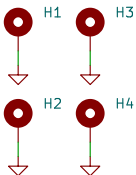
LPFs



File: lpfs.kicad_sch

== General notes ==

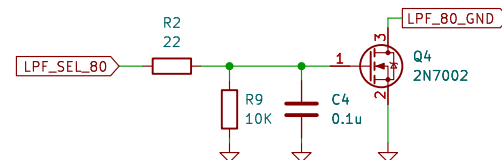
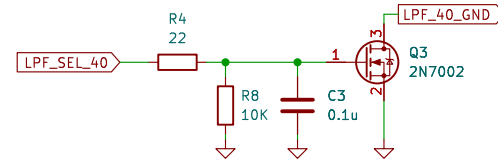
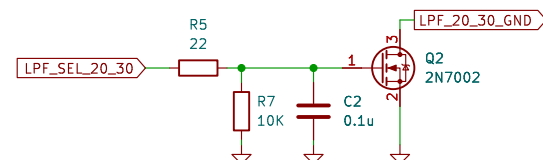
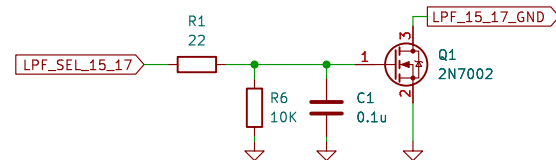
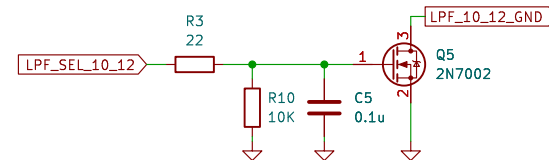
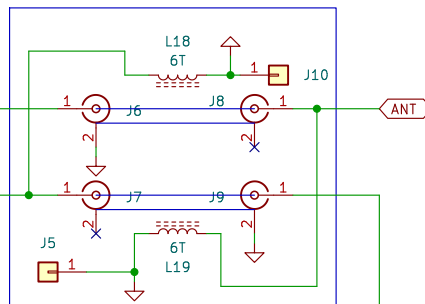
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(*) Matched pair

see /LPFs/
LPFS_IN

Tandem match / Stockton bridge @ BN61-202
Primary windings: RG-174 coax cables
Secondary windings: 6T enameled copper wire



Sheet: /
File: hbr-mk2-lpfs.kicad_sch

Title: HBR/MK2 LPF Board

Size: A4 Date: 2024-02-03

KiCad E.D.A. kicad 7.0.10

Rev: 1.0

Id: 1/2

