# prsb DD AF13 board.
# 4131
# 2020 ipro 1201v05a.
# 2020-12-08.

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The board front, Fig. 1. (81x51 = 4131) mm$^2$. This is a version of part of the AF chain in David Dean's 2m ARDF transmitter. In his design, it's the middle section that amplifies the AF. Before it, he has the AF generation and filtering. After it there is another filter that is mostly there to prevent RF from coming back into the AF section.

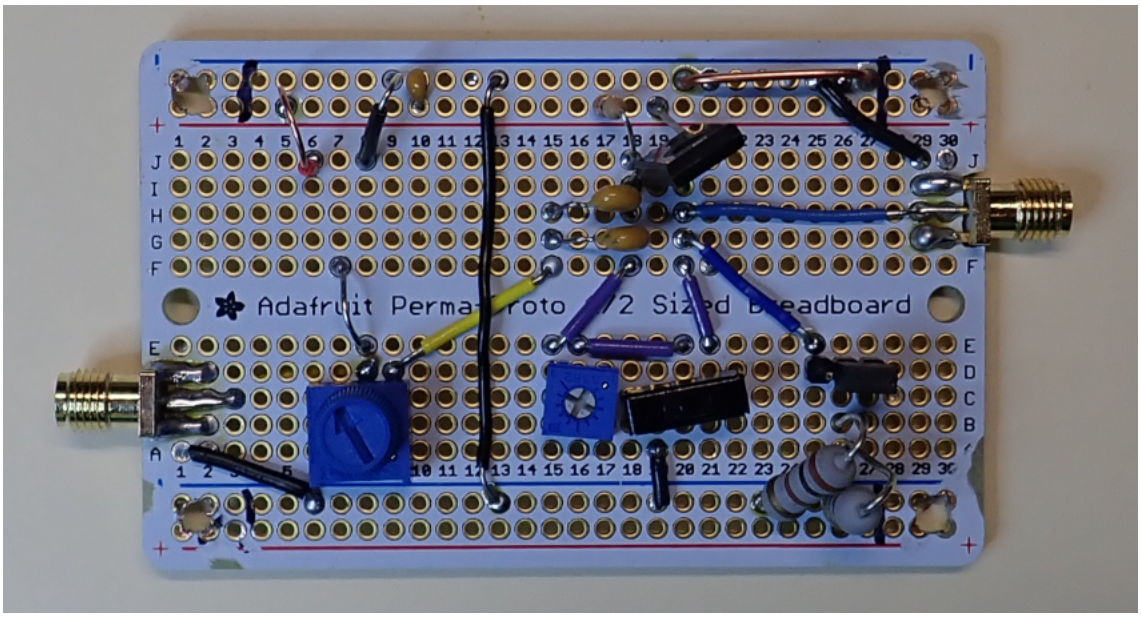

Figure 1: Front of board. Signal flows from left to right. Power input is at top left.

# 1 Schematics.

**The two pots...** In my schematic, they RV1 and RV2. RV1 acts as a voltage divider to reduce the input level to the board. RV2 is part of the voltage divider at the base of the PNP. In David Deane's schematic, the two pots were VR1 and VR2 (same order). He doesn't give any explanation of their function. In Rik Strobbe's transmitter, RV1 is missing so he always has the full level going into this section. Rik Strobbe does have a pot (R3) as part of the voltage divider at the base of the PNP. But the configuration is a bit different. He has the R3 pot being the entire voltage divider and has a constant R4 as a current limiter on the PNP base. David Dean has no current limiter. Also, David Dean ties his pot (VR2) to the output of the PNP thus getting the output to feed back into the base. In my xp board, I have a switch (SW1) to change the configuration. In on configuration, it looks like David Dean's. In another, it ties the wiper of the pot to GND and doesn't include any feedback. This second configuration, does not replicate the Rik Strobbe section.

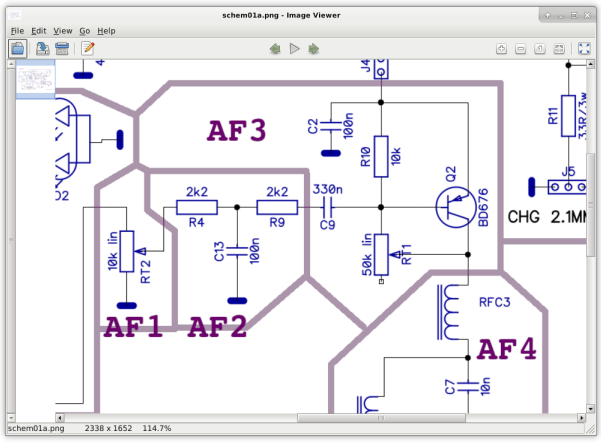


Figure 2: Part of the David Deane schematic. The board contains only sections AF1 and AF3. The plan was to use a sine wave at the input rather than a square wave so that the AF2 RC filter would not be needed.

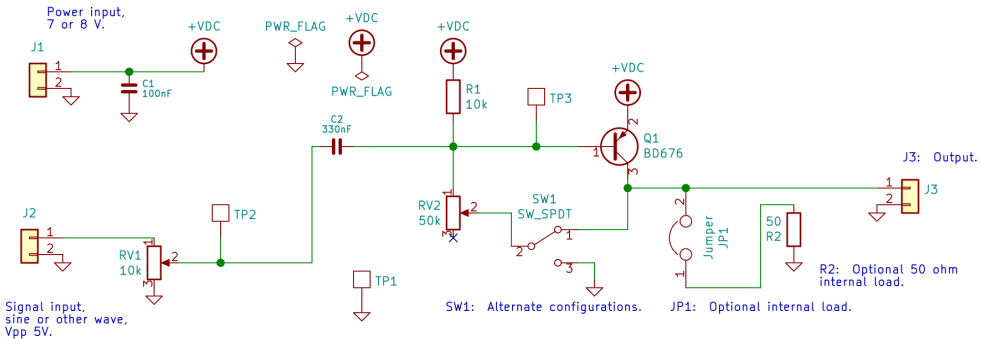


Figure 3: Fig: Schematic for board here. TP2 was added so I could monitor the voltage level as I turned RV1. SW1 allows the Q1 base bias to be controlled precisely or to be partially controlled by feedback from the Q1 collector. JP1 allows the use of an internal 50 Ω load.

## 2 Board details.

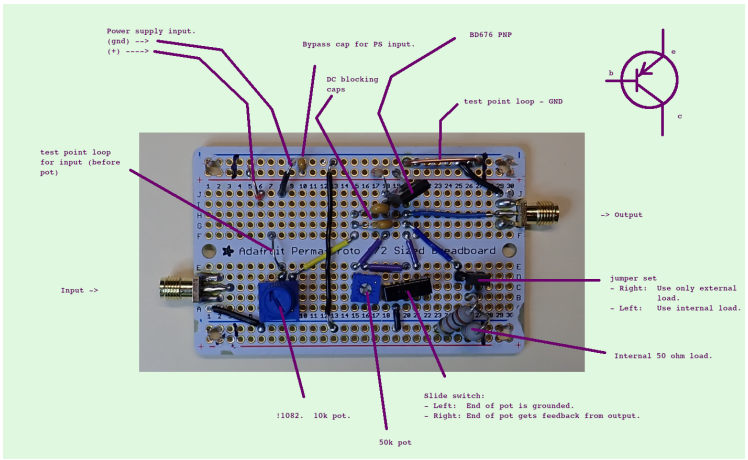


Figure 4: Board front.

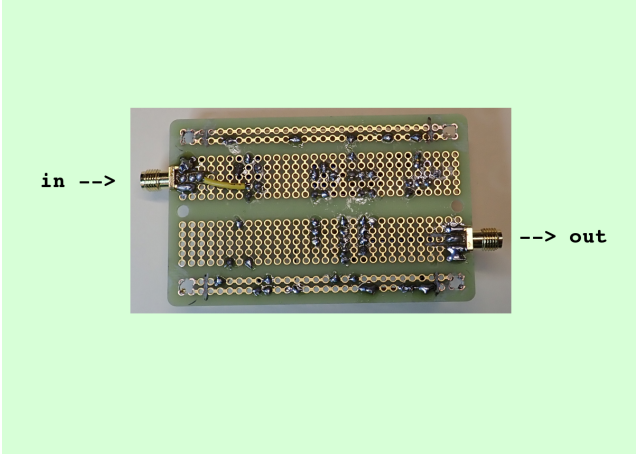


Figure 5: Board back side.

## 3 2020-12-07 experiment.

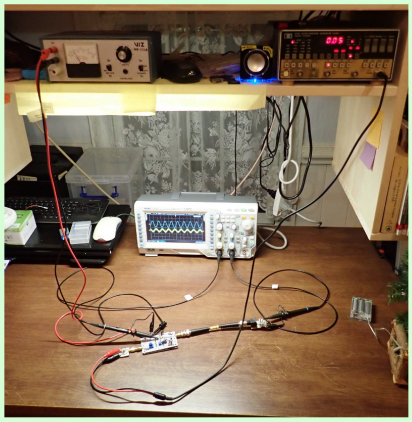

Figure 6: Experiment setup.

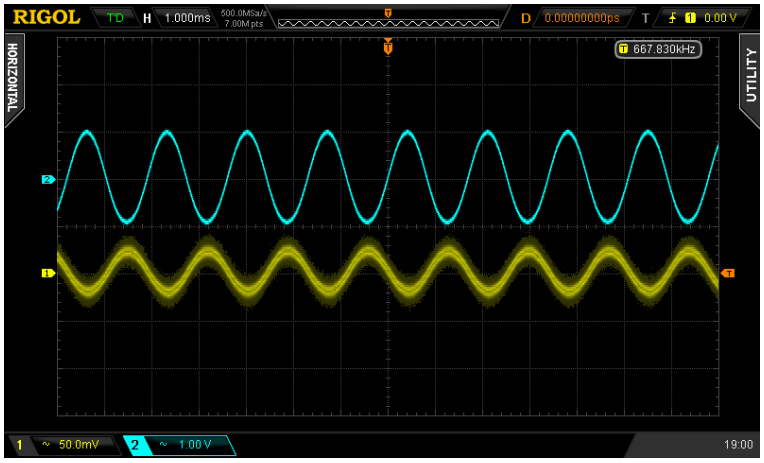


Figure 7: Oscilloscope capture.