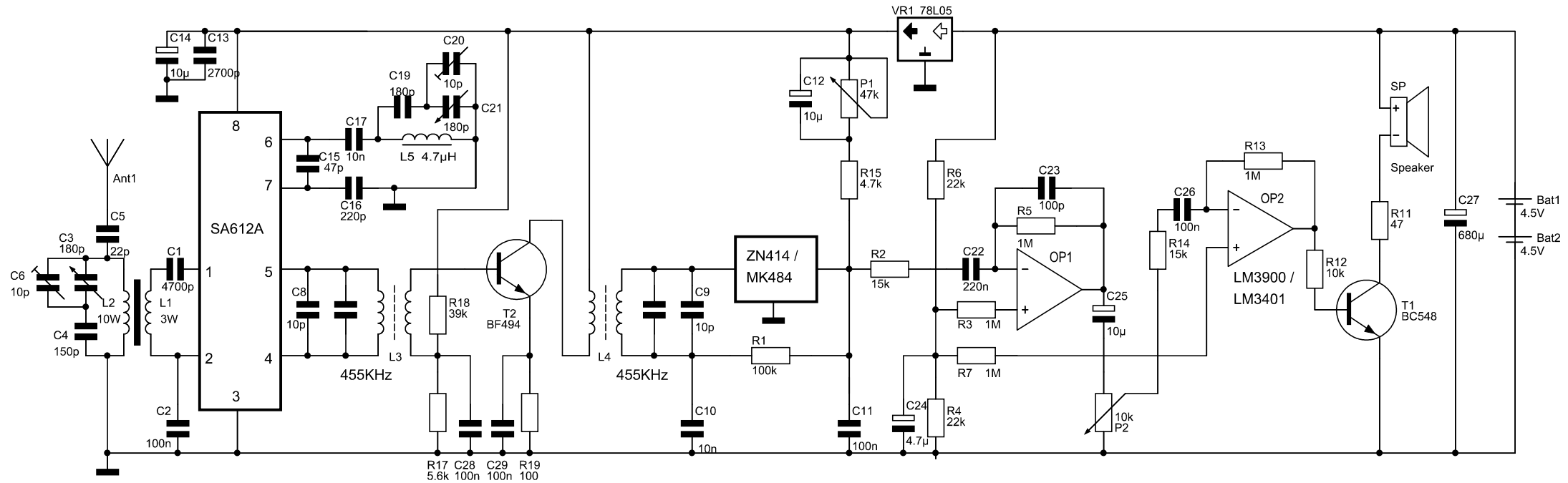


Circuit Diagram SW Superhet (5.6 - 10 MHz), based on SA612A, ZN414 and LM3900



Mixer / oscillator

1st IF filter

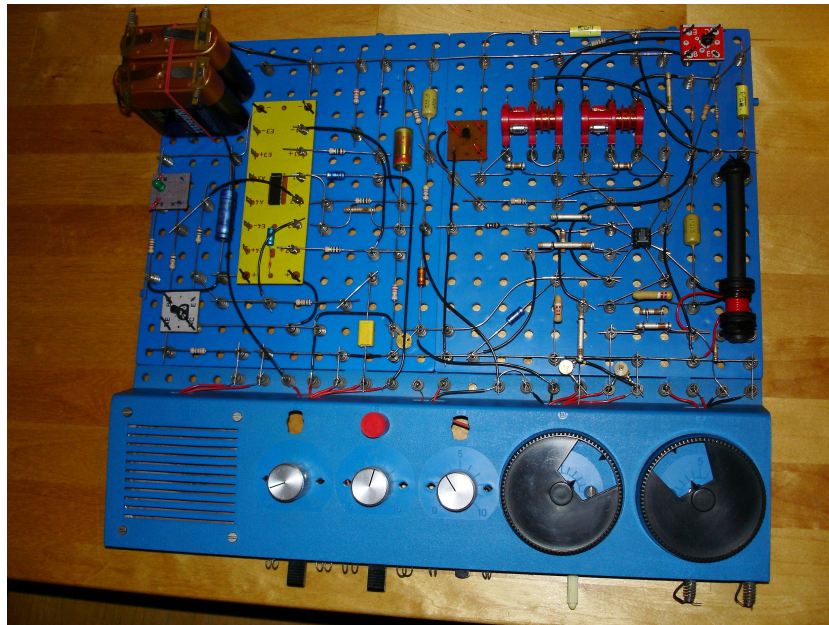
IF amplifier

2nd IF filter

Amplifier / detector

AF amplifier + LP filter

AF amplifier



Design notes:

* A superhet always needs to be very carefully aligned for optimal performance. See www.kranenborg.org/ee/ee2.htm for a procedure description.

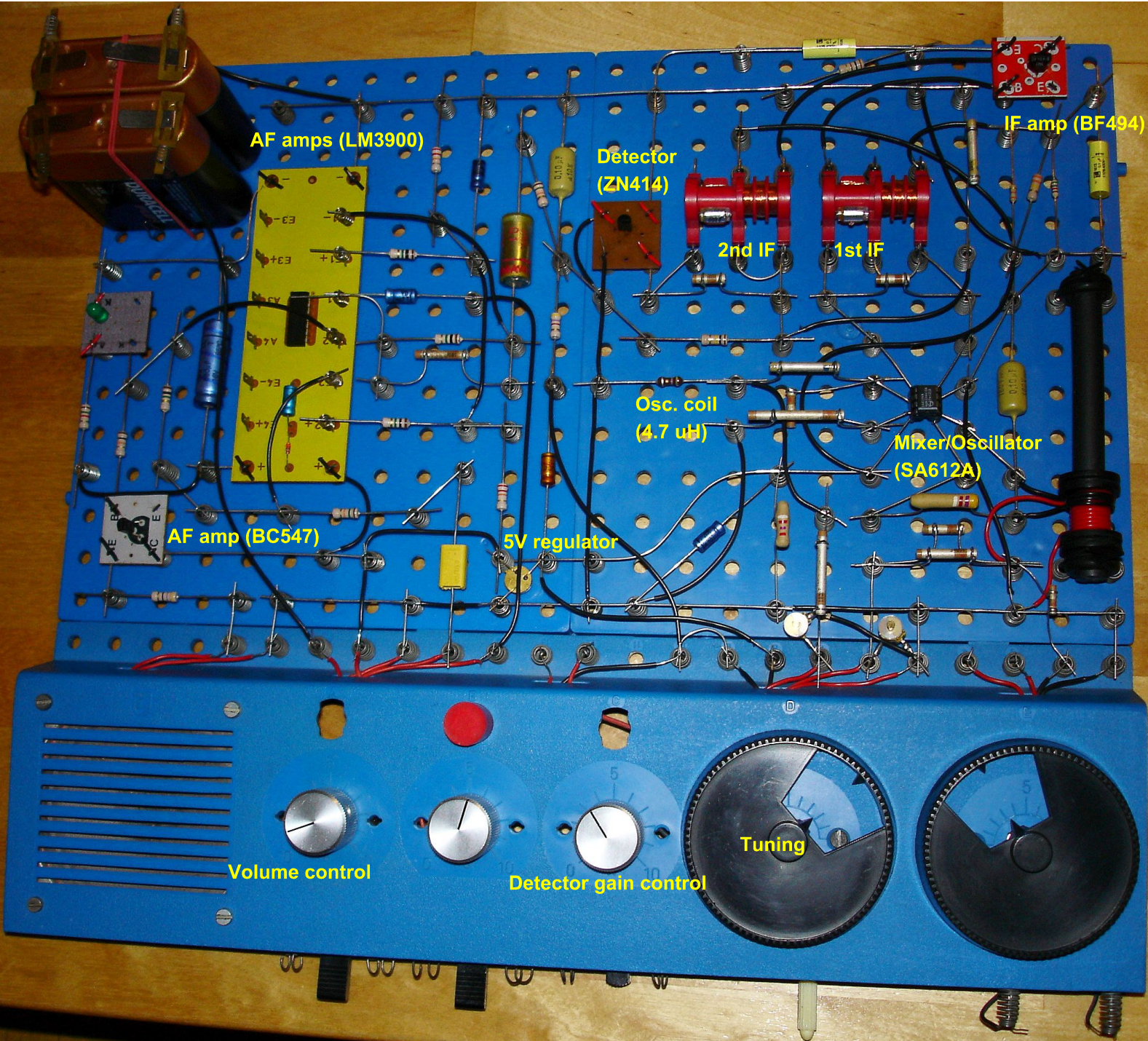
* The IF amplifier transistor T2 (BF494) needs to be properly biased through R17 and R18. Best start with a somewhat larger value for R18, then decrease its value (by putting in parallel a large resistor), thus increasing the gain. Proceed until the gain becomes too large (and distortion and /or oscillations occur, particularly at higher frequency). At maximum gain this receiver does very well even without an antenna, and has a sensitivity comparable to a standard commercial receiver.

* Note that the ZN414 detector has a different connection schema as compared to an equivalent MK484 chip.

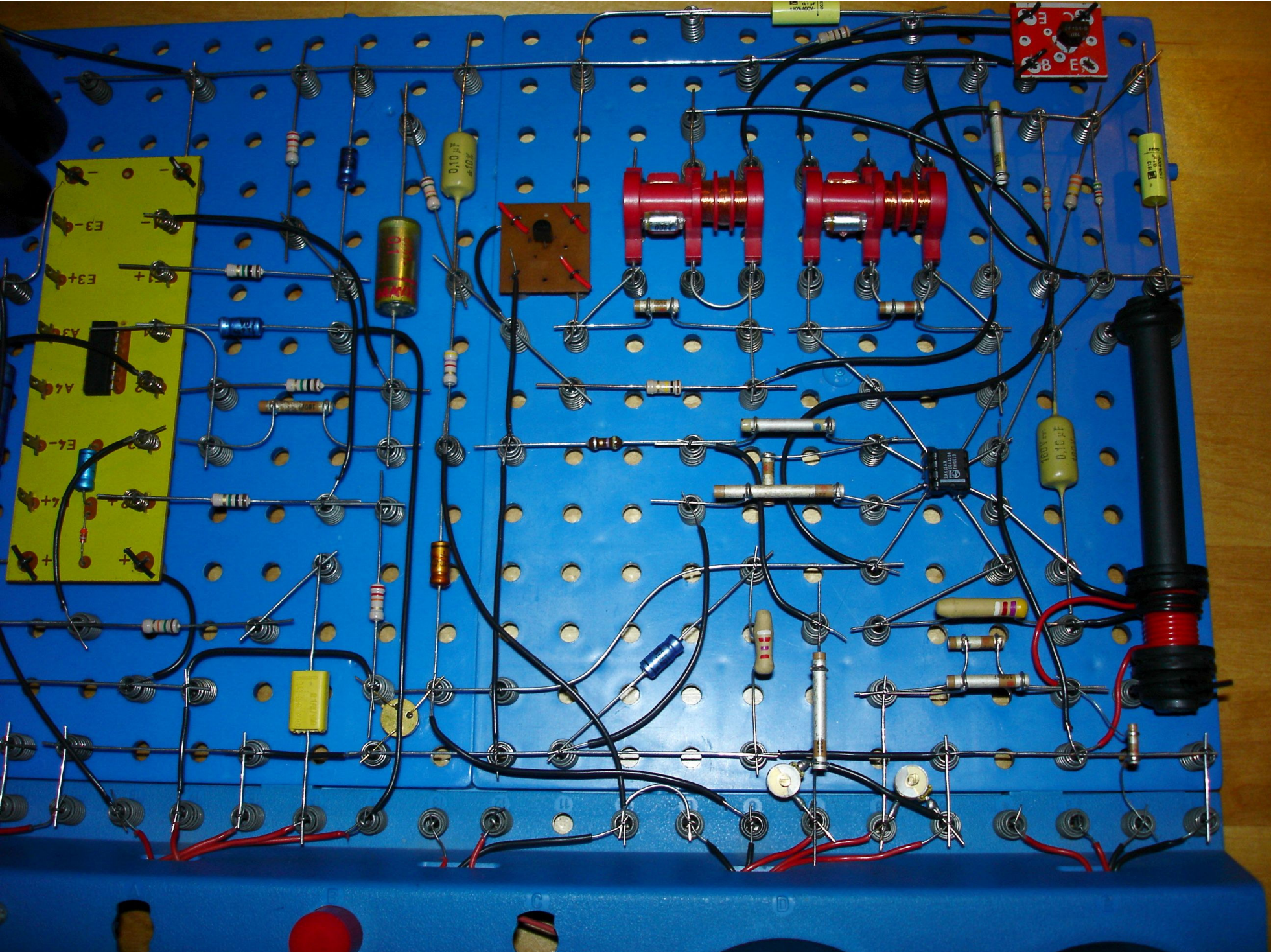
* The two padding caps at the tuning capacitor have been removed and replaced by two 10p trimmers at the breadboard for better accessibility.

* A 2m long antenna may give better results but adds quite some background noise. A good earth connection instead is generally to be preferred as this gives much better performance.

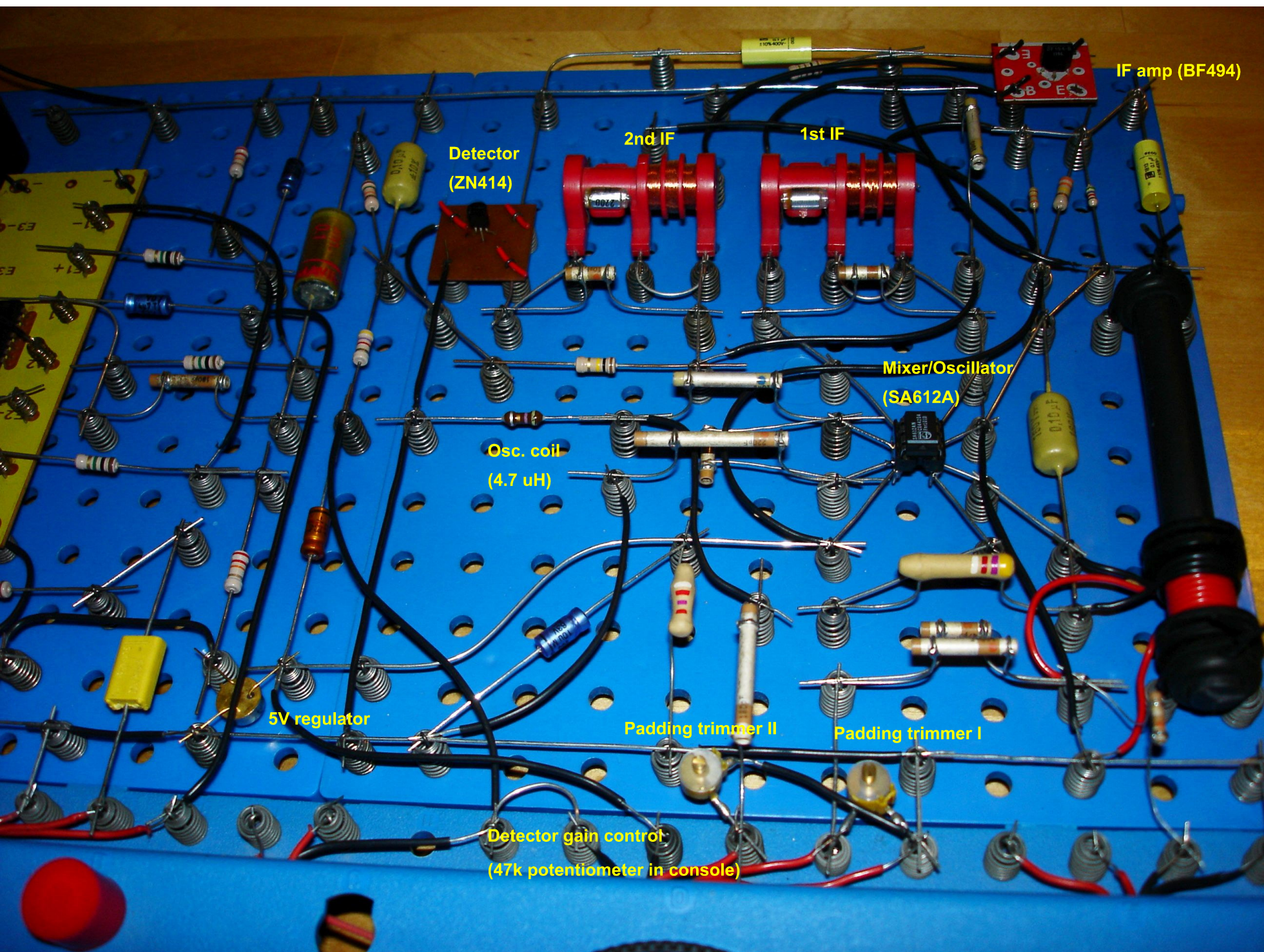
General Overview



RF part detail I



RF part detail II

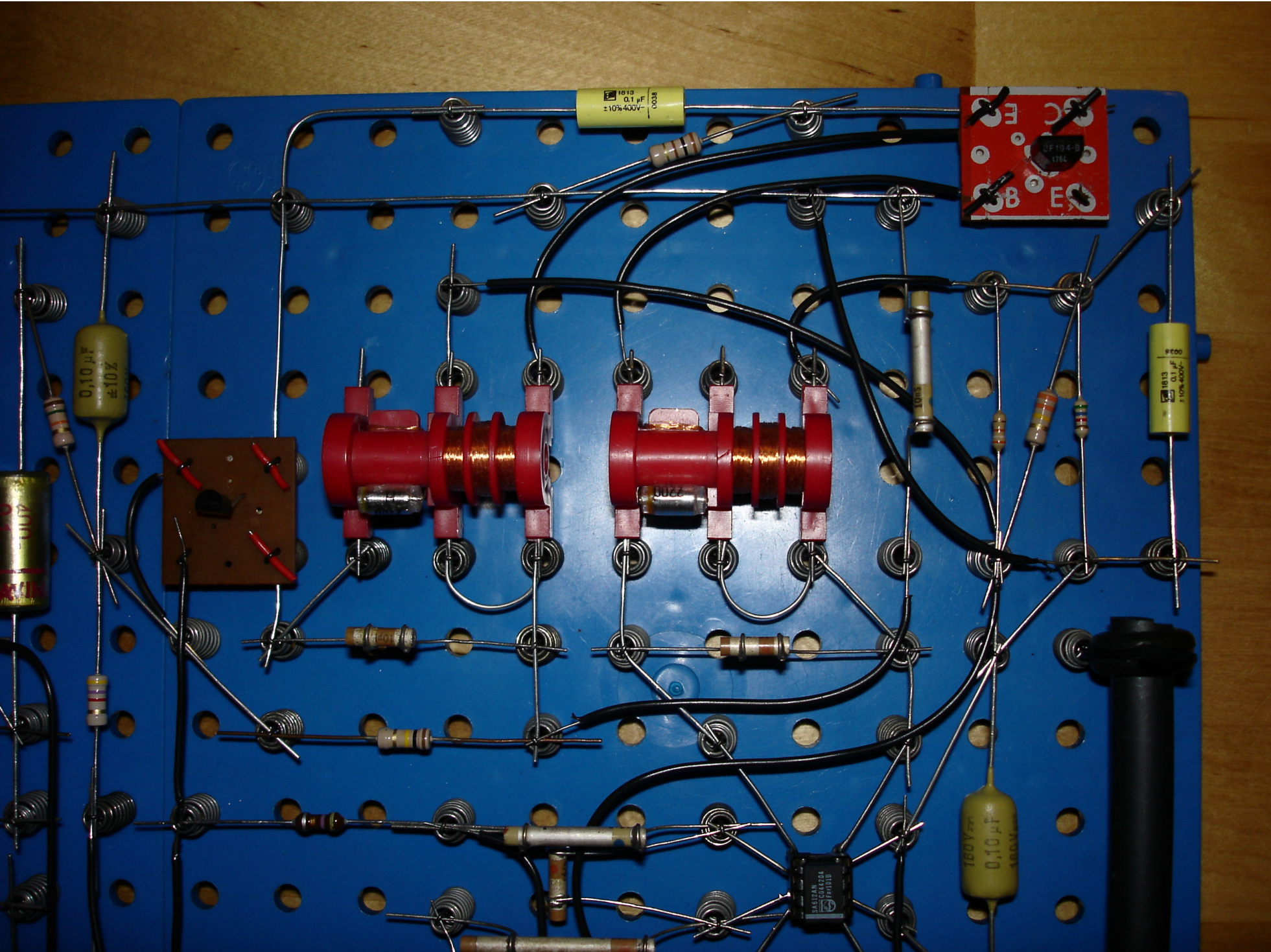


Coil detail



Primary coil (red):10 windings
Secondary coil (black):3 windings (connected to 5A612A)

IF stage detail



Delayed AGC extension (currently under development)

