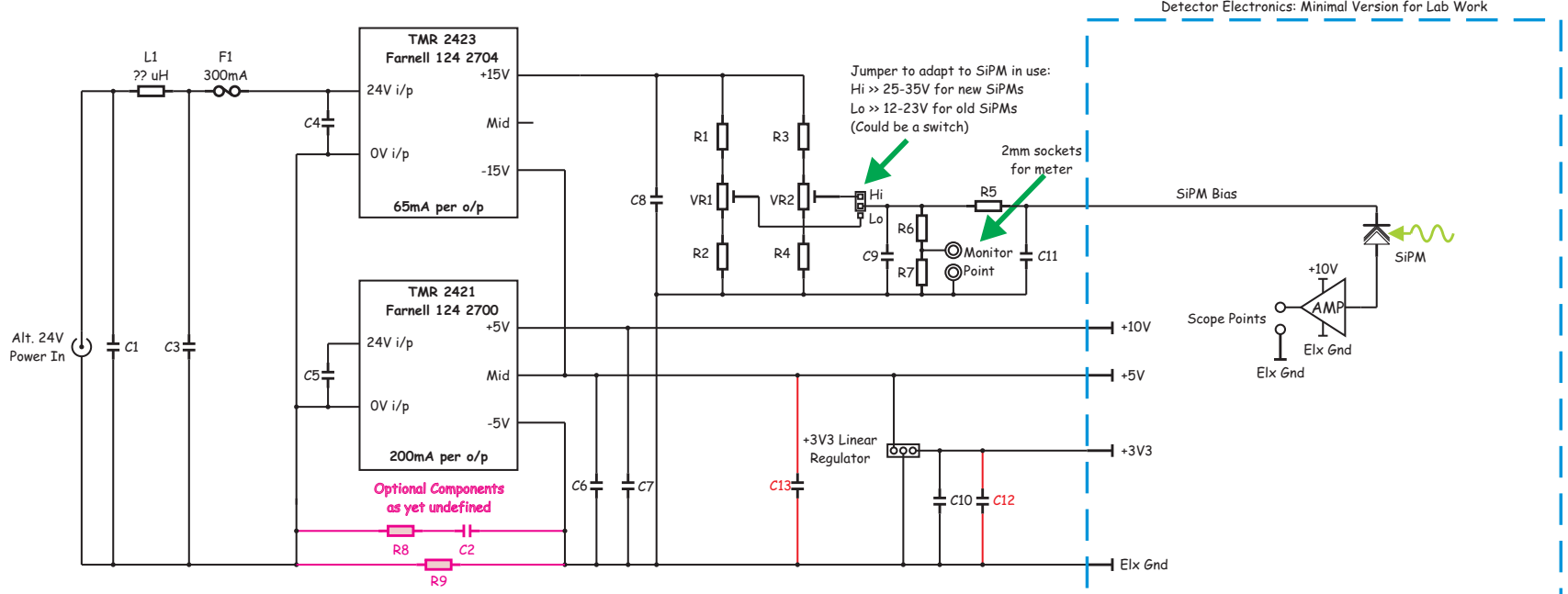
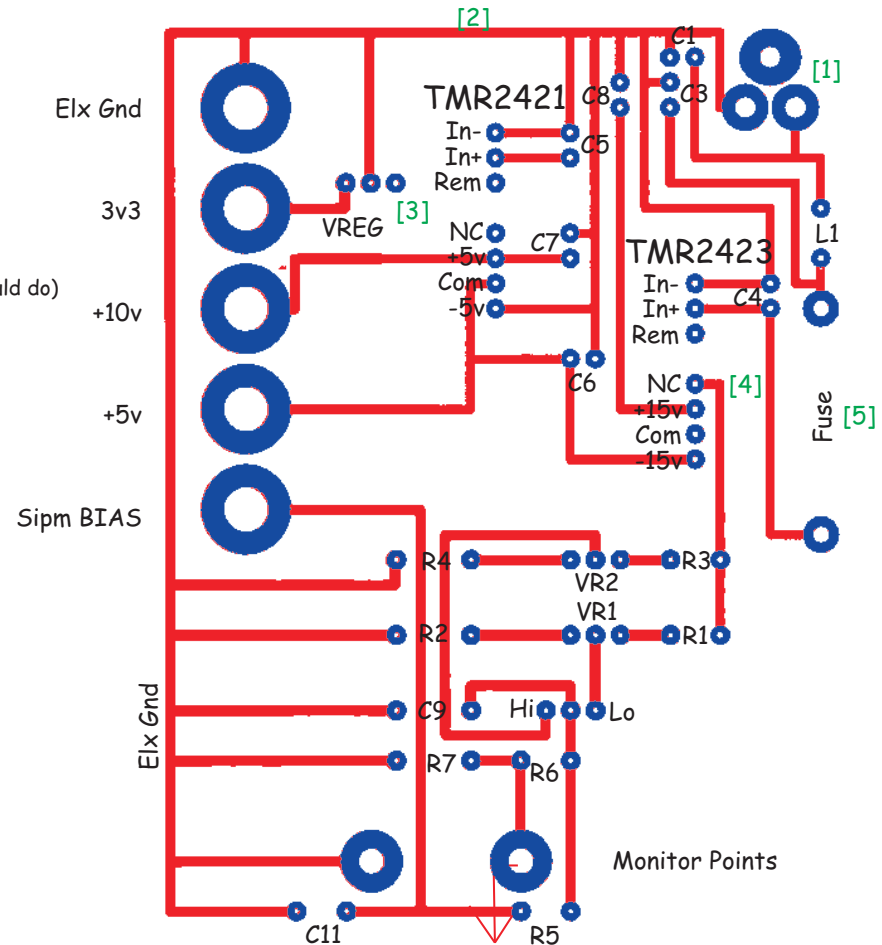
Detector Electronics: Minimal Version for Lab Work





C1-C11 : 100nF 50V Ceramic Capacitors
F1 : 250mA Resettable Fuse (200-300 would do)
L1 : 100uH Inductor - with > 300mA rating
R1 : 100R (i.e. 100Ω)
R2 : 24K
R3, R4 : 12K
R5 : 24K
R6 : 1M0 (i.e. 1.0MΩ)
R7 : 110K
Vr1, Vr2: 10K 20 turn trimpots

Notes

[1] Is this the right footprint for your power socket?
It's worth checking: the details kill you!

[2] You may not have noticed the change in the proposed circuit: the negative 24V input is now separate from the "Elx Gnd". Also note the Optional components that would allow us to join the 2 in various ways. This can be very useful when noise is being picked up. Both Ground traces should be thicker, or even be a whole area of Copper.

[3] No connection to 3v3 pin !

[4] Wrong pin

[5] I propose a thermal fuse here, such as RS Components 506-971 (TYCO RHEF 050)

[6] It's best to decide on the particular component and its size, and place the mounting pads accordingly. Thus allow a standard 0.4 ins between resistor pads. The capacitors may well have a lead spacing of 0.2 ins.

[7] I think it would be wise to allow for a couple more capacitors C12 & C13 on the input and output of the 3v3 Voltage Regulator. Just assume they are like the others, but they may turn out to be wire-ended Tantalum capacitors.