

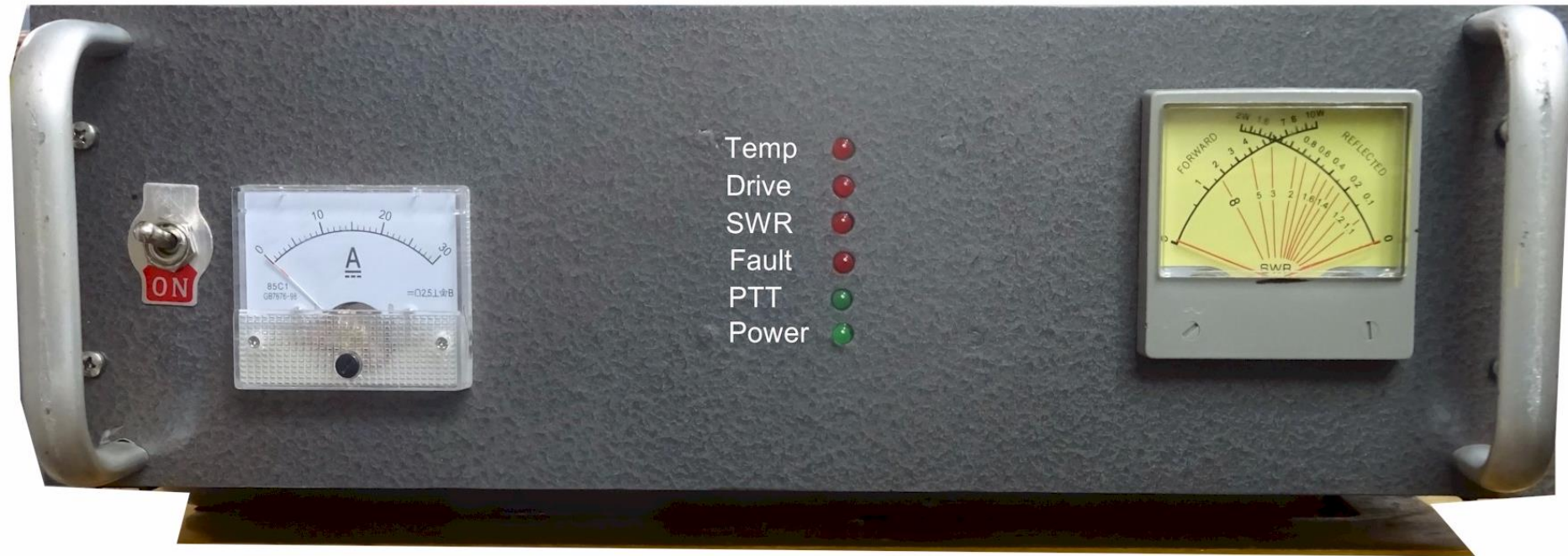


George VK4AMG

CBRS 6m Half Larcán SSPA

**A recipe for control and protection
of a
Solid State Power Amplifier**

Front Panel



Rear Panel



Under the Covers

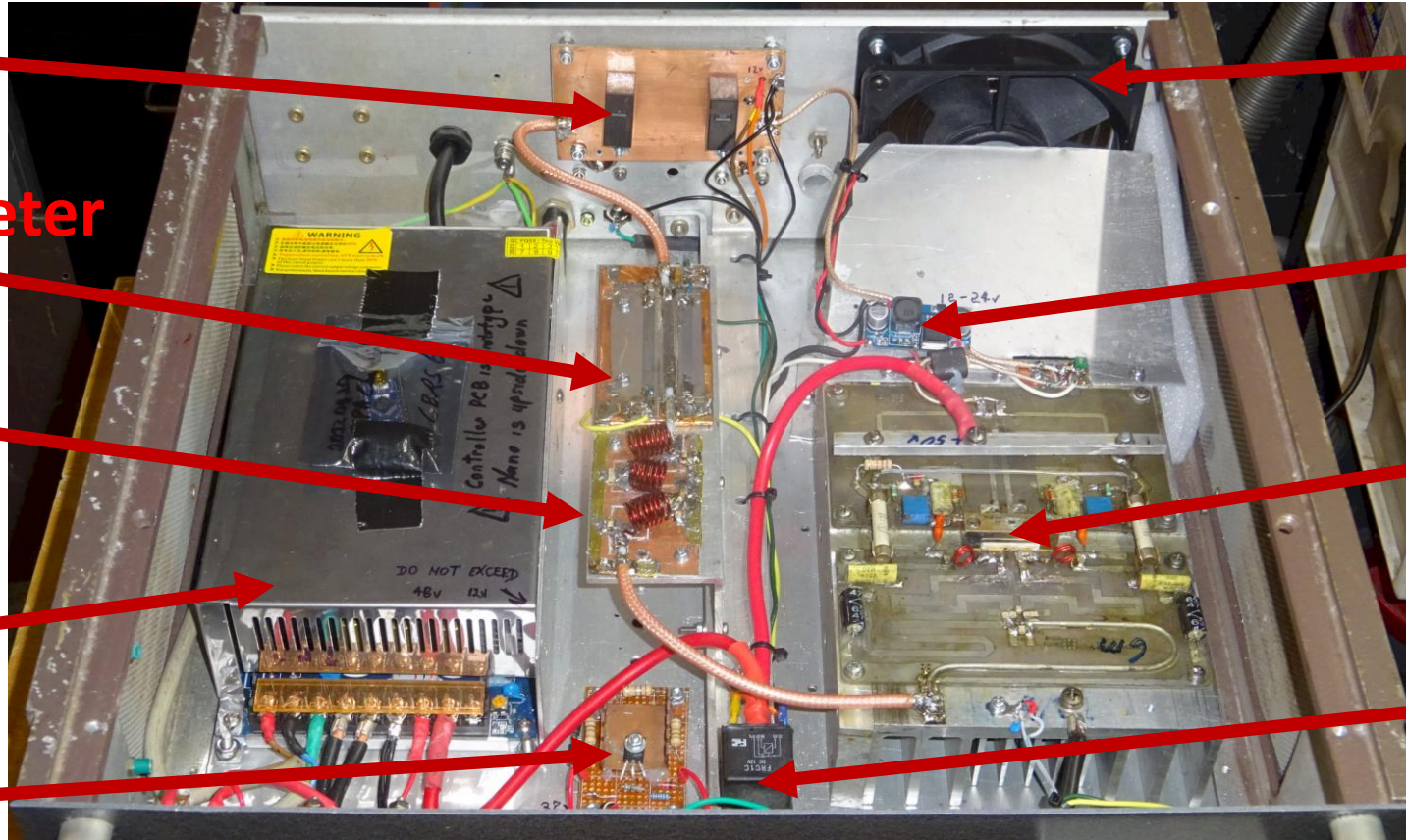
Change Over
Relays

Reflectometer

Low Pass
Filter

Power
Supply

24V Reg



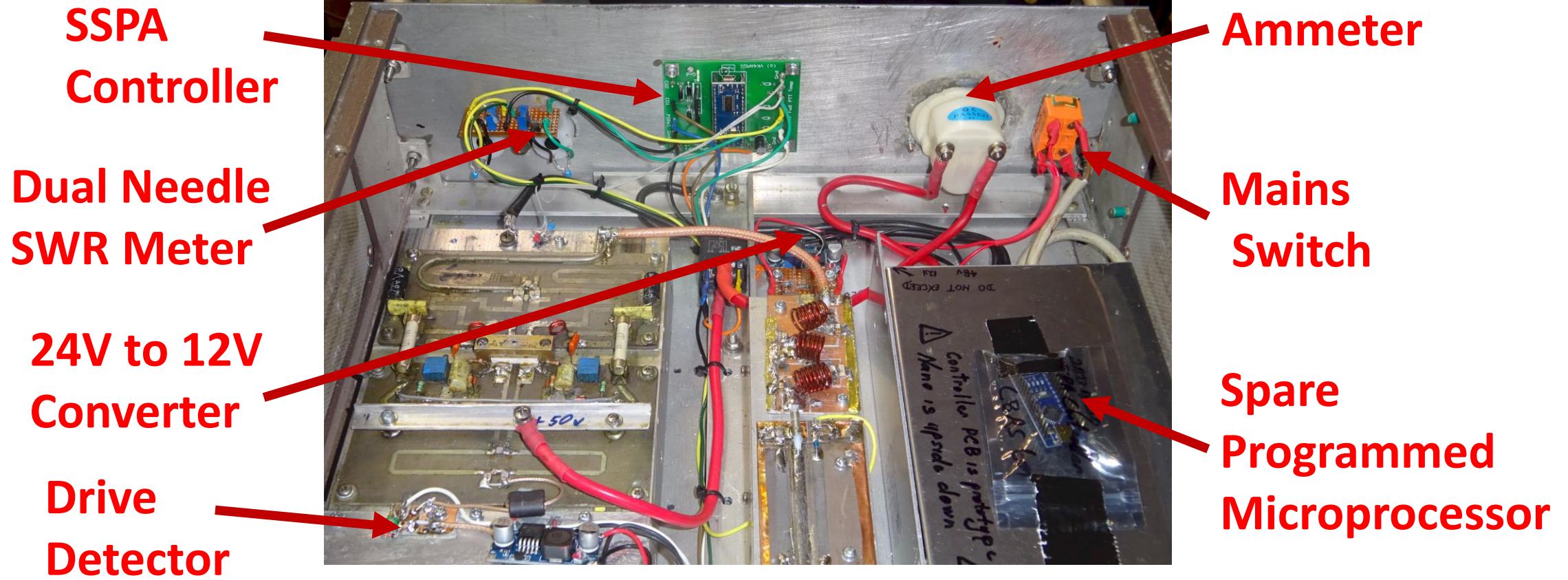
Fan

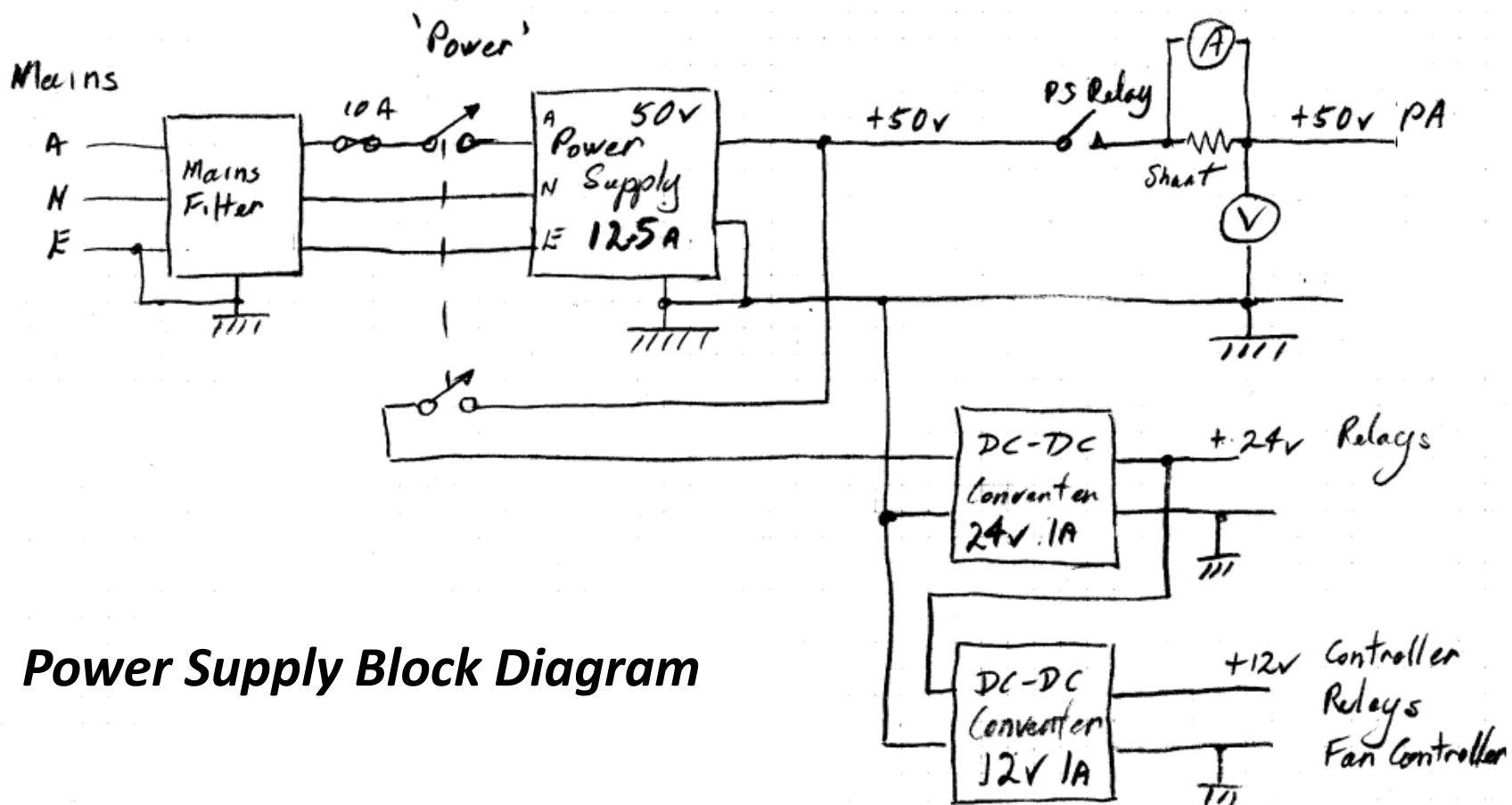
Fan Speed
Controller

Half
Larcen

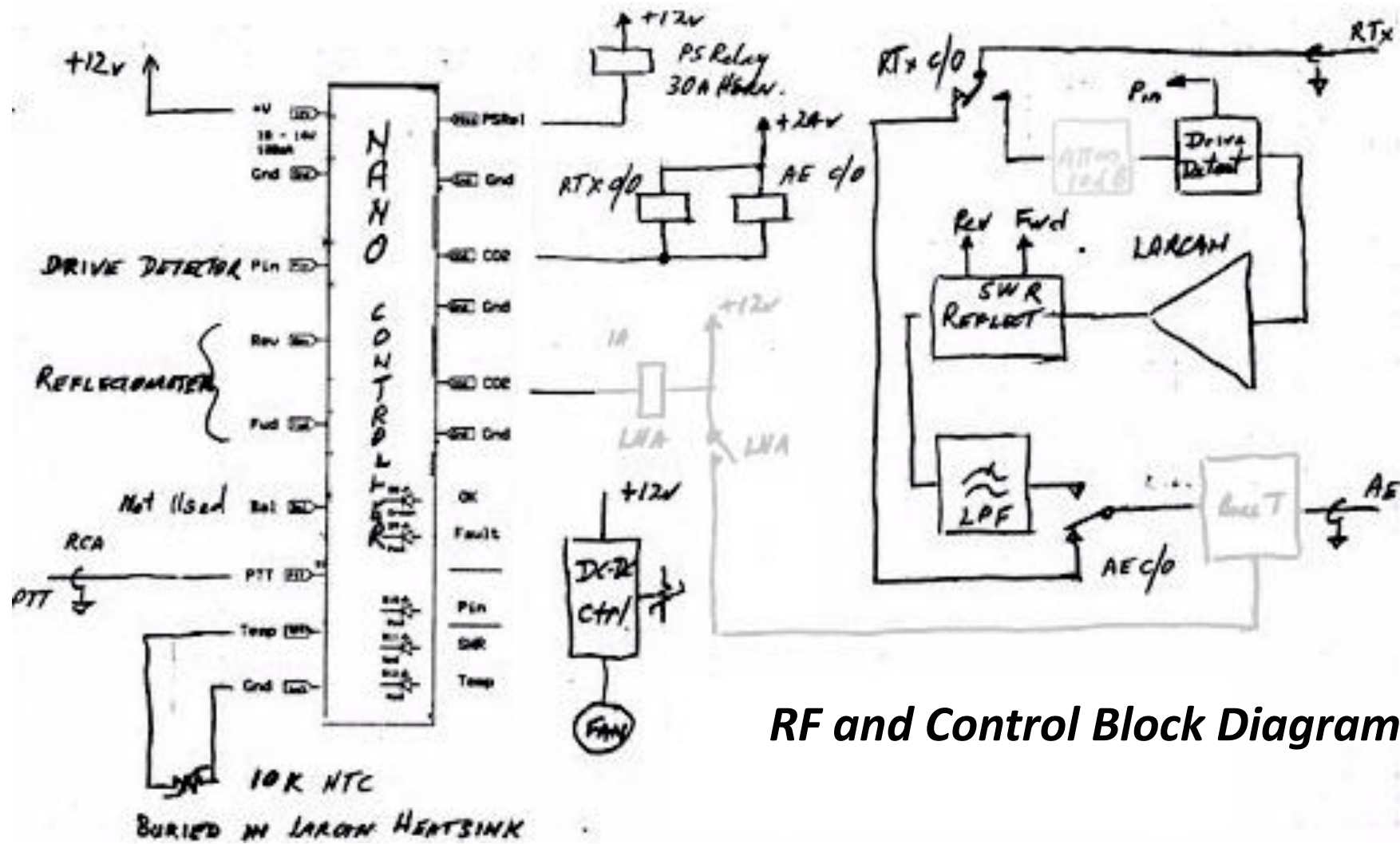
50V Supply
Relay

Under the Covers



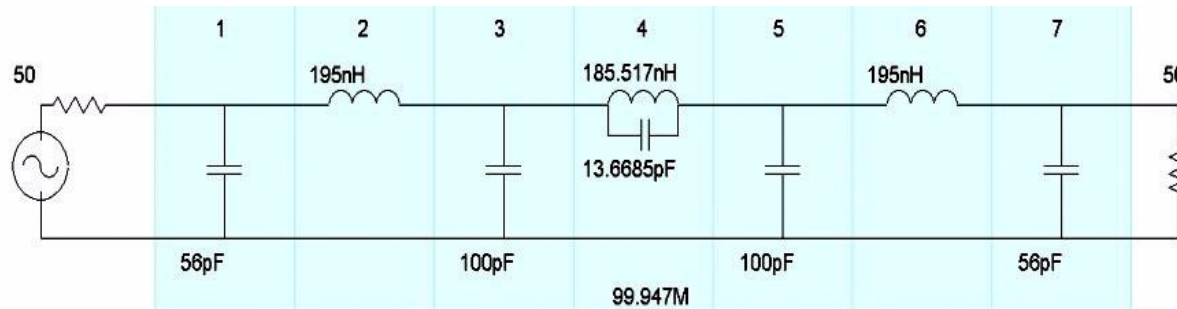
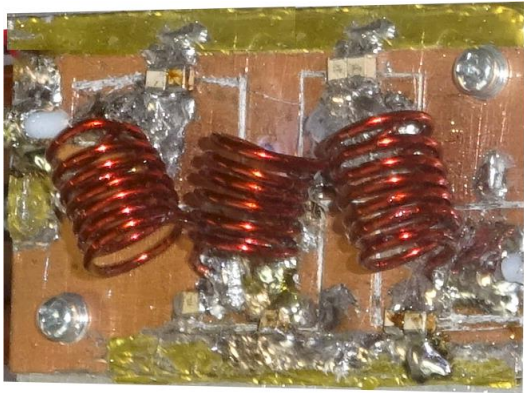


Power Supply Block Diagram

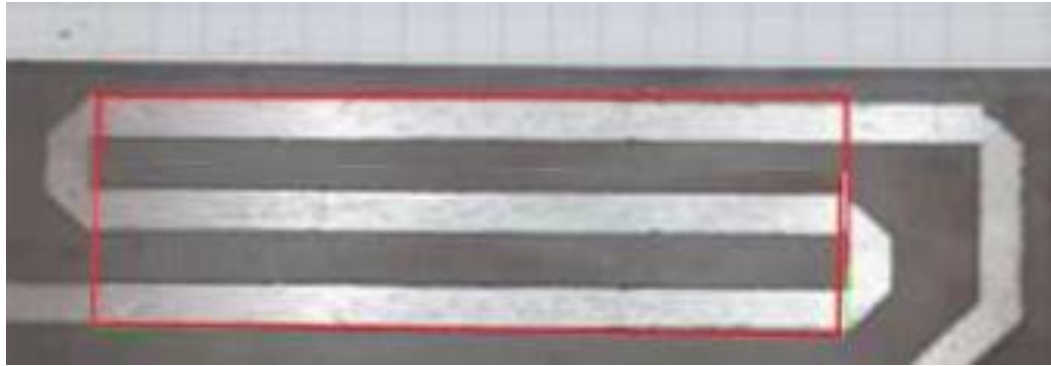


RF and Control Block Diagram

Half Larcen LPF



Reflectometer from Larcan Combiner Scrap



- *Cut section from Combiner Scrap*
- *Cut track spacing to adjust sensitivity*
- *Solder to copper shim*
- *Fold over edges and solder*
- *Fit components as below*

1N5711



50R

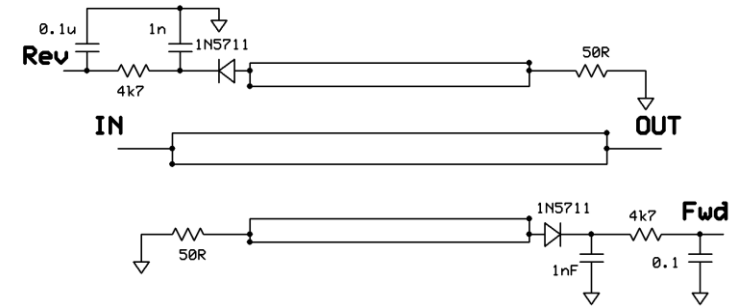
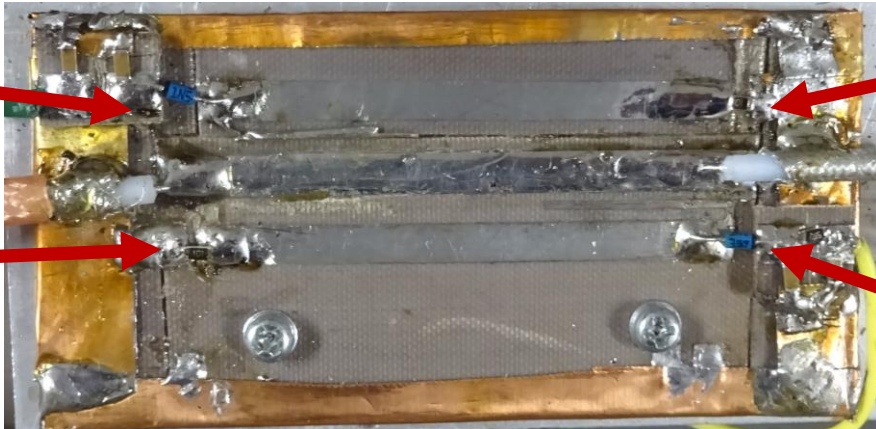
SMD

50R



SMD

1N5711

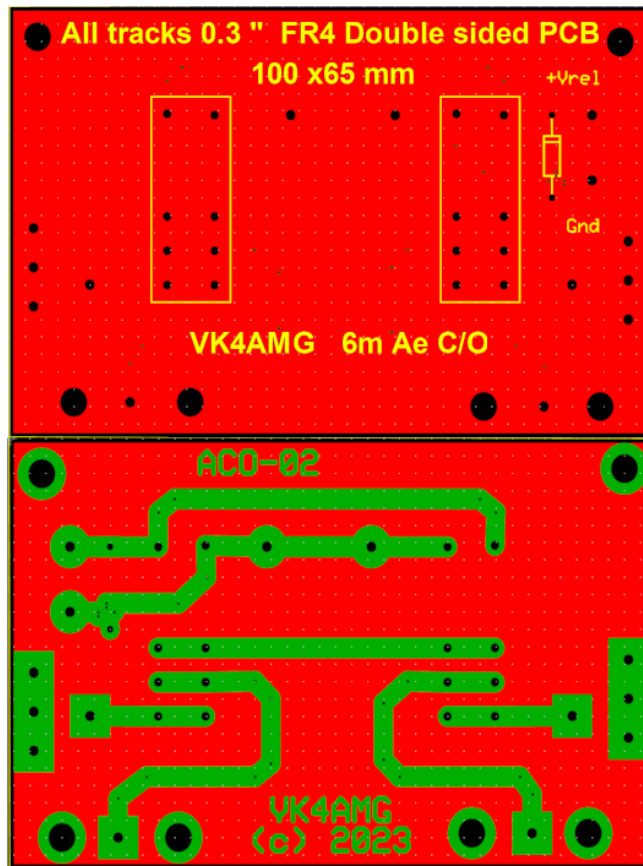


Low Cost Antenna Changeover Relay

https://pa3csg.nl/?page_id=1114

[Using Inexpensive Relays \(w6pql.com\)](http://www.w6pql.com/using_inexpensive_relays.htm)

http://www.w6pql.com/using_inexpensive_relays.htm



- **Omron G2RL DPDT 16A Silver Alloy**
- **FR4 Double sided 1.6mm PCB**
- **All tracks 0.3"**
- **Suitable HF thru 2m 432MHz with tuning**



Microprocessor SSSPA Controller

Control, Sequencing, and Protection



Provides :

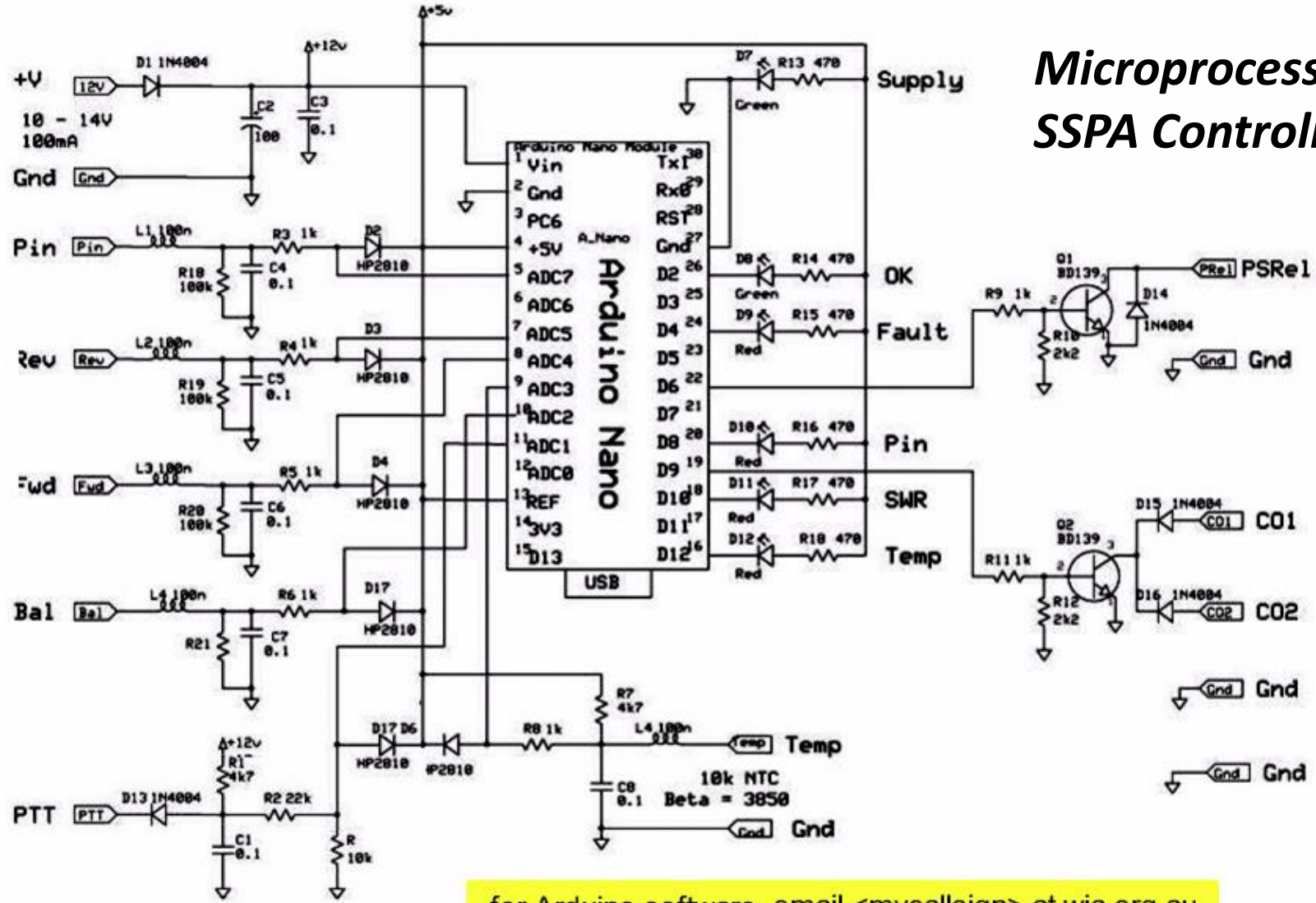
- ***Responds to PTT from radio acc***
- ***Traps PTT at switch-on & warns operator***
- ***Test flashes LEDs on startup if normal***
- ***Operates PS and Ae C/O relays on PTT***
- ***Sequences C/O and PS on PTT – LNA if fitted***
- ***Monitors Drive, Power Out, SWR, Temp***
- ***Shuts down SSPA on fault - sequenced***
- ***Indicates operation and fault on LEDs***
- ***Indicates temperature rise by flashing LED***
- ***Provide PTT timer – shuts down after 2min***
- ***Provides serial debug to PC for setup***



Microprocessor SSPA Controller

Analog IPs
+5V max
Normal 2V FSD

Note:
Fwd & Rev Sense
should have same
same full scale
sensitivity



for Arduino software email <mycallsign> at wia.org.au