



Fig 5. CIPU block diagram. The basic mode is CW RX/TX and SSB RX

range will be reduced. Injection frequency is signal frequency + 10.7MHz, but you will also be able to receive signals at the image frequency with an external VFO eg. 3.5MHz could be received with either 7.2 or 13.9MHz injection. Also, the IF as it stands is really for CW only (the SSB board gives switched sideband selection), but there is enough range on VC3 to allow either USB or LSB to be received depending on whether VC3 is set for the crystal to oscillate high or low of 10.7000MHz (nominally 10.6985 or 10.7015MHz). Until the IF traps are in place on the preselector, there may also be some IF breakthrough while testing (more likely at night).

### Connecting up

- 1) Link points N & P, C & B, E & F using short pieces of insulated wire.
- 2) Link the three points marked '+12V' with the '+12V RX' (U) terminal. Connect the meter across points R & Q, observing polarity.
- 3) Connect up the IF GAIN, AGC DECAY and NOISE BLANKER potentiometers following the circuit diagram, using about 150mm lengths of insulated wire. The ground connection should go straight to the top foil. The connection from point J to +12V RX is not made at present, nor are there any connections to points K, L, M, Y, Z, AA (these are connected with the break-in keying circuit and SSB adaptors).
- 4) Connect up the AF gain control using screened audio cable. Only two lengths are required, with the braid acting as the screen and earth connections for the pot. Connect the braids together at each end. Connect a speaker, one end to point V and the other direct to the top foil.

5) Set VC2/3 to about half mesh, RV3,5 and 6 presets to about half way, VOLUME (RV2) fully off (anticlockwise), IF GAIN (RV7) on full (fully clockwise).

6) Connect a power supply (+12-14v) to +12V, with the negative connected to the board's upper surface (preferably current limited to 200mA). Apply power and check that the current consumption is around 100 to 160 mA. If it is a lot

is around 100 to 160 mA. If it is a lot more, switch off and look for shorts or component errors (eg. wrong value resistors, or incorrectly inserted semiconductors). If no power is taken, check all soldered joints, check that all +12V pins specified above are linked and that there are no breaks in the print circuit board tracks.

Once all is OK, switch off again.

### Voltage Check Chart

This gives average readings at various points in the circuit for the voltages to be expected. All measured using a high-Z digital voltmeter. AF gain min, IF gain max, Blanker on but gain at minimum. No signals. Expect variations of 5-10% on these readings between individual models. 12.0V supply used.

Transistor	C	B	E	D	S	G1	G2
Q1				10.2	1.2	1.1	
Q2				5.4	0	.08	
Q3	12.0	.08	0				
Q4				10.8	0.6	0	5.6
Q5				10.8	0.6	0	5.6
Q6				7.6	0.8	0	0.8
Q7	0	0	0				
Q8				10.8	0	0	0
Q9				10.8	0	0	0
Q10	8.8	4.2	4.0				
Q11 (+12V Tx)	11.2	4.1	3.8				
Q12 (+12V Tx)	11.2	11.2	0				
Q13				12.0	5.7	7.1	
	IC1	IC2					
1	6.1	0					
2	0	6.0					
3	0	5.9					
4	0	0					
5	0	0					
6	.02	6.5					
7	0	12.0					
8	5.1	0					
9	0						
10	0						
11	0						
12	0						
13	0						
14	12.0						