AR2000 POWER SOCKET

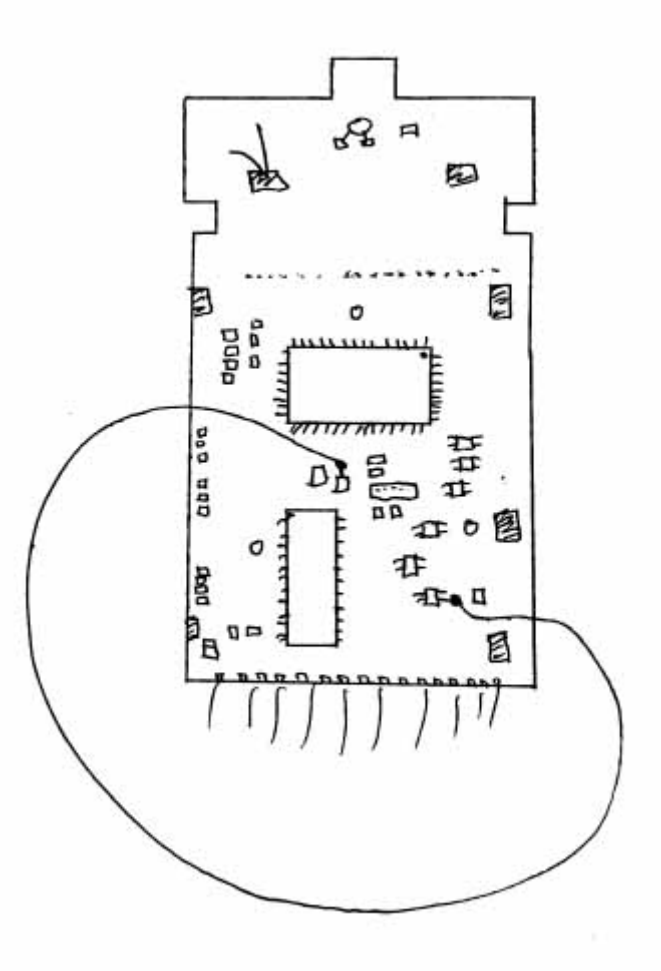
The power socket on these units gets a lot of wear and can eventually fail or become intermittent (intermittent supply levels are the main cause of crashed microprocessors in these sets). The socket itself can fail or the solder joints to the board can fracture. Either way, repair is simple, requiring removal of the rear case, 1 earth wire and lifting of the supply board. Replace or resolder the socket but, as a further preventative measure, a wire can be soldered directly to the rear of the socket and taken to the anode of D201 (situated next to the socket).

AR2000 RESET PROCEDURE

The AR2000 has no external RESET facility. In the case of a 'hang' or corruption, reset the microprocessor in the following manner.

There are two methods, one involves connecting a diode between pin 13 and 51 on the microprocessor, this is tricky as track damage and short circuits are easy to create... we recommend the 'wire link' method shown below.

The best method is to add a wire link to the CPU board while the radio is switched off:



Switch the set on and PRESS the KEYS in the following order, the key presses should appear on the LCD as you enter detail... if it will not initiate, you may have to press BANK 1 several times until the number "1" appears:

Switch the set on and PRESS THE KEYS in the following order:

BANK - 1 PROG - 0.5 - LIMIT - 49.995 - SEARCH - 556.325 - ENTER
2 - PROG - 50 LIMIT - 107.995 - SEARCH - 556.325 - ENTER
3 - PROG - 108 - LIMIT - 169.995 - SEARCH - 556.325 - ENTER
4 - PROG - 170 - LIMIT - 286.995 - SEARCH - 556.325 - ENTER
5 - PROG - 287 - LIMIT - 599.995 - SEARCH - 249.125 - ENTER
6 - PROG - 800 - LIMIT - 1109.995 - down - 249.125 - ENTER
7 - PROG 1110 - LIMIT - 1300 - down - 556.325 - ENTER
8 - PROG - 600 - LIMIT - 799.995 - SEARCH - 58.075 - ENTER

Switch off the set and disconnect the diode/link. The microprocessor will now be reset and all memory banks empty. It is recommended that at least one frequency be keyed into each memory bank. Now re-programme each of the 10 search banks.

i.e. SEARCH PROG (start frequency) LIMIT (stop frequency) ENTER (search step in kHz) ENTER (mode) ENTER (bank number) ENTER SEARCH

SEARCH-PROG-2-LIMIT-30-ENTER-5-ENTER-AM-ENTER-1-ENTER-SEARCH
SEARCH-PROG-88-LIMIT-108-ENTER-50-ENTER-WFM-ENTER-2-ENTER-SEARCH

SEARCH-PROG-108-LIMIT-138-ENTER-25-ENTER-AM-ENTER-3-ENTER-SEARCH
SEARCH-PROG-225-LIMIT-400-ENTER-50-ENTER-AM-ENTER-4-ENTER-SEARCH
SEARCH-PROG 144-LIMIT-146-ENTER-12.5-ENTER-FM-ENTER-5-ENTER-SEARCH
SEARCH-PROG-433-LIMIT-435-ENTER-25-ENTER-FM-ENTER-6-ENTER-SEARCH
SEARCH-PROG-156-LIMIT-163-ENTER-25-ENTER-FM-ENTER-7-ENTER-SEARCH
SEARCH-PROG-165-LIMIT-174-ENTER-12.5-ENTER-FM-ENTER-8-ENTER-SEARCH
SEARCH-PROG-890-LIMIT-905-ENTER-12.5-ENTER-FM-ENTER-9-ENTER-SEARCH
SEARCH-PROG-935-LIMIT-950-ENTER-12.5-ENTER-FM-ENTER-0-ENTER-SEARCH

The reset and reprogramming is now complete

Unlocking Search and Scan Banks

In cases were the set does not appear to operate correctly, first try these few ideas... it usually is simply "finger" trouble.

SCAN
1) Memory banks which contain no data will not be scanned, this sometimes happens when channels have been deleted by the customer (or following a microprocessor reset). Enter data into at least one channel of each bank and try scan again.

i.e. MANUAL 1 3 3 . 7 ENTER

PROG 000 PROG 100 PROG 200 PROG 300etc

2) Ensure that ALL banks are listed for scan. To reinstate all memory banks SCAN BANK PROG 0 LIMIT 9 ENTER

SEARCH
1) Ensure that all banks are listed for search. To reinstate all search banks SEARCH BANK PROG 0 LIMIT 9 ENTER

(on the AR1500 SEARCH BANK PROG 0 LIMIT 8 ENTER as bank 9 is reserved for automatic memory store).

2) Ensure that data is correctly stored in the search parameters

SEARCH PROG 150 LIMIT 160 ENTER 25 ENTER FM ENTER "X" ENTER SEARCH
Where "X" is the bank which you wish to reprogram (i.e. 1,2,3, etc).

3) Check that the first frequency of a search bank is not locked out, this is how the receiver of a search bank is not locked out, this is how the receiver decides whether the search bank is locked out.

SEARCH BANK PROG LOCKOUT

The first locked out frequency will appear on the display, to release it press LOCKOUT or to move on to the next press ENTER

Hunt for the first frequency of each search bank to ensure that they are not locked out release them by pressing LOCKOUT

Alternatively simply unlock every frequency in the lockout list - but this may take some time as there could be as many as 1000.

When the last frequency is unlocked the receiver will start searching. Don't go too quickly or you may start LOCKING OUT new frequencies rather that UNLOCKING old ones... this may be the case if all the frequencies suddenly appear numeric!! If so just start point 3 again.

Keypad Beep

Following a review in which a critical comment was made of the "BEEP" the facility has been removed at the factory. The "BEEP" is reported to be uncomfortable and annoying when using an earphone.

By addition of a single wire the facility can be restored.

Switch the receiver off and remove the batteries. Disconnect the receiver from the AC charger and remove the rear case. 4 screws secure the rear case half (2 x in rear case - 2 x in battery box). You will see 3 PCB layers once inside the case.

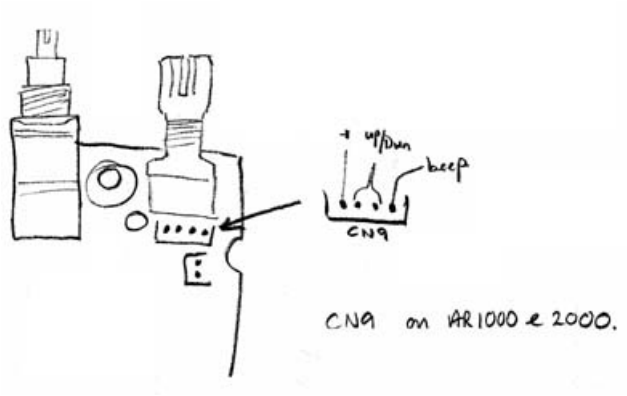
One end of the wire connects to the outer edge of CN9 on the top PCB. This is located at the base of the rotary tuning control. The original wire is usually GREY and the "tail" can sometimes be seen. If this is the case, solder a new length of wire to the tail. If no tail is visible, solder a new length of wire to the corresponding point on the PCB. Use the foil side (facing upward) of the PCB, this will save you "taking the set to bits"!

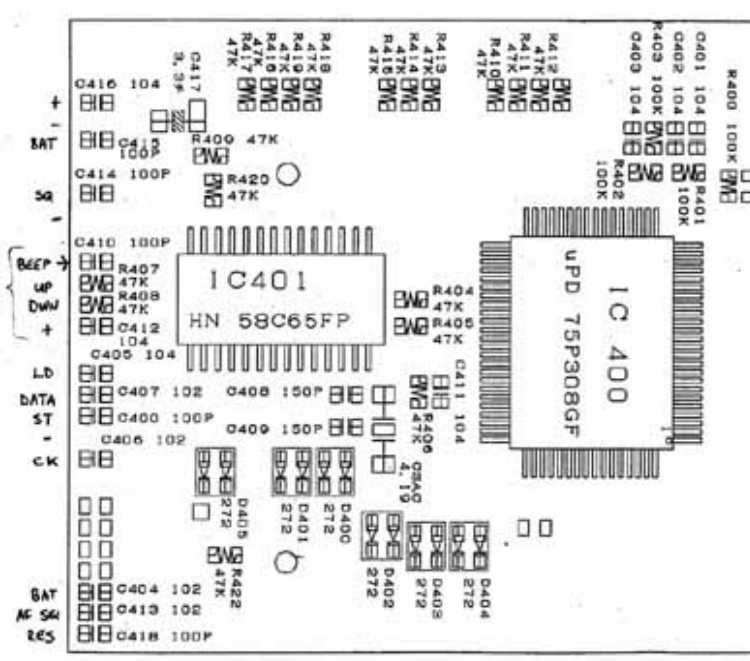
The other end of the wire connects to the bottom PCB (which carries the microprocessor). Follow the 3 existing wires from CN9 to the bottom board. With the base of the set facing you an unused "LAND" will be visible on the PCB to the left of the 3 existing wires. If you are lucky a tail will be connected.

If you are very careful and use a small soldering iron then there is no need to separate the PCB's. Solder the free end of the new wire to the "LAND or Tail".

Re-assemble the case and test. You will now have a KEYPAD BEEP.

Note: If you find it necessary to separate the PCB's, then the earth bonding wires will need de-soldering from the edge of each PCB. Make sure you reconnect them when you re-assemble the receiver.





AR2000 Discriminator (detector) output

Remove the rear cover (4 screws) taking care not to damage the battery wires while pulling the case apart. The battery wires will unplug from the power supply board if required.

The rear of the main PCB is now visible.

The discriminator output can be taken from IC5 pin9.

IC5 is located on the visible side of the board but is situated about 1/2 way down the board but on the edge (same side as the power socket).

It is labelled TA7761P although this may be difficult to read due to lacquer on the device.

Simply solder a wire to pin 9 of this IC to obtain the discriminator output.

Terminate the wire at a suitable socket and re-fit the case half (you may find that removing the side-panel case stopper provides an excellent location without the need to drill or burn a hole in the cabinet).

Many thanks to AOR UK!