

## Realistic Pro-2004

### EXPANDED COVERAGE:

The PRO-2004 scanner can be used to receive cellular telephone conversations. Originally, the scanner was able to receive in this band, but at the last minute, it was decided to delete cellular coverage from the PRO-2004. The procedure to re-instate the cellular band is simple for anyone with a pair of cutters, and a phillips screw-driver.

1. Remove the 4 philips screws on the back of the unit that hold the case onto the chassis.
2. Slide the radio out of the case by pushing it out the front. Or, put another way, slide the case back, off the radio.
3. Once you've eased the radio out, turn it upside down with the front toward you.
4. Locate a board with "PC-3" stenciled on it in big white letters. It is roughly in the middle of the radio near the back. There is a rectangular, highly reflective (mirror-like) metal cover covering most of this board.
5. Gently remove this metal cover. It is held on by being press-fit over little metal dimples. A little careful prying will do the trick here.
6. Once the cover is off you should see the main CPU chip on the right, a resonator crystal (501-X I think?) in the rear right corner, and a vertical row of diodes to the left of the CPU chip. Some of diode positions will be labeled like this D-509, D-510, D-511, D-512, \*D-513\*, etc. I don't remember exactly which ones are labeled or not, but that's not so important right now, you should get the idea.
7. The diode D-513 is labeled (I know) and this is the beastie that disables the cellular phone frequencies and their 30KHz search step size. Snip this diode with diagonal cutters (or whatever). Make sure the snipped wire ends are not touching, and viola! You've got full 800MHz coverage on your Pro-2004.

Note: If D-513 is not there, it may be soldered to the underside of the circuit board. Also, instead of snipping, desolder and save the diode for the 400 channel and scan speed modification.

8. You may want to test it at this point. (Try entering 880 MHz or some other previously disabled 800MHz frequency, and verify that you don't get an ERROR.) Re-assemble.

### 400 CHANNEL and SPEED MODIFICATION

On the top of the sub-circuit board, locate the slot for D-513. Count backwards from there until you get to the space for D-510. Install a diode at D-510 in the same polarity as the rest of the diodes. There, you now have 400 channels instead of 300 ! Now install a diode at D-514 and you have increased the scan speed to 20 channels/sec from 16 ch/sec. Carefully re-assemble the metal box. Make sure everything else is as it should be. RE-invert the radio so it is right side up.

### THE SQUELCH MODIFICATION

Now, locate a sub-circuit box under the sloping front panel. It should have many alignment holes in the top. Pry the cover off very carefully. Locate IC-2 in the left side of the pc board. It should be marked IC-10420. Locate R-148, a 47 K ohm resistor between pins 12 and 13. Cut a lead of this resistor, But be sure to leave enough lead on both sides of the cut to solder to. Patch in a 100K ohm resistor. Make sure there are no solder balls or short circuits. Now your squelch will operate more smoothly.

### Bibliography:

*Popular Communications*, August 1987, pgs.18-20

*Monitoring Times*, October 1987, pg. 53

*Monitoring Times*, December 1987, pg. 60

I suggest strongly that you obtain the back issues and read through the letters or articles to verify that I did not mis-type something important :)

## **Realistic Pro-2005**

There is a socket that is not marked so it will be referred to as D501.

D501 and D503 removed : Scan rate of 6/12 cps

D501 only installed : Scan rate of 7/14 cps

D503 only installed : Scan rate of 8/16 cps

D501 and D503 installed : Scan rate of 10/20 cps (horray!)

D502 installed : Disable 823.95-850.95 MHz and 868.95-895.95 MHz

D502 removed : Full coverage from 760-1300 MHz

D504 installed : Normal spacing for all bands.

D504 removed : Enable 30 kHz spacing in areas restored by D502 removal

## **Realistic Pro-2006**

### **824-851, 869-896 MHz Frequency Restoration**

Tools Required: small Phillips screwdriver, small wire cutters.

Procedure: With the power cord unplugged, remove the two rear cabinet screws holding the upper cover. Lift off the upper cover, being careful not to stretch the speaker leads. Examine the inner, right-hand-corner of the front panel to find two glass diodes, labelled D503 (upper diode) and D502 (lower diode).

Using the clippers, very carefully snip the visible lead of the lower diode (D502) at its bend and slightly separate the cut ends. If it is ever necessary to send the radio back for warranty repair, the diode leads should be carefully resoldered. Reassemble, plug in AC cord, turn on scanner, and press RESET.

### **Keyboard Beep Delete**

With the top cover removed as described above, locate connector CN3, a 15-pin connector with colored wires at the front of the main circuit board. There are two procedures which will stop the beep tone from being heard through the speaker; read both to decide which procedure you want to follow.

(1) Find the center grey wire coming from CN3 and cut it midway to disable the beep tone. You may wish to solder a resistor in series to reduce the beep volume, a trimpot to vary the volume of the beep tone, or a miniature switch to choose between beep and no beep. (or)

(2) Using a pair of needle-nose pliers, CAREFULLY pry the plug from CN3, revealing a row of pins. Locate the center pin (#8) which corresponds to the grey wire and bend it down flat, disabling the beep circuit. Reinsert the plug. The pin may be erected again later to restore the beep tone if desired. This completes the restoration procedure. Reattach the cover and replace the screws.