

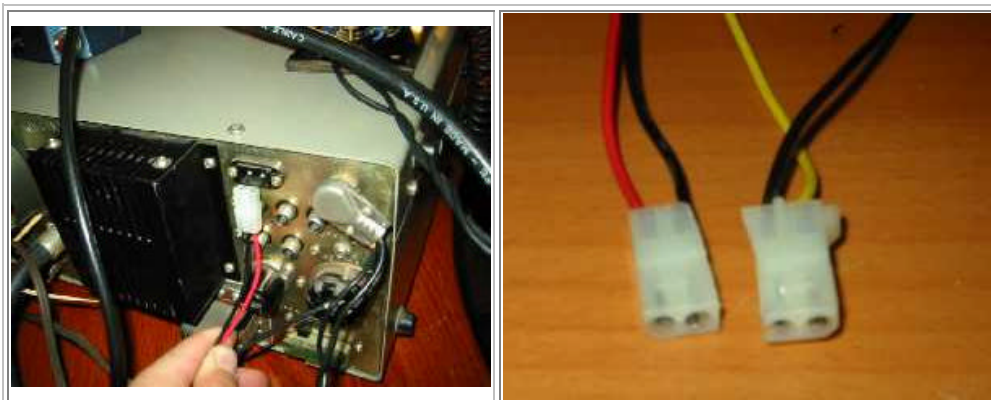
- C-520 or using DFD2-520 (**recommended for the TS-520S and SE**)
  - **usable on the TS-520 by tapping signals inside radio (instructions below).**



**Installation consists of connecting three inputs via black RG174 cables. IMPORTANT: POWER SOURCE SHOULD BE OFF BEFORE CONNECTING TO DIGITAL DISPLAY OR IT COULD BE SHORTED**

- JUMPER OPTIONS
  - There are two plug-on jumpers on the PC board inside the unit.
  - To access these jumpers on the C520, remove the screw from the bottom of the unit and slide the chassis out of the cabinet.
  - They are small black plastic jumper plugs that are plugged on four pins on the PCB.
  - The top jumper selects either 10Hz resolution (jumper on) or 100Hz resolution (jumper off).
  - The bottom jumper selects how the frequency is displayed
  - Bottom jumper ON
    - 10Hz resolution would display as 12.345.670 USB (as shipped)
    - 100Hz resolution would display as 12.345.600 USB
  - Bottom jumper OFF
    - 10Hz resolution would display as 12.345.67MHz USB
    - 100Hz resolution would display as 12.345.6 MHz USB

**Power is taken from Counter power connector. You only need to connect to the + side using .the RCA plug provided for the display end. Ground is provided by the coax .I cannot find a connector to fit that jack so I used a single pin removed from an old octal tube socket wrapped in tape or heat shrink. I think a Molex female pin could also be used. One customer made a connector by cutting down a PC power supply molex connector and shaving it to fit.**





Other end of signal cable is connected to the jacks intended for the DG-5 display.

- **If you have problems remember to adjust level controls (white trimpots) inside the display**
  1. set all three fully CCW then set each control by increasing each CW per below
  2. increase the CAR control until you see the proper radio mode displayed  
USB, LSB, CW etc.
  3. increase the VFO control until a stable frequency is displayed
  4. increase the HET control until a stable frequency for the band the radio is on. (set this on the 10 meter band)

The HF output of some 520S/SEs may not have enough output on the 10 meter band. **IF** so adjust the Heterodyne oscillator coils per the manual (excerpt from manual below)

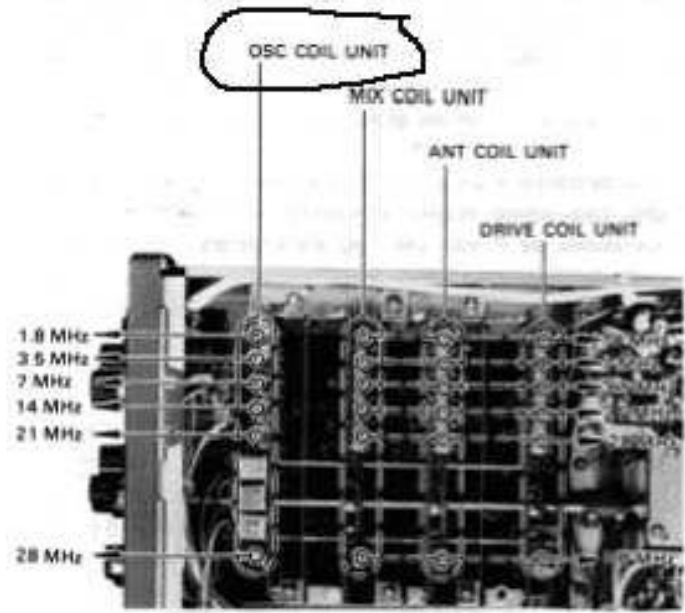


Fig. 37 RF Section Coil Diagram

■ HETERODYNE CRYSTAL OSCILLATOR

Adjust the heterodyne crystal oscillator's coils by switching the BAND switch to each band and tuning the appropriate coil (see Figure 37) as described below.

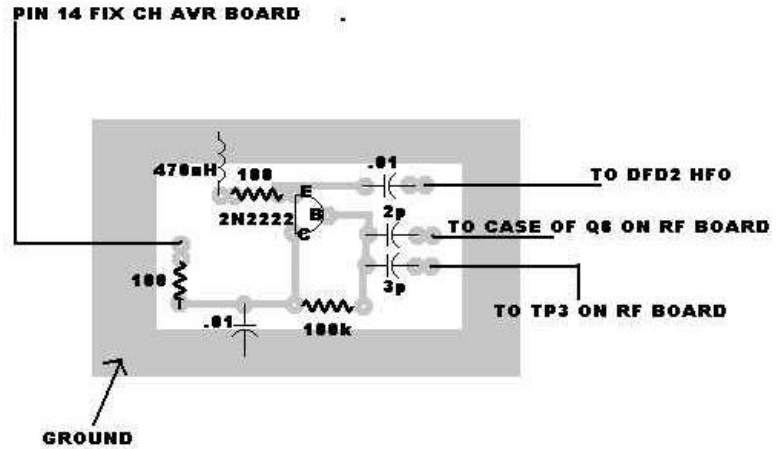
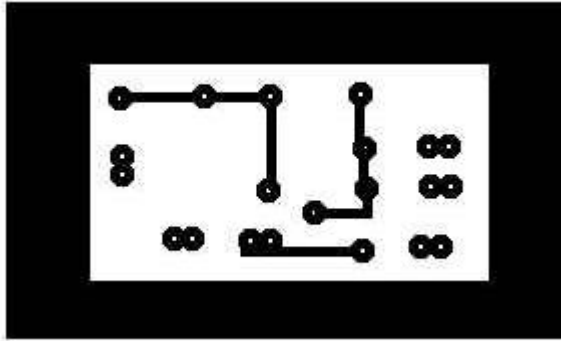
**Adjust coil for band not displaying properly to obtain stable frequency display.**

| Band     | Oscillator Frequency |
|----------|----------------------|
| WWV      | 23.895 MHz           |
| 1.8 MHz  | 10.695 MHz           |
| 3.5 MHz  | 12.395 MHz           |
| 7.0 MHz  | 15.895 MHz           |
| 14.0 MHz | 22.895 MHz           |
| 21.0 MHz | 29.895 MHz           |
| 28.0 MHz | 36.895 MHz           |
| 28.5 MHz | 37.395 MHz           |
| 29.1 MHz | 37.995 MHz           |

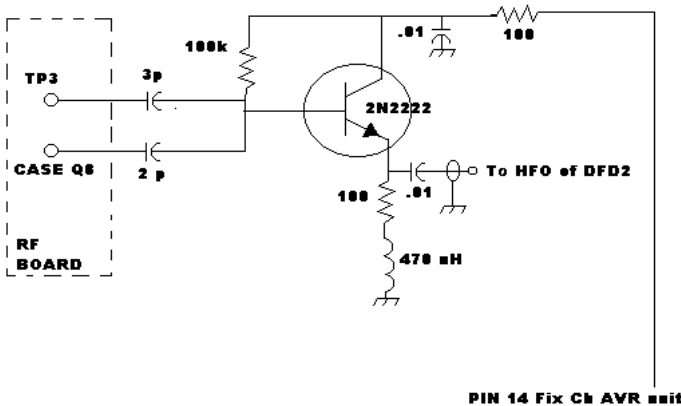
In this case adjust for stable operation of the digital dial rather than stopping the oscillator



All you really need is the emitter follower shown below with a little circuit board for it (you could use dead-bug construction or vector board construction easily). You don't need the little resistor / capacitor combinations for the carrier and VFO inputs as these can go directly to the C-520 digital dial. The VFO input connects to pin 1 or the remote VFO connector and gnd to pin 2. The Carrier input connects to the OUT terminal of carrier unit X50-0009-01.



PRINTED CIRCUIT BOARD



Thanks to WA4PJP for supplying this information.

**Some useful comments from a customer for the C-520 or DFD2-520.**

Hi Neil

Just wanted to mention that my C-520 frequency display - two line, blue - arrived July 27/06. I hooked it up, but only the blue display light came on. I opened it up - and in shipping one of the boards that plugs into the other board had become detached. I plugged it back in and it worked. I wanted to mention this for your future reference in case others have a similar problem - it is a very easy fix. **I usually put a rubber band to hold the two boards together but sometimes forget.**

Initially there was a problem with the digits bouncing around - but this was resolved simply by grounding my TS-520SE as it should be. Now the display is very stable. Again, if others were to have a similar problem, this would be a good starting place for them to check - make sure your transceiver is grounded as it should be.

I found using a small alligator clip with a rubber boot worked great for tapping off the power for the C-520 from the TS-520SE power socket.

I am very impressed by the C-520 display - very nicely constructed inside and out and works very, very well.

Many thanks for an excellent product!

Phil