



Efratom Division
Time and Frequency Systems

OPERATION AND MAINTENANCE MANUAL

MODEL

SPTB-100/LN-1

FRK(LN) FOR TEKTRONIX FRAME

RUBIDIUM OSCILLATOR

Notes:

Previous page is a copy of the cover for the **SPTB-100/LN-1** rubidium Oscillator. After this page, the manual seems to be a standard **FRK-()LN** manual. From the title page, it must have been a custom version for some Tektronics device.

I obtained one of these around the year 2000. The one I got had this label information:

Model: SPTB-100/LN-001
Part No.: 703-200-11
Ser No. 12716 Date Code: 8848
Customer Part No.: 26-0168-01

At the time I obtained it, I was told it was equivalent to the FRK-H version.

Connector

The unit I obtained has an interface connection similar to Figure 2.2 in the FRK manual, except that it was not a connector, but wires coming out of a circuit board. Here is a copy of the FRK manual figure followed by my notes.

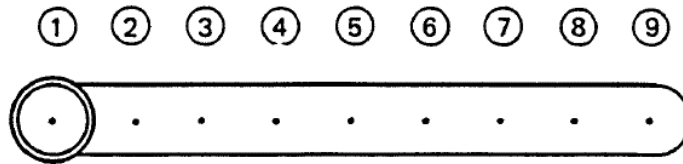


FIGURE 2.2. Optional Coaxial 8-Pin Wirewrap or Press-fit Connector and Connector Pin Arrangement

In order of the above pin numbers, here are the wires out of the SPTB-100

1. Coax with male SMA -- 5 MHz output, 1 Vrms to 50 ohms
2. Not used
3. Blue wire – Ground
4. Red wire -- Heater +22 to +32 V
5. Orange wire – Circuit +22 to +32 V
6. White wire – Resonance Lock signal, on lock pulled to gnd through 100 ohms
7. Green wire – Xtal Control voltage, +2 to 16 V
8. N/U
9. N/U

Note that the connections are a bit different from the FRK manual listing, with a separate Red wire for the Heater supply on this version.

Repair

When I got this unit, it wouldn't lock. Using the FRK troubleshooting procedures, I could see that the signals looked right, except the 5 MHz oscillator was not sweeping through a range where lock could occur, while I had the trimmer at one end – in the desired direction. In the crystal oscillator circuit of this unit, C7 was 4.7 pF. I removed that capacitor and then was able to set the trimmer at a point where it would lock with a tuning voltage in mid-range (between 6-7 V).