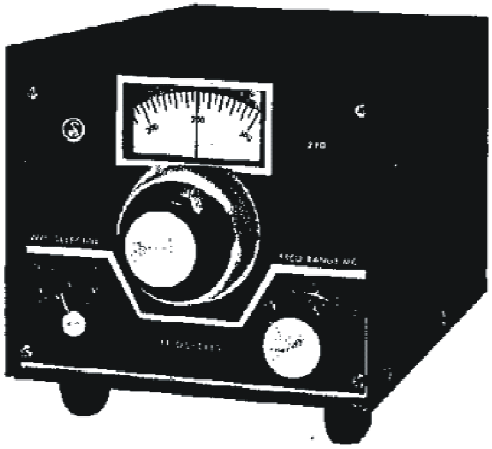


SWAN MODEL 210 FREQUENCY CONTROL UNIT

SWAN MODEL 210 FREQUENCY CONTROL UNIT

Model 210 Frequency Control Unit is designed for full coverage of the 50-54 mc band when used with the model 250 transceiver. The unit matches the 250 in height, depth, and styling. Telay switching is built-in, and a selector know on the front panel provides for selection of frequency control. In position 1 the VFO in the 250 is used for both transmit and receive. In position 2 the 250 VFO is used for transmit and the external 210 VFO is used to receive. In position 3 the 210 VFO is used for both transmit and receive.

An adaptor socket must be installed on back of the 250 transceiver to accomodate the 210. This adaptor socket and installation kit is included with the 210. See page 24 for details.

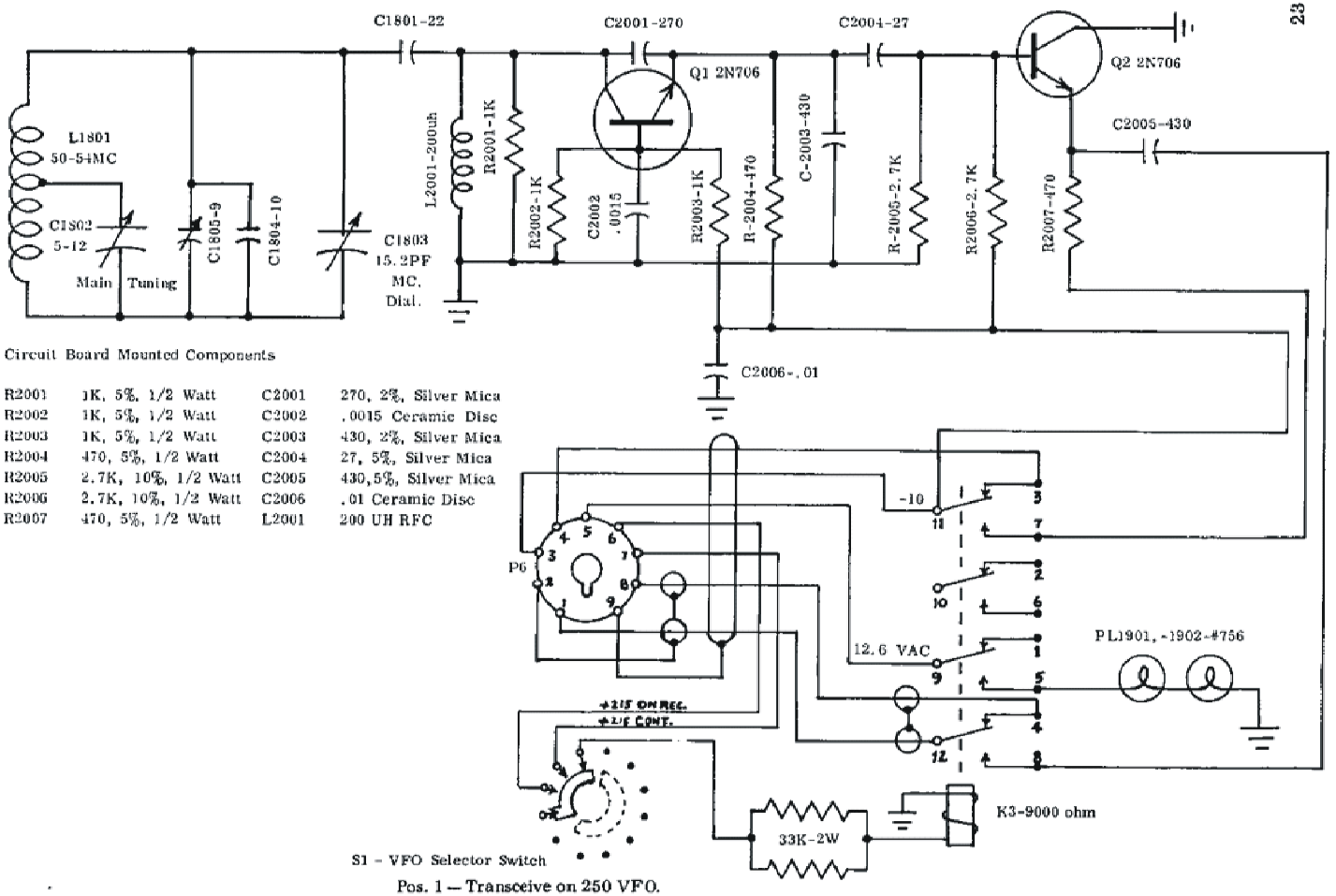
CIRCUIT THEORY

Q1, the 2N706 Oscillator operates in the common base configuration, as a Colpitts oscillator. See Figure 6. Capacitors C1801, C2001, and C2003 effectively tap the oscillator across only about 10 percent of the tank circuit. This results in exceptional stability. Q2, the Emitter Follower, is used for matching the impedance of the coaxial cable to the transceiver, as well as for isolation. The KC tuning dial provides vernier tuning over a 0 to 500kc range, and the MC dial is adjusted to cover the desired range.

ALIGNMENT

For frequency calibration of the model 210 external oscillator, refer to page 11 for instructions on calibration of the internal VFO in the model 250 transceiver. The same procedure applies to the model 210. Actual oscillator frequency is listed in the accompanying chart.

Transceive Frequency	Injection Freq. From VFO Amp.	Oscillator Frequency
49.5 MC	38,802 KC	12,934.0 KC
50.0	39,302	13,100.6
50.5	39,802	13,267.3
51.0	40,302	13,434.0
52.0	41,302	13,767.3
53.0	42,302	14,100.6
54.0	43,302	14,434.0



Circuit Board Mounted Components

R2001	1K, 5%, 1/2 Watt	C2001	270, 2%, Silver Mica
R2002	1K, 5%, 1/2 Watt	C2002	.0015 Ceramic Disc
R2003	1K, 5%, 1/2 Watt	C2003	430, 2%, Silver Mica
R2004	470, 5%, 1/2 Watt	C2004	27, 5%, Silver Mica
R2005	2.7K, 10%, 1/2 Watt	C2005	430, 5%, Silver Mica
R2006	2.7K, 10%, 1/2 Watt	C2006	.01 Ceramic Disc
R2007	470, 5%, 1/2 Watt	L2001	200 UH RFC

S1 - VFO Selector Switch

Pos. 1 — Transceive on 250 VFO.

Pos. 2 — Transmit on 250 VFO, Receive on 210.

Pos. 3 — Transceive on 210 VFO.

FIG. 14 Model 210 Variable Frequency Oscillator

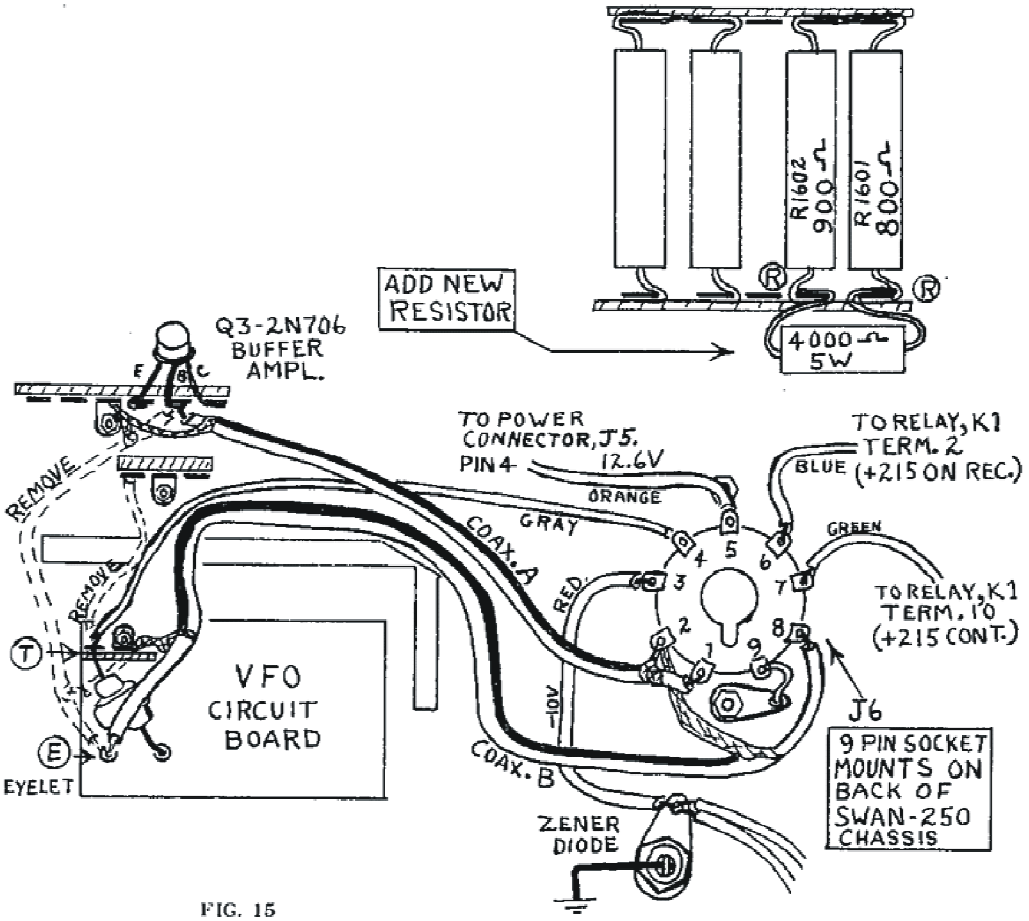


FIG. 15

MODIFICATION INSTRUCTIONS, for installation of Model 210 outboard VFO socket in Swan 250 Transceiver.

1. Install the pre-wired socket in the accessory location on the back of the 250. Be sure to secure the mounting screws tightly.
2. Remove coax. running from eyelet "E" of the VFO circuit board to base terminal of Q3. Connect center conductor of new coax. "A" to base terminal of Q3, and its shield to ground lug, as illustrated.
3. Connect center conductor of new coax. "B" to eyelet "E" of VFO circuit board. Connect its shield to ground lugs as illustrated.
4. Remove and discard the wire lead going to term. lug "T" on the circuit board, and connect the new gray wire to lug "T".
5. Connect the Red, Orange, Blue, and Green leads as illustrated.
6. Connect the new 4000 ohm 5-watt resistor to term. lugs R-R as illustrated.
7. The Model 210 VFO may now be plugged into J6.