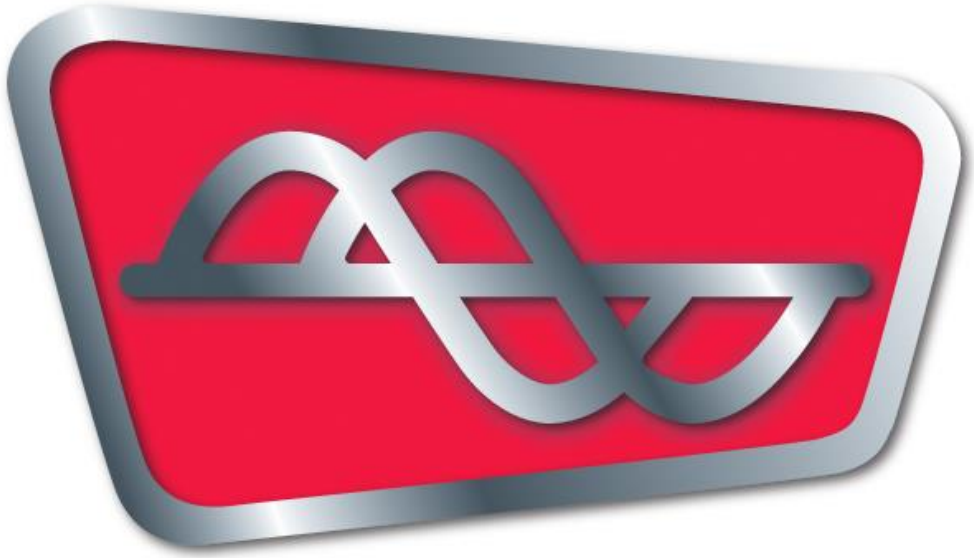
Transceiver Adapter Ideas for Vintage 10A/20A SSB Rigs



Central Electronics

CE-20A/SX-115 in Full-Transceiver Mode

Used on the 3870KHz Vintage Sideband Net

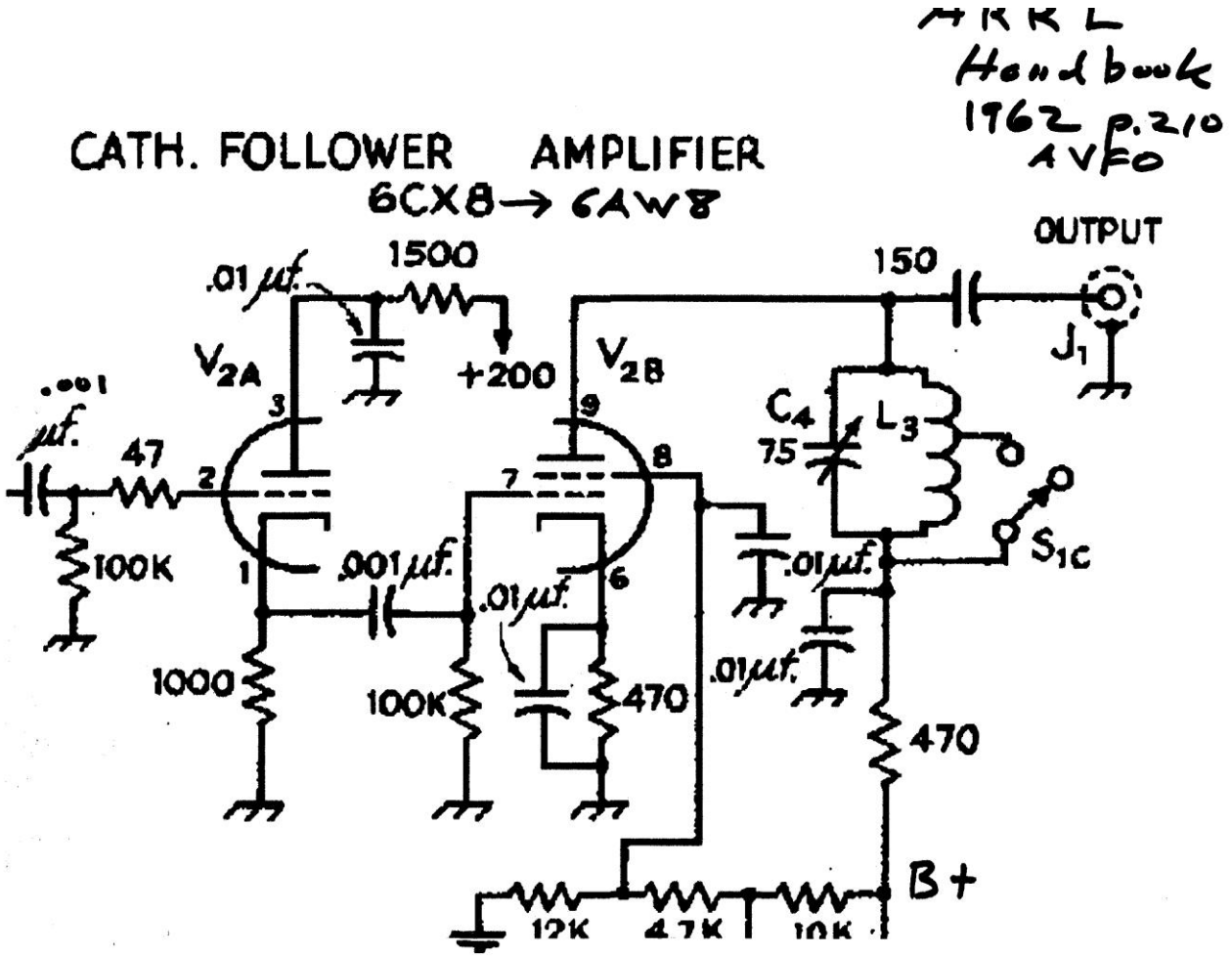
What's Wrong with this Picture?

6DQ5 Afterburner – CE Style of Course!

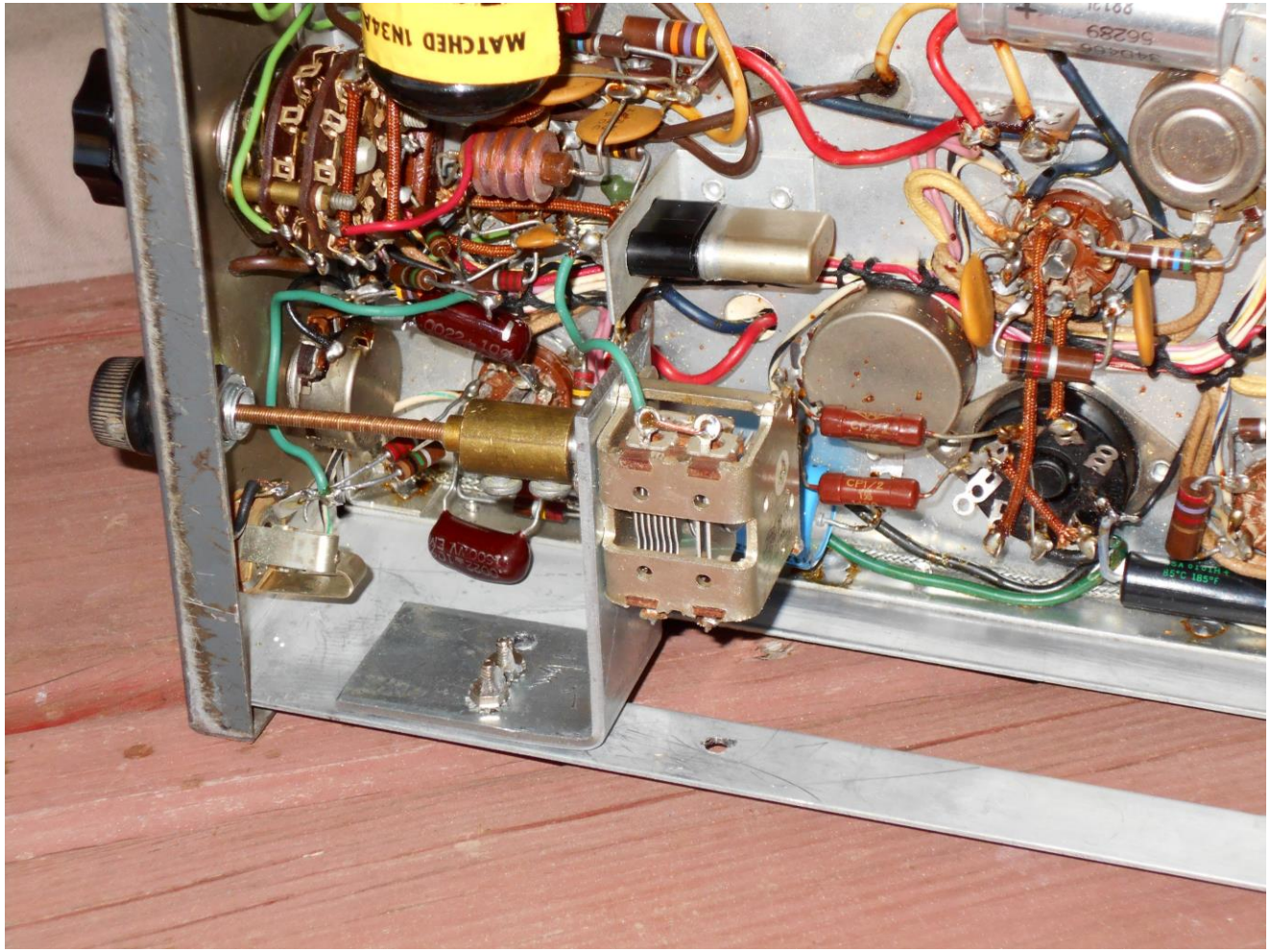
First-Generation Transceiver Adapter

Basic Transceiver Adapter – 5MHz VFO Buffer

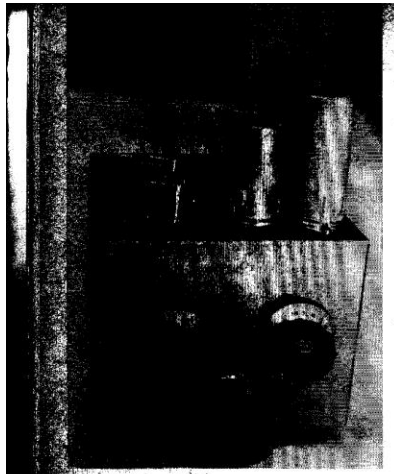
Platform for CE 9MHz Exciter – SX-115 Receiver



Transceiver Trim Control



CQ's Multiband Transceiver Adapter



Front view of the adapter shows the simplicity. On the left is the combined on-off bandswitch. To the right, is the oscillator frequency trimmer. On top of the chassis, at the right, is the 6BA7; alongside it, the 6C4 is in front and the 6CB6 just behind it. Inductor L_2 is in the large can. The knob for tuning capacitor C_2 may be seen just behind the four crystals.

A

A 75A-4/HT-32

"Transceiver"

BY J. W. SPENCER,* W4HDX

A simple three tube adaptor can be made to permit transceive operation with a conventional receiver and transmitter such as the 75A-4/HT-32 combination. Such a unit is described below. The unit can be modified simply to accommodate any other combination of quality units.

SINCE the general trend seems to be toward transceive operation, many operators have traded in equipment which in our opinion is far superior to many of the transceivers on the market today. For example, there are many desirable features lacking in some of the transceivers such as a Q multiplier, Notch Filter and Noise Limiter circuit. We won't even mention the fact that the sensitivity of the larger receivers is better than the average transceiver which we have had the opportunity to listen to. There are also advantages to be found in some of the earlier transmitters such as s.s.b.-a.m. operation and full frequency coverage not available in most transceivers. Unless you are going mobile, there is really no reason to trade in your gear. Here's a simple little gadget that will let you keep your cake and eat it too.

Theory of Operation

The transceive adaptor picks off a small amount of r.f. from the variable oscillator in the receiver through a small coupling capacitor from the mixer injection grid. This r.f. is fed into a mixer stage which converts to the proper frequency (5.0-5.5 mc). This is amplified and fed into the v.f.o. socket in the transmitter. The circuit of this unit is shown in fig. 1.

It is not necessary to drill any holes or modify any wiring in either the receiver or transmitter since r.f. input and output connections are made through the use of plug-in "voltage test sockets." These units are readily available from any jobber and are the type that are used for checking socket voltages above the chassis in TV sets. They have metal tabs sticking out around the side of the socket which can be used to connect the r.f. leads.

Construction

Precautions should be taken in the construction of the unit to shield the input and output r.f. leads all the way up to the tube socket pin to prevent stray radiation from getting into the v.f.o. input of the transmitter. This is very important since, if the receiver v.f.o. frequency, 2455 kc to 2655 kc, is allowed to enter the transmitter v.f.o. input circuit, it will multiply to 4910-5310 kc and cause spurious emissions and out of band operation. Proper shielding of the input and output leads as well as the output plate tank coil in the adaptor will eliminate this difficulty. Do not use any larger capacitors than shown in the circuit for coupling in and out

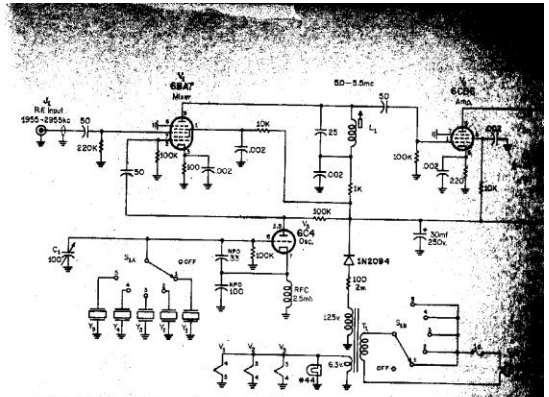


Fig. 1—Circuit of the transceive adaptor. All capacitors greater than one are in mmf. All capacitors greater than one are in mf. All resistors are ½ watt unless otherwise noted. The coils are shown

mixer or detune the v.f.o. plate circuit in the transmitter thereby reducing the r.f. drive to the transmitter.

The 5.0-5.5 mc coils used in the unit were obtained from surplus equipment but could be wound very easily with the aid of a grid-dip meter. The output coil, L_2, should be shielded.

The crystals are the only critical part of the unit. They can be obtained from any reputable crystal manufacturer at a price of about $4.00 each. When ordering, be sure to specify that they are to operate with a load capacity of 32 mmf.

Tune-Up and Adjustment

First, (before connecting the adaptor unit) tune up the HT-32 transmitter in the a.m. mode on 21.3 mc. Then remove the 6CB6 v.f.o. tube V_9 from the transmitter and insert the output lead from the transceive adaptor in the v.f.o. socket. (Do not replace the transmitter v.f.o. tube in the top of the adaptor).

Next, remove the 6BA7 mixer tube V_5 from the 75A-4 receiver and insert the input lead from the transceive adaptor into the mixer socket. Replace the 6BA7 tube in the top of the test socket. Tune the 75A-4 to 21.3 mc. Turn on power to the transceive adaptor and set bandswitch to 15 meters USB position with a grid-dip

Table I—Crystal

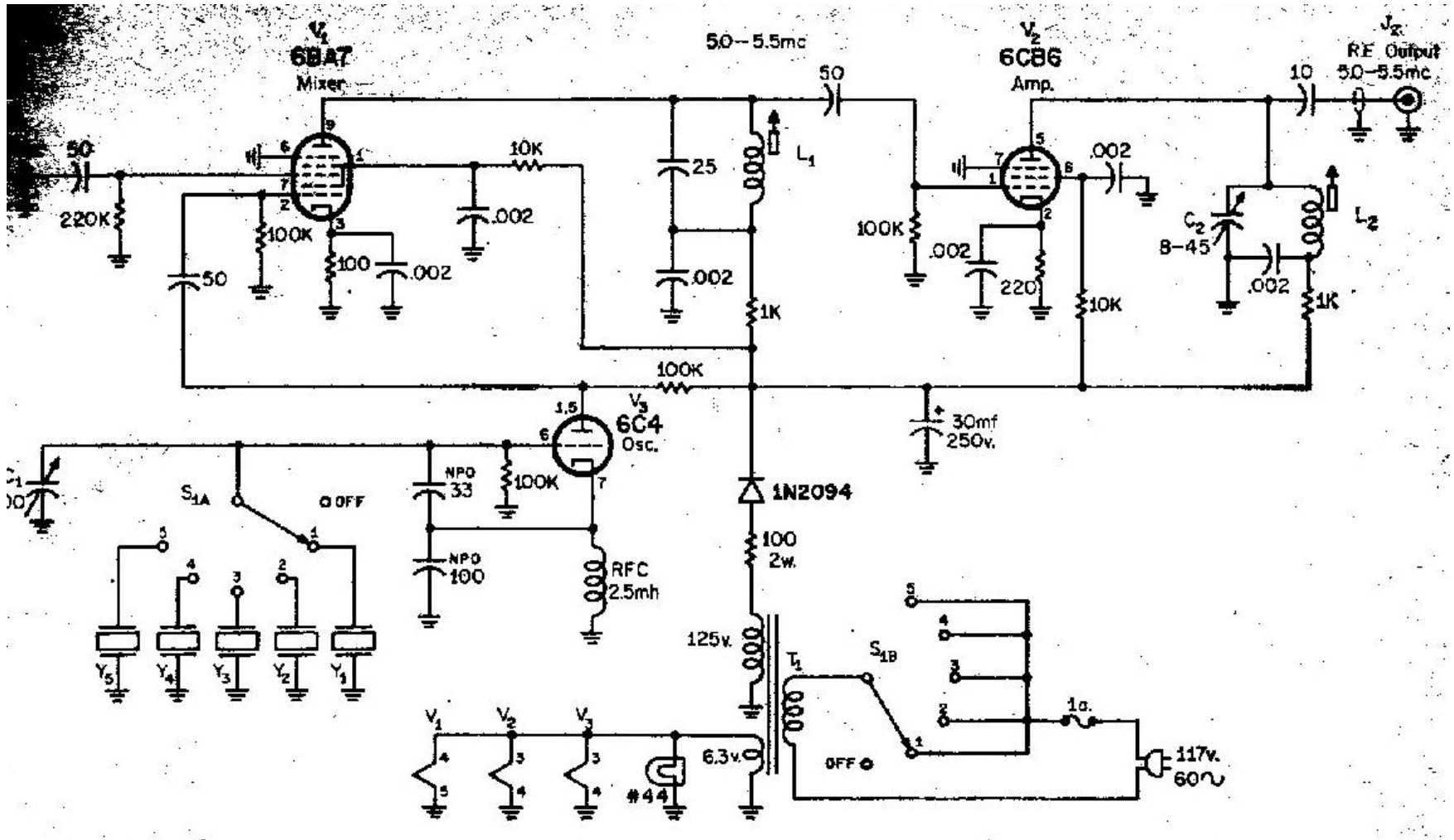
Band	Sideband
80	Lower
	Upper
40	Lower
	Upper
20	Lower
	Upper
15	Lower
	Upper
10	Lower
	Upper

meter coupled to L_1. Adjust approximately 5.3 mc. Couple to L_2 and adjust L_2 for trimmer capacitor C_2 set at

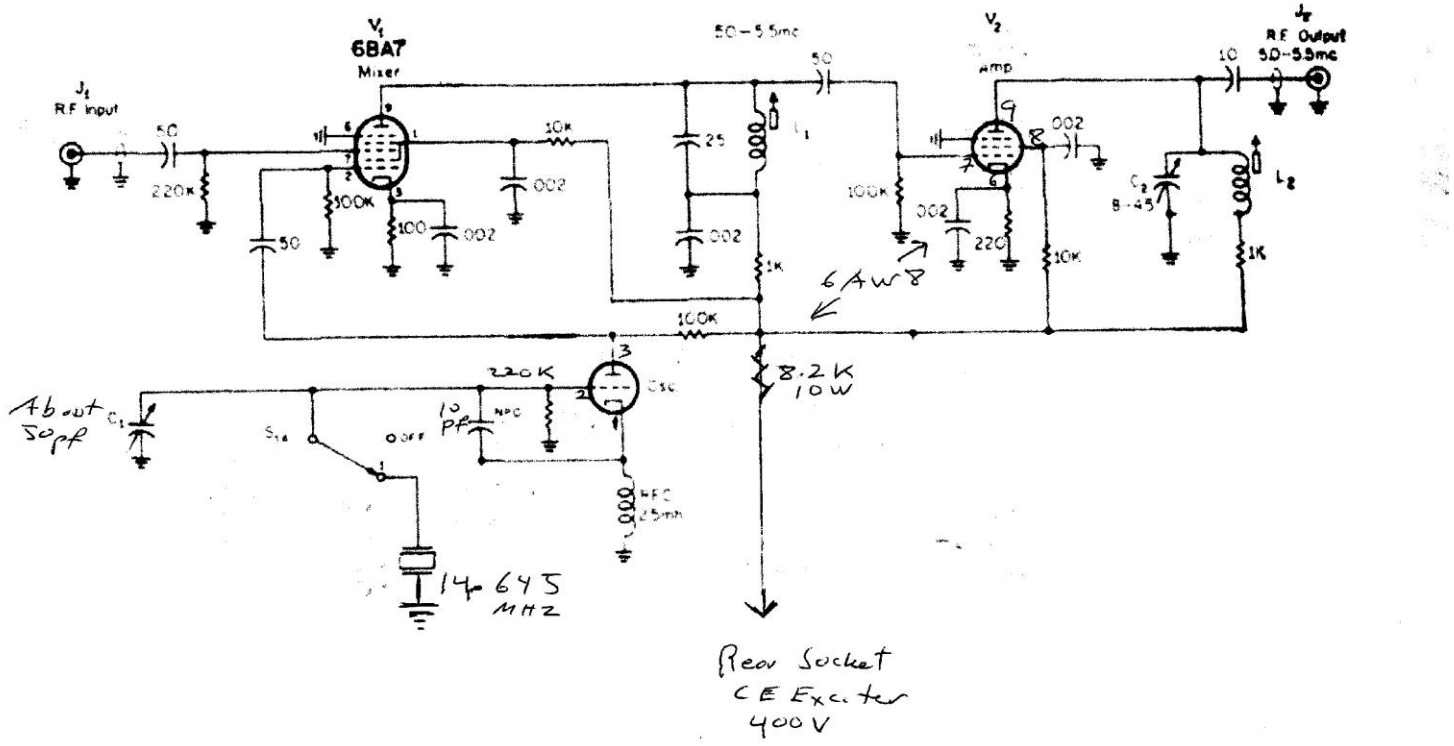
Now key the HT-32 and watch the r.f. output meter should be obtained. Go back for maximum r.f. output.

Bottom view of the

CQ Transceiver Adapter Schematic



K5LYN's Cut-n-Try Design Results



Drake R4( ) to CE-10A – Construction Phase

Transceiver-Adapter Packaging

Transceiver-Adapter: Inside View