



Tubester Sets 32S-1 and 32S-3

**DESCRIPTIONS:** The transmitter Tubesters are similar to the receiver Tubesters in circuitry design approach and packaging. (Reference the receiver Tubester literature descriptions). The ST311a Relay Actuator section dissipates about 1.5 watts, and it is equipped with a heat sink protruding from the case top; all others dissipate less than one watt per section, and are completely enclosed in their cases.

**PERFORMANCE:** Operation and performance of the transmitters are unchanged with any one or any number of the Tubesters exchanged for the tubes that they replace. The following individual Tubester characteristics are noteworthy:

The ST301 1st and 2nd Audio has a few db more gain than the tube replaced, and will show a lower hum level in laboratory tests; we can tell no difference on the air. The Side Tone Oscillator ST311b has a bit less output than the tube replaced, but ample for its CW monitor and Vox-activating functions. The ST314 Vox and Anti-Vox Amplifiers, ST310 Vox Rectifiers, and ST311a Actuator provide the normal Vox characteristics. Installing the second ST310 at V13 in the 32S-1 makes that portion of the circuit identical to that of the 32S-3.

The input circuits of ST305a,b 2nd Mixer are tailored to match the grid-block keying characteristics of the tube. The input circuits of ST303 IF and ST306 RF Amplifiers provide normal ALC response, and a padding circuit in ST303 compensates for its lower current drain to provide normal panel meter readings of ALC compression.

ST302b BFO, ST312 HF Oscillator and ST315 VFO provide injection voltages tightly within the manual specifications. The ST315 VFO is more stable than the tube during the early minutes after power turn-on. The ST304 1st Mixer matches the tube almost identically at V4.

The DX Engineering LC-1-32S Speech Processor may be used. It will operate normally at V3 with the ST303 IF Tubester installed in it.

**POWER INPUT REDUCTION:** A Tubester Set installed reduces the transmitter's input power about 30 watts. While this is only a small percentage of the "key down" power consumption, it is a surprising 50% reduction in the heat dissipated within the transmitter during stand-by.

**INSTALLATION AND ALIGNMENT:** The Tubesters simply plug-in to replace the tubes. No modification of the transmitter is needed or recommended. The RF and OSC trimmers will need touch-up after the exchanges at V5, V6 and V12; the ALC Zero re-set with the V3 exchange; and the Vox gain and time constant control settings may be changed slightly when ST310 and ST314 are installed. All alignments are in accord with the Collins manual, and full instructions are included for your convenience in the Tubester manual furnished with the Sets.

**SKYTEC TUBESTER WARRANTY**

Should a Tubester fail under normal operating conditions in the circuit for which it is designated SKYTEC will repair or replace it for its original purchaser at no charge.

Tubesters blown by accidental insertion or removal with power on, or installation in the wrong socket will be repaired or replaced for their original purchaser at 50% of the unit list price plus \$1. for mailing.

This warranty has no time limit, and SKYTEC will honor it unconditionally at least through calendar 1981. When the Tubester market no longer supports a sales and manufacturing activity, it is our plan to maintain or establish a continuing service source from which Tubester set owners may purchase repair, replacements and/or schematics and components. It may be possible also to provide a continuing Warranty Contract on a small annual fee basis.