

LC-2-T4X Speech Processor -

INSTALLATION

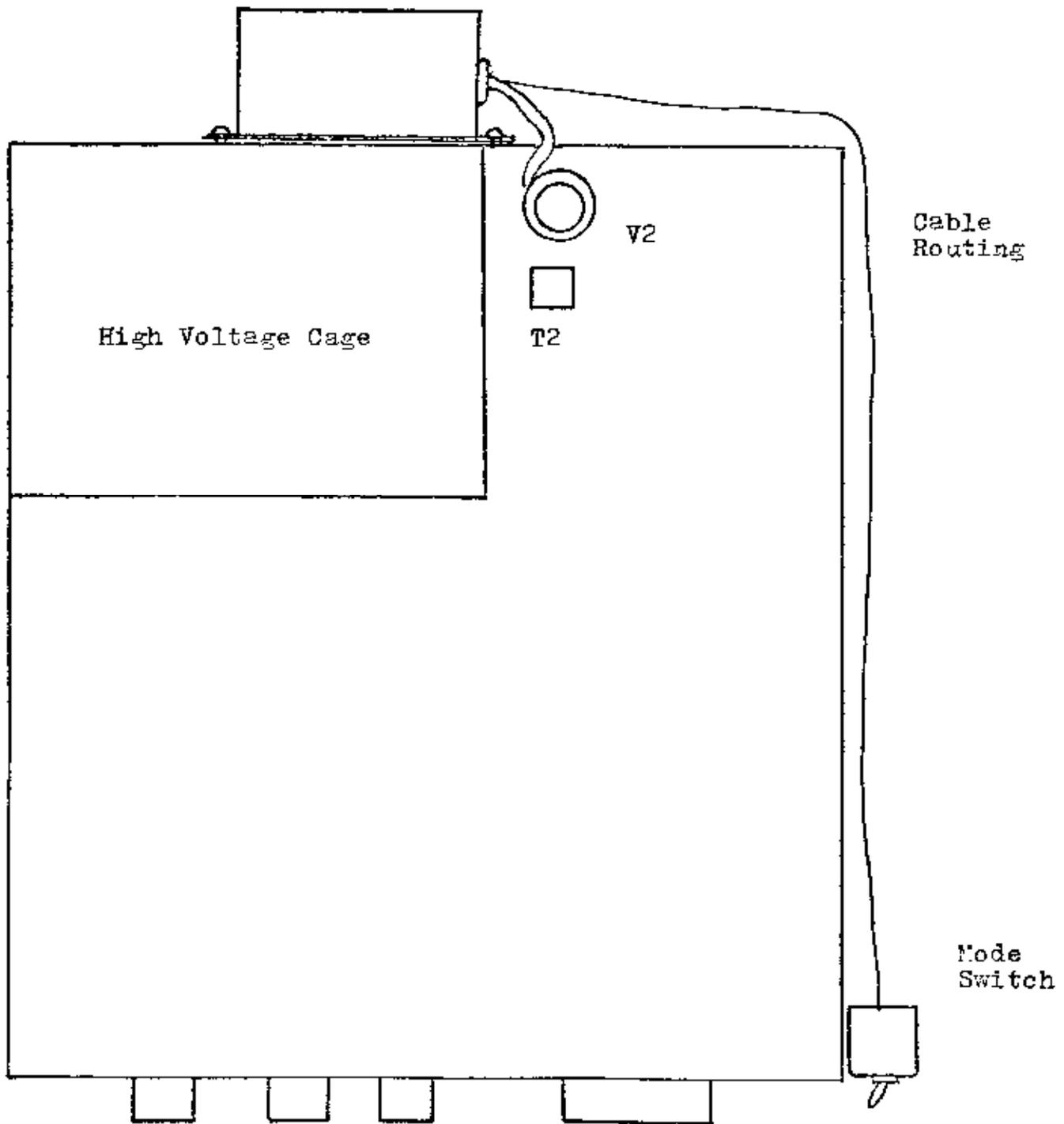
- (1) To avoid possibility of shock, unplug the line cord of the transceiver.^{mitter}
- (2) Remove the three upper screws which hold the cover on each side of the transceiver.^{mitter} Remove the cover by lifting first at the rear and then at the front.
- (3) Refer to the top view on the next page. Remove the two small screws at the top edge of the rear wall of the high voltage cage. Position the speech processor so that the holes in the mounting bracket are aligned with the screw holes and mount it there, using the original screws, *or sheet metal screws provided.*
- (4) Remove the tube shield from V2. This will not be used when the processor is installed.
- (5) Remove V2 and install it in the extender socket attached to the speech processor. Be sure it is firmly seated in the socket.
- (6) Carefully press the extender socket into the tube socket vacated by V2. Dress the cable over the top of the rear panel as shown in the top view.
- (7) Position the processor switch to the OUT position. Tune and load the transmitter in the normal fashion.
- (8) Set the controls as follows:
 - a) XMITR GAIN fully counterclockwise.
 - b) SIDEBAND in the LOWER position.
 - c) FUNCTION switch to TUNE
 - d) Processor mode switch OUT.
- (9) Briefly rotate the XMITR GAIN clockwise until the plate current reads .20 amp. If this occurs at or near your normal XMITR GAIN setting, installation is complete. If not, proceed below.

(10) If transmitter gain appears to be low, it will be necessary to make an adjustment on the transmitter. Set the XMITER GAIN control so that plate current reads approximately .15 amp. Using the tuning tool provided or an equivalent, adjust the core of T2 for maximum plate current. T2 is located just in front of V2. As the plate current rises, lower the XMITER GAIN control to keep the plate current near .15 amp.

(11) Replace the top cover of the transceiver and attach with the original screws. Attach the processor wave switch as shown in the figure, with the two screws which normally hold the upper and lower covers in place.

Note: When speech processing is used, gain of the transmitter is considerably higher than normal. For this reason it may be desirable to recheck or readjust the Carrier Balance, using the normal procedures.

Mounted Location of
Speech Processor



TOP VIEW OF TRANSMITTER

OPERATION

Operation of the DX ENGINEERING Speech Processor is very simple. Only two controls need be considered. One is the processor mode switch, and the other is the XMTR GAIN control on the transmitter.

The processor mode switch has three positions, labeled U, OUT, and L. When the switch is in the OUT position, it is effectively out of the transmitter circuit and therefore the set will operate in its normal fashion.

When speech processing is to be used, the switch is moved to the position which matches the position of the SIDEBAND switch on the transmitter. That is, when the SIDEBAND switch is in the LOWER position, the processor mode switch should be moved to L. Similarly, when the SIDEBAND switch is used to select UPPER sideband, the speech processor mode switch should be moved to the U position.

The XMTR GAIN Control does not function as a standard gain control when processing is employed. Instead it functions as a clipping level adjustment. When the control is used at the position which is normal for your microphone, as described in the TX manual, approximately 15-20 db of clipping is employed. Increased degrees of clipping may be used by increasing the XMTR GAIN control.

It should be remembered that increasing the control too far will only raise the ambient (background) noise unnecessarily. The final setting of this control should be made by monitoring the transmitted waveform with an oscilloscope, or by on-the-air checks with an experienced listener.

Increased background noise is a by-product of speech compression or clipping. Remember, the purpose of such a processor is to bring the low level voice signals up to the same amplitude as the high level peaks, thereby raising the average power of the transmitter. Since the device cannot discriminate between the human voice, blower noise, background conversations, etc., it may be desirable to use a directional microphone or give some attention to the acoustical layout of the microphone.

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