TR-300A OPERATIONAL DESCRIPTION

Transmit

Receive

Signals from the receive antenna proceed through 3 tuned circuits, Q101, and 3 more tuned circuits to mixer Q103. Oscillator Q102 is a Colpitts with the collector tuned to the second harmonic. Y101 operates on the fifth overtone with C112 and L107 acting as mode suppressor. From the mixer the signal continues through FL101 to second mixer U101A. This downconverts the 10.7 MHz signal to 455 kHz. After passing through FL102, the signal is limited and detected by U101B. U101B contains a quadrature detector which is tuned by L109. U101C functions as a 16kHz bandpass filter for operating the squelch. With no signal a large amount of noise is present at U101 pin 11 and this is rectified by D101, lowering the voltage at pin 12 to less than .65 volt. This switches pin 14 to ground and mutes the audio. R122 adjusts the bias current through R121, R120 and D101 and is used to set the squelch point. De-emphasis is provided by R117,R125, and C128. U2A is an amplifier whose gain is controlled by the level of audio entering the rectifier at pin 4. As the level here increases, the gain is increased and this results in a 2:1 expansion characteristic, which reverses the processing done in the transmitter. R159 is the user volume control and U105 drives the headset.