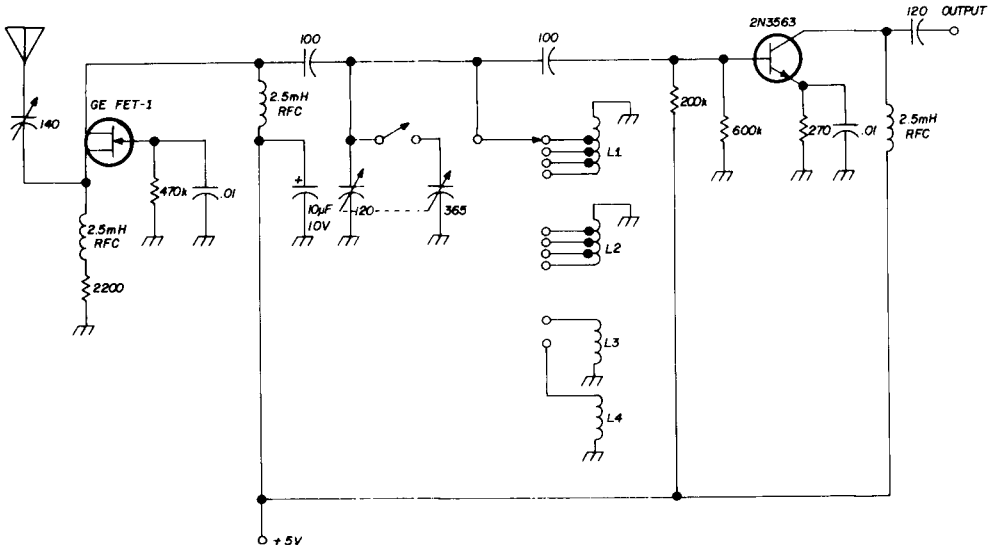

L1 31 turns no. 18 airwound, 5/8" diameter, 1-7/8" long, (B&W 3007) tapped at 2, 11 and 27 turns (tunes 4—40 MHz)

L2 59 turns no. 18 airwound, 1" diameter, 1-7/8" long, (B&W 3016) tapped at 7, 28 and 38 turns (tunes 1.75—18 MHz)

L3,L4 80 turns no. 26 closewound on ½" slug-tuned ceramic form, brass slug (L3 tunes 1.05—2.2 MHz, L4 tunes 0.5—1.25 MHz)

fig. 2. Preselector for use with general-coverage receivers.

general-coverage preselector

The circuit in **fig. 2** was designed for receivers tuning between 0.5—30 MHz. Active devices are an fet in a common-gate, source-input circuit and an npn silicon transistor in a standard common-emitter circuit. The transistors are inexpensive. The fet, a GE FET-1, costs $2.25; the 2N3563 transistor is available from Poly Paks at four for a dollar.

The preselector has fairly uniform gain. Measured at the receiver, preselector gain is 20 dB between 2—30 MHz, with a rising characteristic toward the low end of the broadcast band, where the gain of most receivers seems to be down.

The low-impedance source input of the fet matches low-impedance antennas. The fet is used mainly as an impedance-matching device and has little gain when used alone. High output impedance of the fet and high input impedance of the npn transistor results in low tank-circuit loading; thus tank-circuit Q remains high. With a 5-volt power supply, total current drain is less than 2 mA.

Another fet could have been used instead of the npn transistor; however, the 2N3563'S gain characteristic, together with its low price, made it a desirable choice.

The broadcast band is divided into two segments. A two-gang capacitor, with provisions for paralleling, is used. This gives some flexibility, but it isn't entirely necessary for satisfactory operation. The variable capacitor in the antenna circuit is used to vary input coupling on the lower-frequency bands, since overloading causes cross modulation.

The transistor sockets and related circuit components are mounted on a 2 x 4-inch piece of perf board. This board, plus the larger parts, are mounted on a 4 x 7-inch piece of wood.

With my DX-150, which has spotty sensitivity and some image problems, the preselector improves reception on the low end of the bc band and on 160 meters. With a 25-foot-length of wire for an antenna, the preselector-receiver combination performs very well.

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