

A QRP Transmitter for 30 Meters

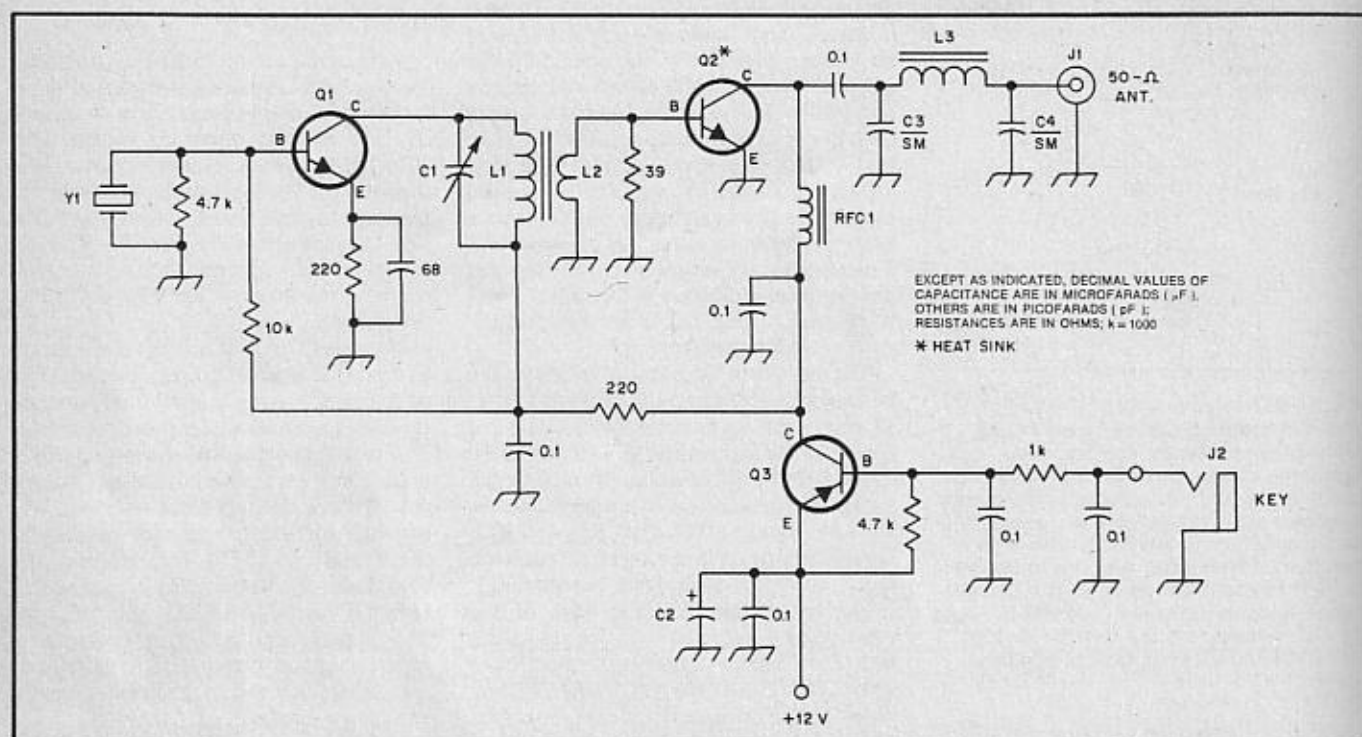


Fig 1—A schematic diagram of the QRP transmitter for 30-meter operation. Fixed-value capacitors are disc ceramic. Inductor cores are available from Amidon Associates or Palomar Engineers.^{1,2} The enclosure is from Radio Shack® (RS-270-251), and the circuit board is from Circuit Board Specialists.³ An etching pattern for this circuit appears on p 11.

Y1—Fundamental-mode crystal for the 30-meter band.
Q1—2N2222A or equiv.
Q2—2N3553 or equiv.
Q3—2N4036 or equiv.
C1—150-pF mica trimmer, ARCO no. 424.
C2—470- μ F, 25-V electrolytic or tantalum capacitor.
C3, C4—330-pF silver-mica or polystyrene capacitor.

L1—30 turns, AWG no. 24 enameled wire on a T-50-2 core.
L2—3 turns, AWG no. 24 enameled wire over L1.
L3—13 turns, AWG no. 22 enameled wire on a T-50-2 core.
RFC1—30 turns, AWG no. 28 enameled wire on an FT-37-63 core.
J1—SO-239.

J2—Phone jack or phono jack.

¹Amidon Associates, 12033 Otsego St, North Hollywood, CA 91607, tel 213-760-4429.

²Palomar Engineers, PO Box 455, Escondido, CA 92025, tel 619-747-3343.

³Circuit Board Specialists, PO Box 969, Pueblo, CO 81002, tel 303-542-5083.

For updated supplier addresses, see ARRL Parts Suppliers List in Chapter 2.

Fig 1 shows an inexpensive transmitter for the 30-meter band. The combination of excellent propagation characteristics and a relatively low QRM level on this band make solid communication routine at QRP levels. The circuit shown was adapted from a W7ZOI design shown in "Experimenting for the Beginner" by Doug DeMaw, W1FB, in the September 1981 issue of *QST*. The transmitter can be put on 30 meters with relative ease.

The only major changes required were to resonate the oscillator output circuit, and filter the amplifier output on the new frequency. This was done by changing the number of turns in L1 and selecting an appropriate range for C1. A new output filter (C3, C4, L3) was designed using the compo-

nent values shown in the schematic. In addition, the antenna output jack was changed to an SO-239 (to suit my personal preference), and a ground stud was added to the enclosure (see Fig 2). My circuit is built on a printed circuit board as in the original article. The transistors shown differ from the original design only because they were available in my junk box.

The transmitter performance is excellent, and the keying is clean. Output power is exactly 1 watt when using a 12.8-V dc supply (measured with a VTVM and a 50- Ω resistor). Excellent signal reports have been received from stations in New Brunswick, Florida and from as far west as Kansas.—Frank Pitman, WD4DDS, 12 E Lakeshore Dr, Rome, GA 30161

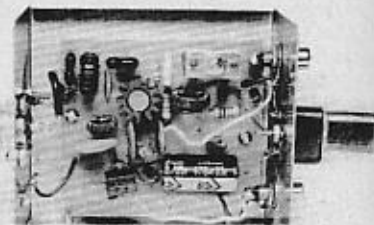


Fig 2—An interior view of the QRP transmitter as converted for 30 meters. The heat sink is on Q2.