

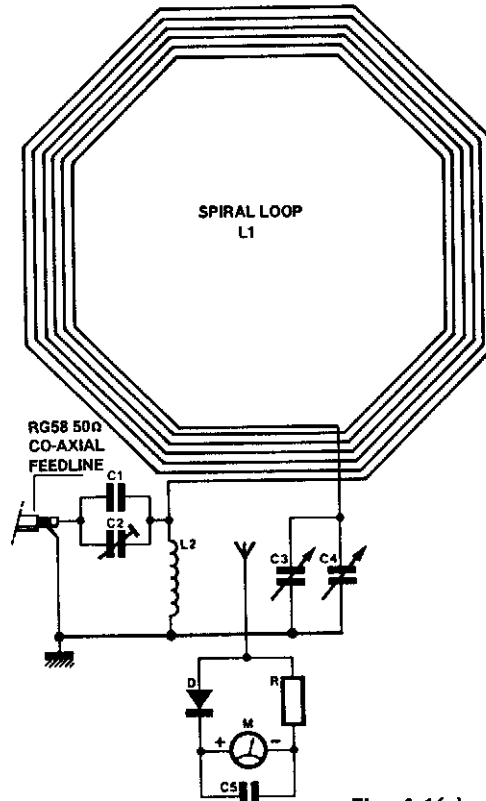
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Antenna Circuits

The sources of the following circuits are contained in the Sources section, which begins on page 660. The figure number in the box of each circuit correlates to the entry in the Sources section.

Loop Antenna for 3.5 MHz
1-to 30-MHz Antenna Tuner

LOOP ANTENNA FOR 3.5 MHz



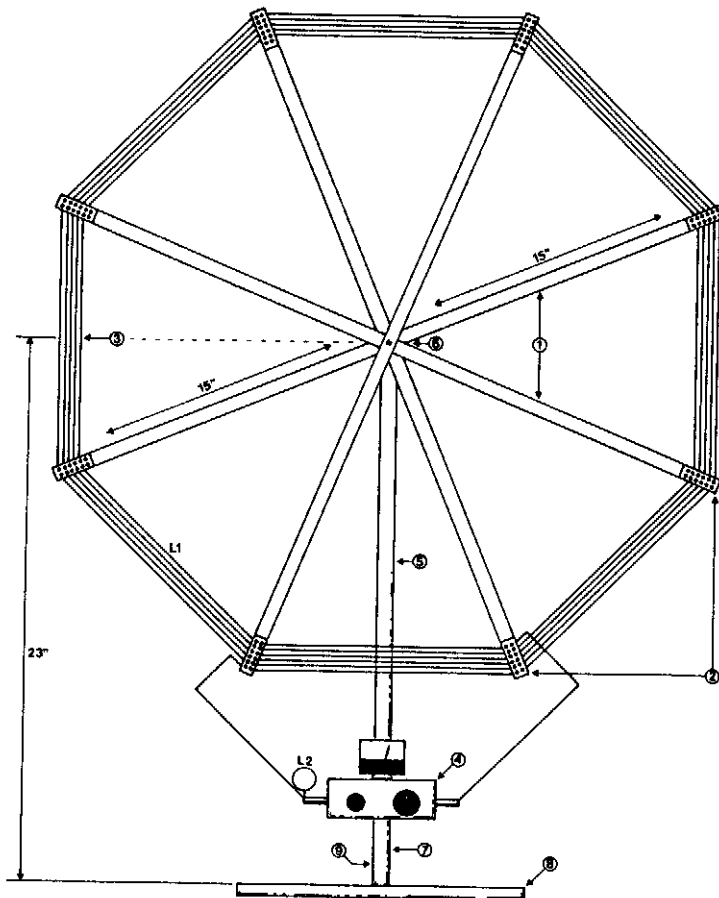
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Fig. 4-1(a)

COMPONENTS LIST

- C1 = 3 750 pF 500 V silver-mica capacitor.
- C2 = 100 pF preset capacitor (Jackson C803).
- C3 = 75 pF variable capacitor (Jackson C809), plus knob.
- C4 = 12.7 pF variable capacitor (Jackson C16), plus knob.
- C5 = 22 nF mica capacitor.
- M = 250 μ A f.s.d. 40 x 40 mm moving coil meter (Maplin LB808).
- D = HF silicon diode.
- R = 1 k Ω resistor (see text).
- L1 = 5 $\frac{1}{8}$ turns of PVC covered stranded 7/0.2 mm wire. Outside diameter: 1.2 mm, 1 kV/1.5 A rating (see text).
- L2 = 13 turns 16SWG tinned wire, 1 inch internal diameter.
- Feedline = 48 inch RG58 coaxial cable, plus plug to suit transmitter.
- Box = ABS box type MB3, 118 x 96 x 45 mm. Maplin ref. LH22.
- Terminal blocks = qty. 4 12-way 2 amp terminal block. Maplin ref. FE78.
- Spacers = qty. 3 insulated spacer type M3, 30 mm long, Maplin ref. FS40T.
- Spokes = qty. 4 8-foot lengths of $\frac{5}{8}$ x $\frac{1}{4}$ inch molded hardwood (DIY store).
- Vertical support = 23 x 0.8 x 0.8 inch wood (DIY store).
- Wood base = 12 x 8 x 0.5 inch plywood or similar.
- 2 $\frac{1}{2}$ inch steel support bracket.

LOOP ANTENNA FOR 3.5 MHz (Cont.)



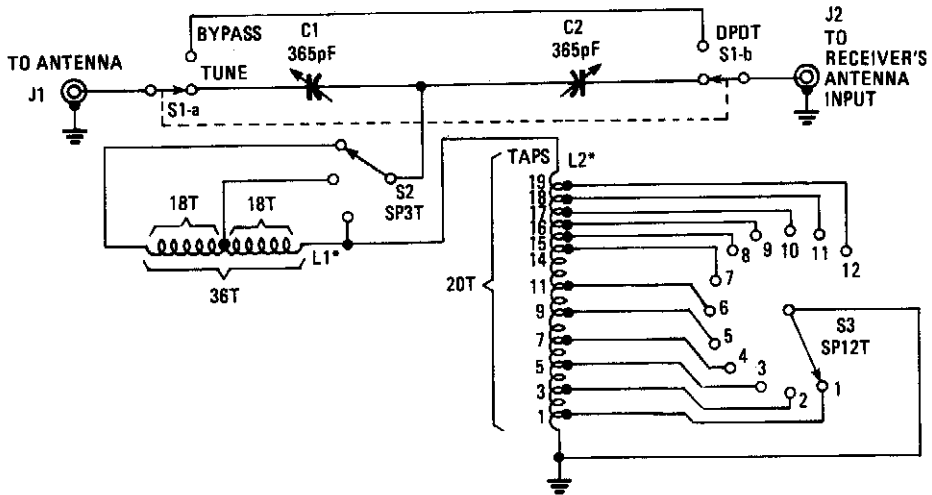
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Fig. 4-1(b)

1. 4 lengths molded hardwood 30" x 5/8" x 1/4". Varnished. 2BA holes drilled in the centre. Glued and bolted together.
 2. 8 off 6-way 2-amp polythene terminal blocks used as insulated wire spacers.
 3. 5 1/8 turns of PVC stranded wire (for specs see components list).
 4. See Fig. 3.
 5. Wood vertical support 23" x 0.8" x 0.8", wood stained.
 6. 2" x 2BA bolt.
 7. Box front vertical support, 4 1/2" x 1/2" x 3/4", wood stained.
 8. Wood base 12" x 8" x 1/2" (for similar), wood stained.
 9. 2 1/2 steel support bracket behind wood vertical support.
 10. Drilled and secured with glue and c/s wood screws.
- Note: " = inch = 2.54 cm.

Suitable for receiving or transmitting (10 W or less) on the 80-m band, this loop antenna might be helpful when an outside antenna is not possible.

1-TO 30-MHz ANTENNA TUNER



POPULAR ELECTRONICS

Fig. 4-2

L1 = 36T #18 enamel wire
on 2" PVC SCH 40 pipe.

L2 = 20T #18 enamel (as in L1)
tapped as shown C1/C2.

365-pF variable capacitor,
receiving type.

This tuner will match a random length wire antenna to a receiver or low-power transmitter (≤ 25 W) for optimum signal transfer.