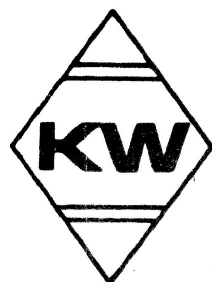


Communications

Equipment



Amateur

and Professional

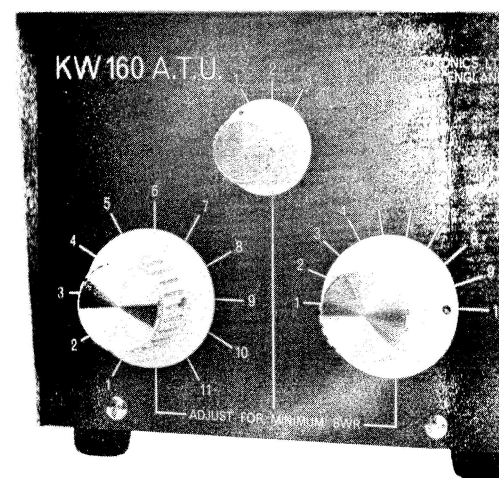
KW COMMUNICATIONS Ltd.

1 HEATH STREET.

DARTFORD. KENT. ENGLAND.

KW 160

ANTENNA TUNING UNIT.



INSTRUCTION MANUAL

KW160 ANTENNA TUNING UNIT

The KW160 is basically an "L" match circuit designed to match the 52/75 ohm output of a Transmitter (or input to a Receiver) into an Antenna System for operation on the 160 metre Band.

Under certain applications an improved "match" can be achieved on other Bands. An alternative 160 metre matching arrangement is provided for "short-wire" antennas by reversing the normal connections at the rear of the chassis.

FRONT PANEL The large knob on the left controls a ceramic switch, which selects the "taps" on the series loading inductance - L1. (Position 1 provides minimum inductance - To increase inductance turn knob in a clockwise direction. Maximum inductance is at position 11). The large knob on the right is connected by means of an insulated shaft to a variable loading capacitor C3. (Maximum capacity is at position 10). The small knob controls a three-position switch. In position 2 and 3, capacitors are added in parallel with variable loading capacitor C3. In position 1 the variable capacitor is approx. 50-1500pf. Position 2 1520-2520pf and position 3, 2520-3520pf.

REAR PANEL Connections The wing-nut is provided for a "ground" connection. It is important that a good "ground" be used with a Long-wire antenna. "Normal" 160M Long-wire Antenna Terminal - Red Terminal. "Normal" 160M co-ax input from Tx - socket adjacent to the Black Terminal.

Alternative 160M connection for "Short-wire" antenna - Black Terminal. In this case, use the co-ax socket adjacent to the Red Terminal, for the input from the Tx. When a half wave dipole for 160 metres is employed, the

co-ax feeder may be connected to the co-ax socket adjacent to the Red Terminal and the other co-ax socket used for the co-ax feed from the Tx. NOTE. The Red Terminal is connected in parallel with the centre conductor of the adjacent co-ax socket and the Black Terminal is connected in parallel with the centre conductor of the adjacent co-ax socket.

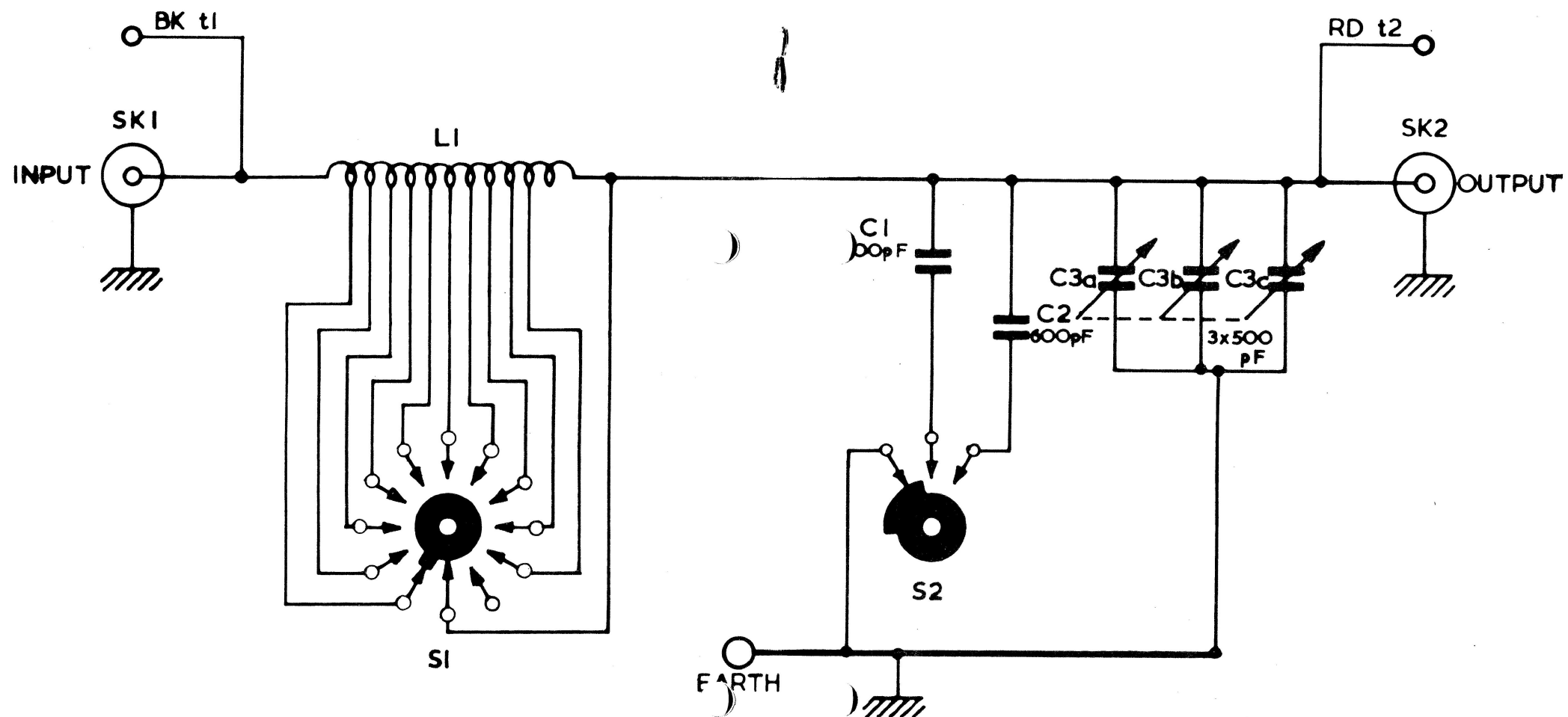
ADJUSTING THE KW160 ATU It is desirable that an SWR Indicator such as the KW101 or KW103 be used between the Tx output and the input socket of the KW160, in order that optimum antenna matching is achieved.

- 1) Set 3 Position switch to 1.
- 2) Set Loading Inductance and Capacity Controls to mid-scale (both at 6).
- 3) Switch on Tx and adjust PA Tune for maximum indication on SWR meter with switch in "Forward" position. Adjust meter sensitivity for 'full-scale' and turn SWR switch to "Reflected".
- 4) Adjust the Capacity and Inductance Controls for best SWR reading. (It may be necessary to re-adjust Tx PA for "resonance" and "Loading" to ensure maximum power from the Tx).

The antenna tuning is sometimes quite critical. When the best SWR has been obtained, "Log" the dial readings and operating frequency for future reference. This should be carried out at 3 or 4 frequencies covering the 160 metre Band.

- 5) Should an SWR Indicator not be available, adjustments can be made (approximately) by using a steady carrier of a Received signal and the Rx 'S' Meter.

POWER RATING CAUTION The Unit has been designed for approx. 200 watts PEP maximum, under average con-



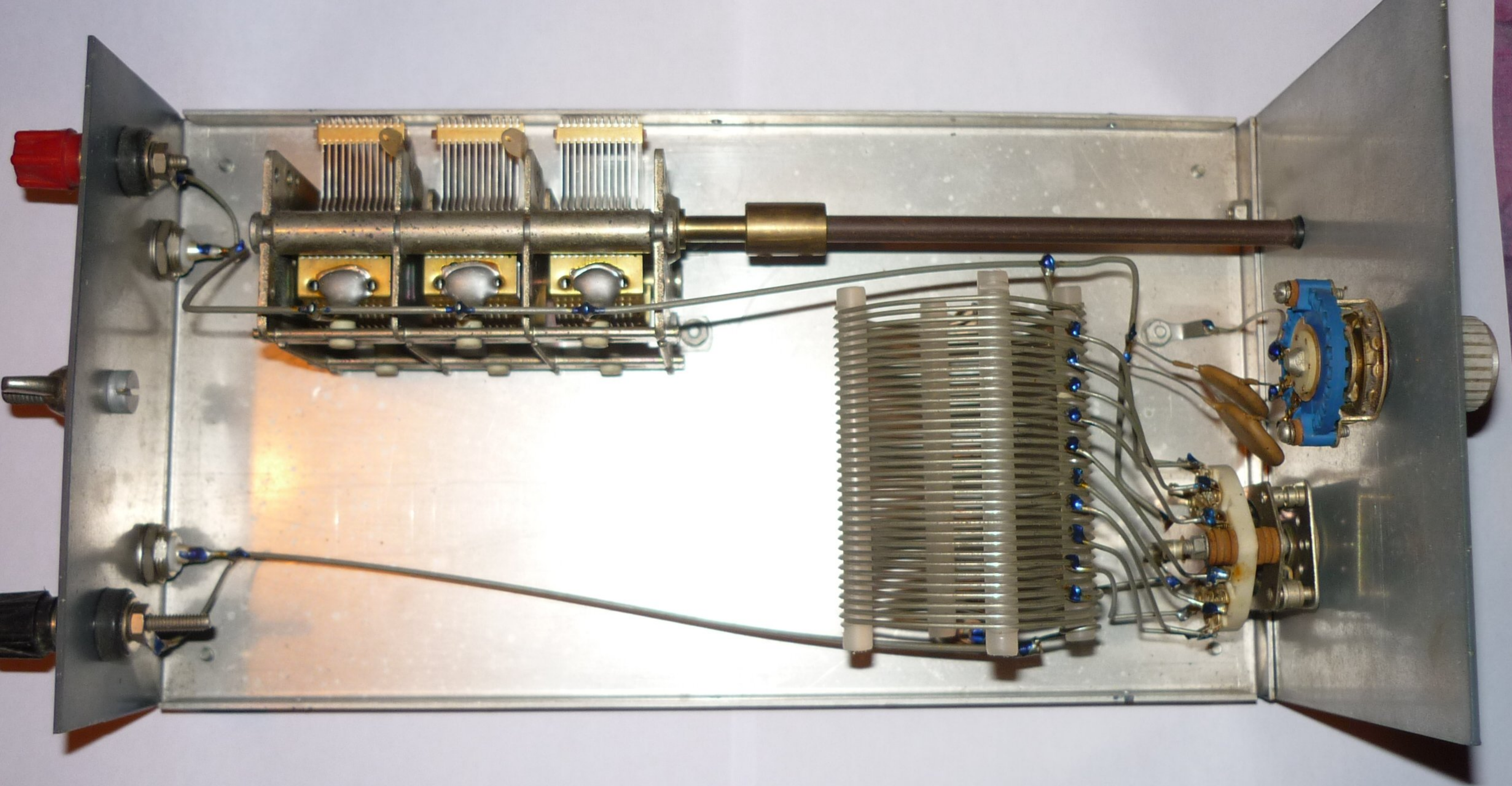
KW 160 A.T.U. Circuit Diagram.

KW160 A.T.U.

KW ELECTRONICS LTD
DARTFORD ENGLAND



ADJUST FOR MINIMUM SWR





SERIAL NO.
CT 119

