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## KW EZEE MATCH

Decca Communications KW-EZee Match antenna tuning unit.

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I Purchased the KW-EZee Match at a ham fest several years ago for about \$15 without knowing anything about it other than it appear well built and in good condition and that it may be useful for portable operations. Recently I dusted it off and took it into the field and was pleasantly surprised by what is a very flexible antenna matching unit, capable of matching a simple wire antenna or a balance feed line antenna from 80 through to 10 metres.

This matcher is design for what I need for portable operations, a simple solidly built unit with no fragile switches or meters and is suited to matching a simple wire antenna hung in a tree or similar. The KW-EZee Match is design for either a wire and ground connection or for a balanced feed line without the need for the losses introduced by the usual balun found in most modern matches. Photo#2 shows the antenna connections at the rear of the unit, note the centre connector of the pairs are linked to the ground terminal, this configuration is for unbalanced feeds such a simple wire and ground antenna or any coax feed, if the matcher was to be used for balanced ladder line for example the links would need to be removed.

### Specifications

Frequency Range : 3.5 MHz – 30 MHz  
Resistive Loads: 15 ohms – 5000 ohms  
Maximum Power: 400 Watts SSB, 100 Watts AM.

Antenna connections at the rear of the unit are two pairs of terminals each capable of accepting banana-plugs, spade-tag or simply screw down on to a wire. The black pair of terminals are primarily used for lower bands typically 80, 30 and 40 metres and the red pair of terminals are primarily used for upper bands typically 20 through to 10 metres with a centre black terminal below for the earth connections.

### Operational

Tuning technique

- 1/ Reduce the transmitter power to the lowest practical value.
- 2/ Adjust 'C Shunt ' (Left knob) to produce a dip in the SWR
- 3/ Adjust 'C Source' (Right knob) to continue to lower the SWR.
- 4/ Retune to step 2/ to continue to reduce the SWR. A perfect 1:1 match should be achievable on all HF bands subject to antenna and feed line dimensions.

Issues relating to practical antenna lengths for simple wire antenna are discussed in [Long wire antenna for portable operations](#).

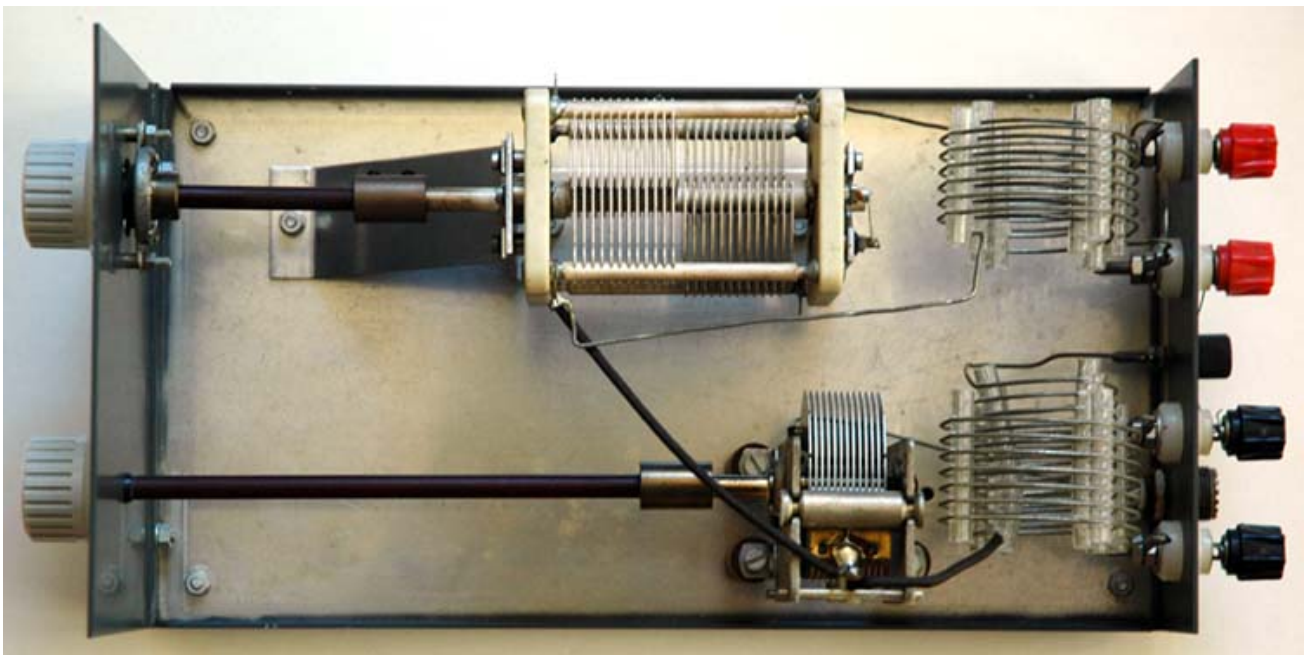


**Photo #1** Front panel controls. Left knob is the Shunt capacitor adjustment and the Right knob is the Source Load capacitor adjustment.

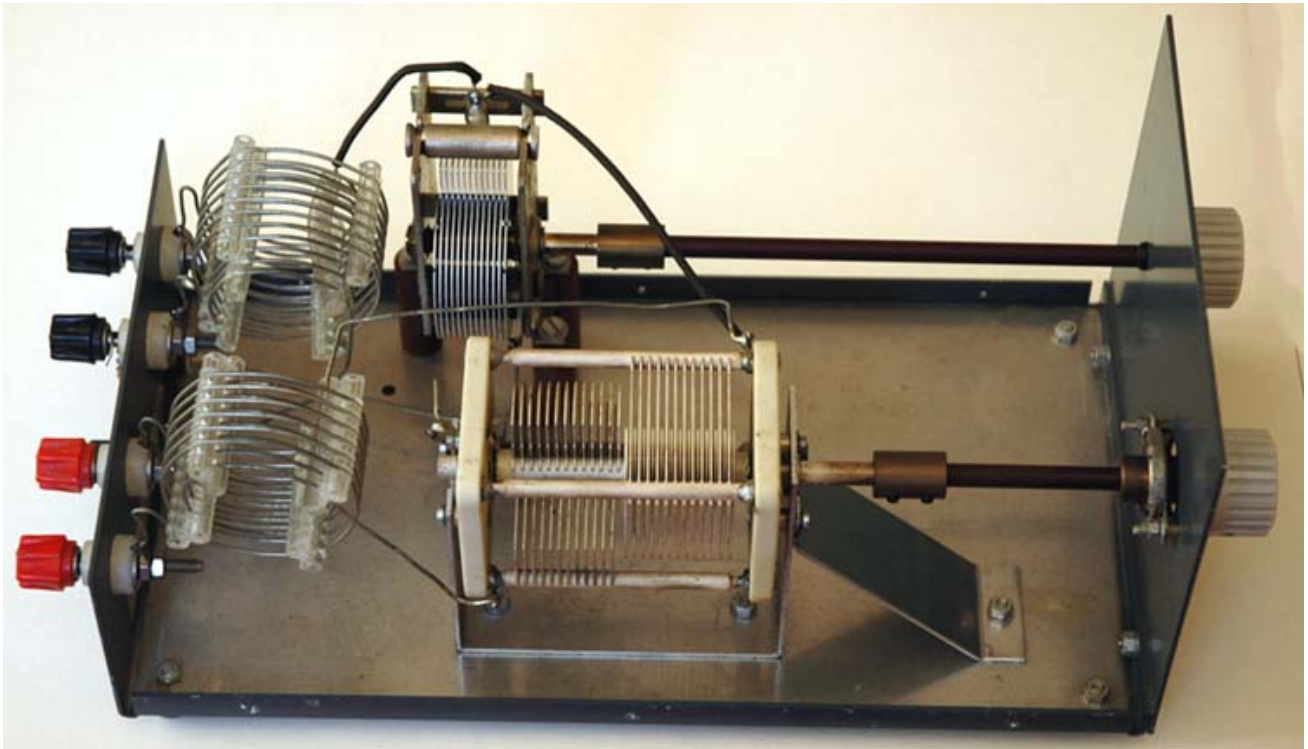


**Photo #2** Antenna connections at the rear of the unit are two pairs of terminals each capable of accepting banana-plugs, spade-tag or simply screw down on to a wire.

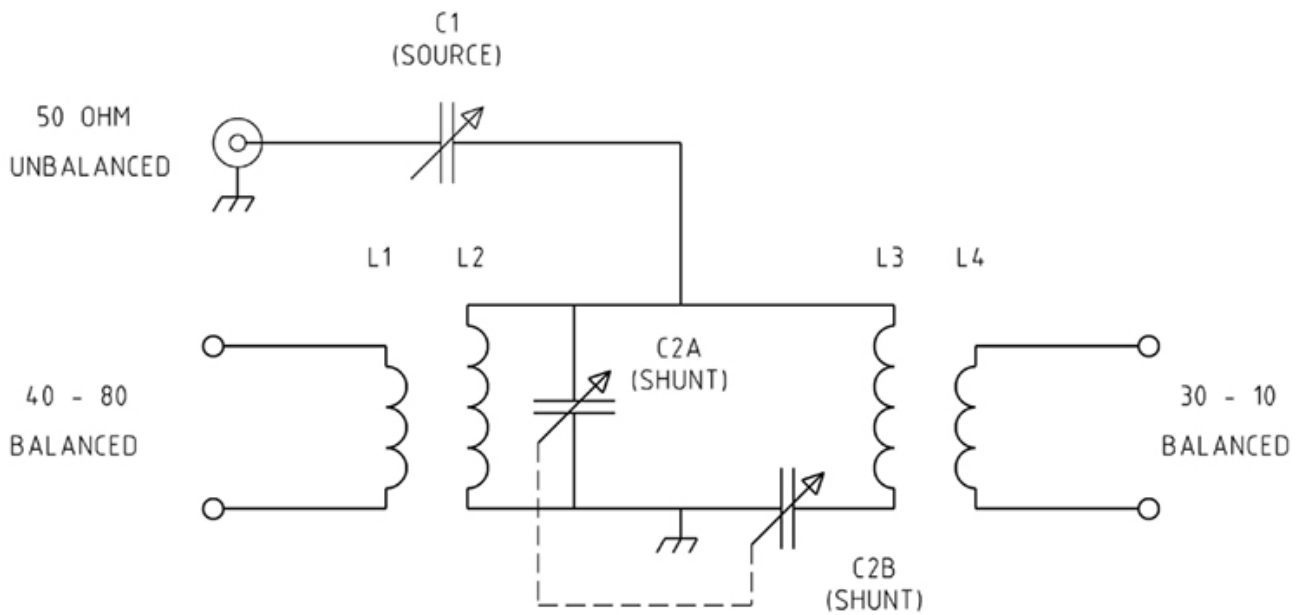
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**Photo #3** Top internal view of the KW-EZee Match unit



**Photo #4** Top angled internal view of the KW-EZee Match unit.



Schematic of the KW-EZee Match unit.

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|---|--|
| <p><b>L1</b> 7 Turns 52mm diameter of 1.2mm<sup>2</sup> tinned copper over the hot end of L3</p> <p><b>L2</b> 10 Turns 38mm diameter of 1.2mm<sup>2</sup> tinned copper located within L1</p> <p><b>L3</b> 7 Turns 38mm diameter of 1.2mm<sup>2</sup> tinned copper located within L4</p> | <p><b>L4</b> 6 Turns 52mm diameter of 1.2mm<sup>2</sup> tinned copper over the hot end of L3</p> <p><b>C1</b> 365pf single gang variable capacitors. Plate spacing approximately 0.25mm</p> <p><b>C2</b> Double opposing gang 250pf variable capacitors (C2A max capacitance when C2B is at minimum) Plate spacing approximately 0.5mm</p> |
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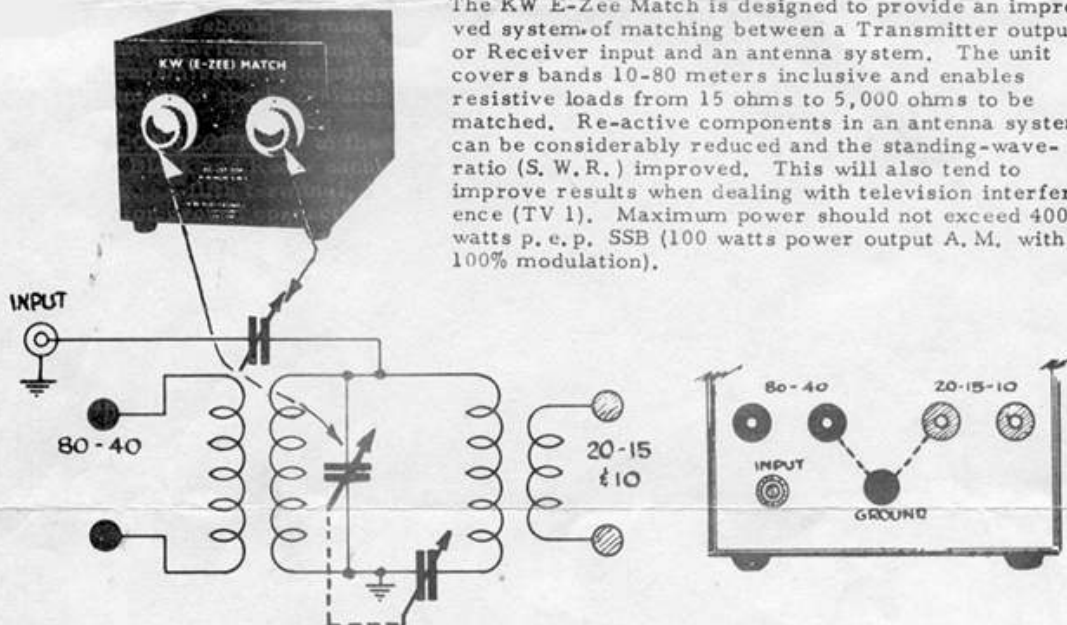


# Decca Communications Limited

## SPECIFICATIONS AND INSTRUCTIONS

### KW E-ZEE MATCH ANTENNA TUNING UNIT

471-600-021



The KW E-Zee Match is designed to provide an improved system of matching between a Transmitter output or Receiver input and an antenna system. The unit covers bands 10-80 meters inclusive and enables resistive loads from 15 ohms to 5,000 ohms to be matched. Re-active components in an antenna system can be considerably reduced and the standing-wave-ratio (S. W. R.) improved. This will also tend to improve results when dealing with television interference (TV I). Maximum power should not exceed 400 watts p. e. p. SSB (100 watts power output A. M. with 100% modulation).

**TRANSMITTER OPERATION** Connect the low impedance output of the transmitter to the RF input of a standing-wave-ratio bridge (e. g. the KW Match) and the RF "output" of the SWR Bridge to the RF input co-axial socket on the KW E-Z Match. Connect the antenna to the appropriate terminals at the rear of the E-Z Match. (See instructions below). With the SWR Bridge switched to "reflected" power, tune the two controls at the front of the E-Z Match for minimum SWR indication. NOTE: It may be necessary to re-adjust the sensitivity of the SWR indicator, with the switch in the "forward" power position, to obtain optimum SWR indication. When the correct match has been found, log the dial reading of E-Z Match for easy reference after a frequency change.

**WARNING** During the tuning process, always ensure that the P. A. stage is not pulled off-resonance. Slight re-adjustment to maintain resonance may be necessary.

**RECEIVER OPERATION** The same principals apply when using the E-Z Match with a Receiver only. Adjustment should be made for optimum signal strength. An SWR Indicator is not required. From experience, it may be found, that a quick approximate method of tuning the E-Z Match for transmission is to adjust on a received signal at the required transmission frequency. Final adjustment of the E-Z Match should be done using the SWR Indicator method.

**ANTENNA CONNECTIONS** to the E-Z Match. At the rear of the unit are two pairs of terminals - Black and Red - each will accept a 'Banana' plug or screw down on to wire or to a 'spade' tag. A fifth terminal, black in colour, situated below the two pairs of terminals, is provided for ground connection and for a connection link to one of the terminal pairs when using a single-wire-feed-antenna. The BLACK pair of terminals are for use on 40 and 80 meters. The RED pair of terminals are for use on 10, 15, and 20 meters. A pair of terminals should always be used when the antenna is fed with co-axial cable, twin cable, or open wire feeder. For single-wire-feed use only one terminal of the pair (Black 40/80 - Red 10/15/20) for the antenna connection and link the other terminal of the pair to the ground terminal. Try reversing the connections to antenna and ground terminal pairs for best SWR. ALWAYS connect a ground wire to the E-Z Match. It is desirable that this be made as short as possible to a ground-post and not to the ground of the domestic electricity supply.

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