

## KW 107 Supermatch

The ENJOT Supermatch is a combination of the following IV products, all in one cabinet:

1. IV E-2 Match ATM
2. ENJOT SBR/Watts Meter
3. IV Antenna Switch
4. IV Dummy Load

The cabinet is the same as used for the ER3000A/B AC Power Supply and exactly matches the ER2000A/B/V/E, IV Yeaps, ER00L, ER1000, ER202, etc. The ENJOT Supermatch enables the output of a transmitter to be matched to an antenna system and provides additional protection against VFT, over the bands 10-80 meters. Standing-wave-ratio on the antenna can be compared with the purely resistive dummy load or the dummy load can be used to load a transmitter before the antenna is connected for matching by means of the E-2 Match circuitry. The Wattmeter is calibrated in two ranges, 0-100 and 0-1000 watts. The Selector switch provides output from the transmitter, through the E-2 Match, to two different antennas. In addition to the coaxial sockets at the rear of the Unit, there are two pairs of sockets for use with balanced feeders; these sockets are not switched. A popular arrangement for the ENJOT Supermatch is the permanent connection of the IV Trap Doubler for 80 and 40 meters operation and a Tri-band Beam for 10, 15 and 20 meters. The correct antenna can be switched to the appropriate band by means of the selector switch. For an easy check on band conditions, the antenna can be switched direct to the Receiver, without the necessity of re-tuning the E-2 Match, by using the "Direct" positions of the antenna selector switch. These positions can be used for transmission, if required.

**FRONT PANEL.** The controls on the front panel are **WEATHER SENSITIVITY** for setting the SBR Meter to full scale when meter switch is in PWD. **WIND-STOP-REVERSE** for switching the meter to SBR Forward voltage. **SBR Reverse voltage, WATTMETER** high power and **WATT-METER** low power. The meter is 3-1/2" square, directly calibrated in Standing-Wave-Ratio and Watts with two ranges 0-100 watts and 0-1000 watts. The two Tuning Controls used for tuning the E-2 Match are equipped with slow motion drives. The main switch is a six way three pole heavy duty ceramic switch, with the following positions - Dummy load, ANT. A DIRECT, ANT. A 80/40, ANT. A 20/15/10, ANT. B 20/15/10, ANT. B DIRECT.

**REAR PANEL.** All coaxial sockets are SO239 (HEP) type and require F2259 matching connectors (not supplied). Mounted on the rear panel are three SO239 sockets for the antenna connections including one for the input socket to which the output of the transmitter is connected. A spare hole is provided for an extra socket, if required. Two pairs of terminals are also provided for use with balanced feeders.

**FREQUENT RANGE.** Amateur bands are covered in 2 ranges, 30-40 meters and 20, 15 and 10 meters. The internal and external connections of the ENJOT must be arranged so that the appropriate antenna is connected to the antenna tuner proper output terminals. Other possible arrangements for using more than two antenna systems can be accommodated by simple modification to the circuits provided.

**GENERAL CHARACTERISTICS.** The ENJOT Supermatch will match an antenna feed impedance of approx. 30-2500 ohms on 10-15 and 20 meters and 30-1000 ohms on 40 and 80 meters. Power restrictions on the unit apply mainly to the E-2 Match ATM. This part of the unit is suitable for transmitters with 1KW ERP

USE OF BALANCED FEED LINES If 400-600 ohm balanced feeders are used for both 80/160M antennas, and the 20/15/10 metre antennas, appropriate knife switches (DST) must be used to disconnect the unused feeders. DO NOT OPERATE THE K107 SUPERMATCH WITH CONNECTIONS MADE TO BOTH OUTPUTS. Near-ground feeders are used on for one antenna and balanced feeders are also used ON THE SAME BANDS, a DST knife switch must be provided for the that the appropriate terminal can be grounded for the coaxial line. The knife switch must be mounted ON THE coaxial line. The knife switch must be mounted ON THE to the SUPERMATCH so that the ground lead is SHORT.

Should an antenna be employed, using 75 ohm twin feeder, we recommend a Balun (such as the 5W Balun 75/75 ohm) be used and mounted approximately behind the K107 SUPERMATCH. Connection by about 6-inches<sup>2</sup> coax cable between input to Balun and SO239 sockets A or B at rear of K107. The twin feeder is terminated at the Balun "Antenna" connections.

USE OF MORE THAN TWO ANTENNAE Up to three additional antennas can be switched on the 20/15/10M or 40/50M outlets provided on the K107 SUPERMATCH by employing a KW ANTENNA SWITCH.

NOTE: When using co-axial cables, one of the four of switches must be connected to the antenna.

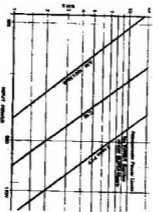
#### INSTRUCTIONS for removing cabinet

Carefully remove the unit from the cabinet as follows:

1. Remove two front feet.
2. Remove two screws at the bottom rear of the cabinet.
3. Remove the nickel-plated screw on the top front of the cabinet (take care not to damage the cabinet). Use the correct size screw driver which is not blunted to remove this screw.
4. Slowly and carefully slide the unit out of the front of the cabinet taking care not to scratch the painted cast aluminum ring.
5. Set the cabinet aside and away from the work area so it will not get scratched.

*These instructions do not apply!*

end at the other end of the scale, 50 watts ERP minimum for full scale indication. The Selector Switch wipers are ceramic and are operated well within their ratings when the other indications are observed. It is recommended that reduced power be used when adjusting the E-2 Match, until a good SWR is achieved.



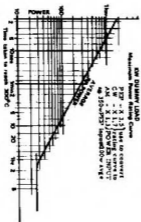
#### OPERATING INSTRUCTIONS

1. Turn Selector Switch to "LOAD".
2. Turn Meter Switch to High Power or Low Power depending on the transmit power of your equipment.
3. Tune up transmitter into the LOAD observing instructions described in the paragraph on the DUMMY LOAD.
4. Adjust Transmitter to about 15 watts output and go back to maximum SWR.
5. Turn Selector Switch to desired antenna using E-2 Match - ANT. A 80/10 - ANT. K 20/15/10 or ANT. B 20/15/10.
6. Tune the receiver to a signal near the operating frequency.
7. Adjust the two Tuning Controls for maximum receiving signal.
8. Turn meter Switch to SWR/ERP.
9. Turn on Transmitter and adjust SWR sensitivity control to give full scale on meter.
10. Turn Meter Switch to SWR ANT.
11. Carefully adjust tuning controls to give minimum SWR (in most cases an SWR of 1.1 should be possible).
12. Record the position of the tuning controls for easy reference.

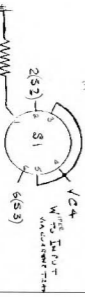
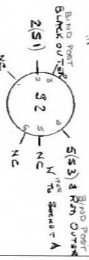
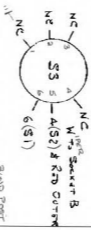
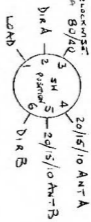
NOTE: 1. When first tuning the SUBMATCH on a new frequency or new antenna, ALWAYS adjust the transmitter into the Dummy Load as a first step. This ensures that the transmitter is tuned up/loaded correctly.

2. If the antenna SWR is high, and it is not possible to achieve a 1:1 SWR through the tuner, lengthening or shortening the feed line may make a match possible.

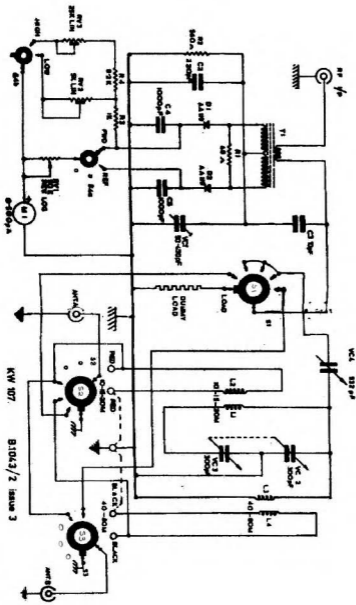
**HEAT LOAD** - The Power limitation of the dummy load is in the temperature rise at the "skin" of the resistor which must not exceed 300 C. This means that HW can be applied for 5 seconds max. Use 100 watts raise the temperature to the limit in about 6 minutes, and 50 watts can be run for 20 minutes.



ON UNIT RT VEA FULLY MESHED RT 10  
 LH VES  
 241 SWAGED CLOCKWISE  
 ANTRA 80/40



SOA  
 LOAD  
 REAR OF UNIT  
 KW107 AT 5G



KW 107

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