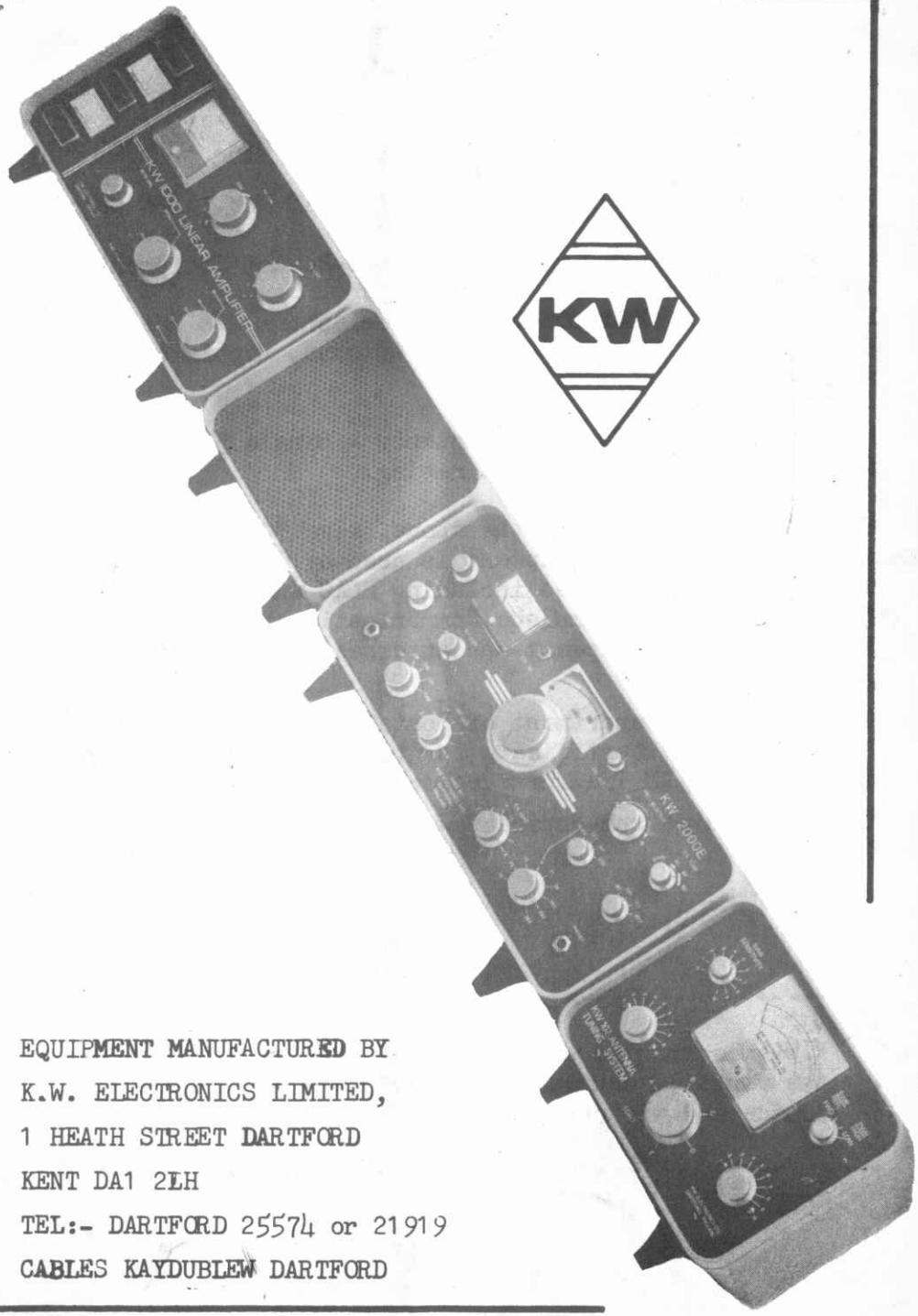
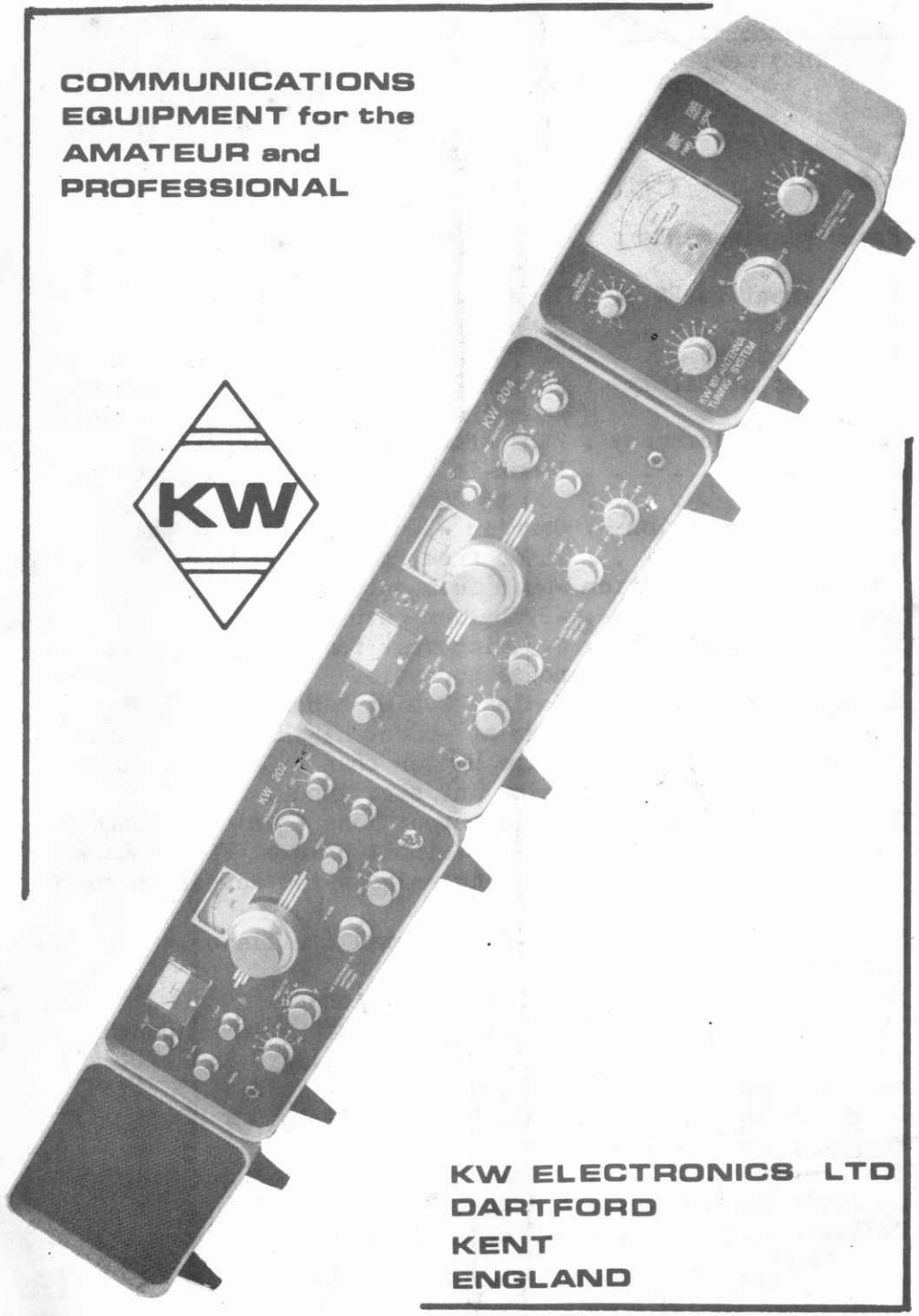



KW

EQUIPMENT MANUFACTURED BY
K.W. ELECTRONICS LIMITED,
1 HEATH STREET DARTFORD
KENT DA1 2LH
TEL:- DARTFORD 25574 or 21919
CABLES KAYDUBLEW DARTFORD

**COMMUNICATIONS EQUIPMENT for the AMATEUR and PROFESSIONAL**




KW

**KW ELECTRONICS LTD**
**DARTFORD**
**KENT**
**ENGLAND**

Specification KW2000E

| | |
|---|---|
| Frequency range | 1.8-2.0,3.5-4.0,7.0-7.5,14.0-14.5, 21.0-21.5,28.0-30.0MHz. Plus on receive only: 2.0-2.3,15.0-15.5MHz (for WWV, RKM etc). |
| Mode | SSB (either sideband selectable) or CW. |
| Power requirements | 105-120 or 210-240v AC 45-65Hz. Mobile 12.6v DC Nominal. |
| Power input to PA | 180W PEP on SSB. 150W on CW. |
| Audio input | High impedance microphone. |
| Ant. impedance | 52/75ohms with not more than 2:1 swr. |
| Frequency stability | Within 100Hz after 30 min. warm-up. Less than 100Hz with ±10% line volts. |
| Calibration accuracy | 2KHz after midband calibration. |
| Keying | Break-in CW with sidetone provided. |
| AF response | 300 to 2600Hz ±6 db. |
| Carrier suppression | Carrier -50db from Peak Output. |
| Unwanted sideband | -45db from Peak Output. |
| 2nd harmonic radiation | -40db from output signal. |
| 3rd order distortion | -27db from output signal. |
| Rx sensitivity | 0.5 microvolt for 10-db signal-plus-noise to ratio. |
| Rx selectivity | Nominal 2.4KHz bandwith at -6db, 5KHz at -60db. 455KHz Mech. Filter. |
| Rx spurious responses | Image better than -50db. All others below 1uV sig. input. |
| A.G.C. | Audio output less than 6db change for 1uV-10mV input change. Fast attack and slow release AGC action on voice and CW. |
| Calibrator | 100-KHz crystal oscillator. |
| IRT/ITT/IRTT | ± 6 KHz. |
| Receiver output | 1.0 watt. 3-4 ohms |

| Dimensions | Height | Width | Depth |
|---|---|---|---|
| Transceiver | 15.8(6¼") | 32.2(13⅞") | 33.7(13¼") |
| AC Power Supply | 15.8(6¼") | 18.7( 7⅜") | 33 (13") |
| DC Power Supply | 13.3(5¼") | 11.1( 4⅜") | 20.3( 8") |

| Weight | |
|---|---|
| Transceiver | 7 kg (15½lb) |
| AC Power Supply | 8.7 kg (19 lb) |
| DC Power Supply | 3.5 kg ( 6½lb) |

# KW 2000E

## Single Sideband Transceiver


The KW2000E transceiver incorporates a number of improvements over previous models the most important being, improved cross modulation performance, a 500 KHz VFO with greater stability and full amateur band coverage from 1.8 MHz to 30 MHz as standard.

Other features include:-
Top Band with switch to legal limit. Reliable 6146's in PA. Break in CW. Complete 10M coverage 28.0MHz to 30.0MHz. New RF stage and 1st RX Mixer. Smooth 2 speed slow motion drive to VFO. 6 Band operation. Lift up inspection lid. Vox built in. USB or LSB on any band. ALC provides high "Talk power". Matching AC power supply with built in speaker. Sidetone monitor for CW. Crystal controlled receiver 1st mixer. 100 KHz crystal calibrator. Nominal 2.4 KHz mechanical filter provides optimum bandwidth for SSB transmission and reception. No external antenna switching required. WWV/RKM/JYE signal standards on 15 MHz. Independant transmit and receive frequencies or true transceive operation. 180 watts PEP input provides effective mobile power whilst not over taxing the car battery. Lightweight, attractive, robust, efficient. Only best quality components are used resulting in utmost reliability. Easy to install in a vehicle for mobile operation. 12 Volt DC Transistor power supply available. K.W. spares and after sales service second to none.

# KW SEPARATES

## KW 204 Transmitter

LSB, USB, CW and AM
Built-in Power Supplies
Silky Smooth Tuning
Aux VOX available
ALC
180 watts PEP

SPECIFICATION KW204

Completely covers all amateur bands from 160 to 10 Metres in 500 KHz segments.

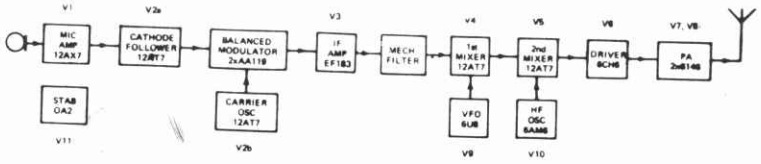
160 Metres - 1.8 - 2.3 MHz
80 Metres - 3.5 - 4.0
40 Metres - 7.0 - 7.5
20 Metres - 14.0 - 14.5 MHz
15 Metres - 21.0 - 21.5
10 Metres - 28.0 - 28.5
10 Metres - 28.5 - 29.0 MHz
10 Metres - 29.0 - 29.5
10 Metres - 29.5 - 30.0

Size: 13.9"W x 13.3D x 6.3H

Both Units can be used on SSB, CW or AM.

KW204 TRANSMITTER

| | |
|---|---|
| Power Input: | SSB - 180 watts PEP |
| | CW - 150 watts |
| | AM - 75 watts |
| Power Output: | SSB - 100 watts nominal |
| Output Impedance: | 52/75 ohms with SWR 2:1 |
| Mic. Input | High Impedance |
| Freq. Response: | 300-2500 Hz at 6 dB |
| Carrier Suppression: | 50 dB |
| Unwanted Sideband: | 45 dB |
| Third Order Distortion: | -30 dB |
| Power Requirement: | 117 or 234v ± 5%. 45-65 Hz |
| Power Consumption: | Approx. 320 watts on transmit |
| Weight: | 27 pounds |




# KW 204


## Single Sideband Transmitter

FEATURES

* PANEL METER INDICATES PA CATHODE CURRENT OR RF OUTPUT VOLTS
* MECHANICAL FILTER FOR SSB
* BUILT IN ANTENNA SWITCHING
* SELECTABLE LOWER OR UPPER SIDEBAND
* TONE GENERATOR FOR CW MONITORING
* OPTIONAL PLUG IN VOX UNIT

The KW204 Transmitter is the proud successor of the KW Vespa. It uses much of the proven circuitry of the KW2000 series of transceivers. The output tubes are a pair of the respected, highly reliable 6146's. Complete shielding and isolation of circuits provides a maximum of TVI protection. True carrier insertion (not unbalancing a mixer) is used for tuning. CW and AM. The KW204 is prewired for the optional KW auxiliary VOX unit. Optimum loading of the final stage can be achieved by using the RF output voltmeter. For class B linear amplifiers, proper loading corresponds to maximum output into a matching load. The ALC circuit provides protection against excessive splatter even when crowding the mic as often happens when chasing DX.

For details of KW202 Receiver please turn over page.

# KW 202

## Single Sideband Am/Cw Receiver

FEATURES

* COMPLETELY COVERS ALL AMATEUR BANDS 160 METRES TO 10 METRES IN 500 KHz SEGMENTS
* TWO SPEED SILKY VFO TUNING
* MECHANICAL FILTER
* PLUG IN 100 KHz CRYSTAL CALIBRATOR
* BUILT-IN Q-MULTIPLIER WITH NOTCH OR PEAK FACILITY
* LSB, USB, CW and AM
* SIGNAL INPUT ATTENUATOR for optimum "cross-mod" reduction


* SEPARATE SPEAKER AVAILABLE in matching case (see front cover)

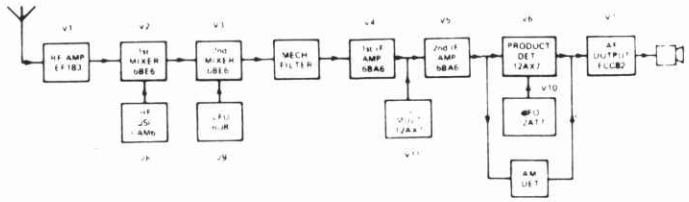
# KW SEPARATES

## KW 202 Receiver

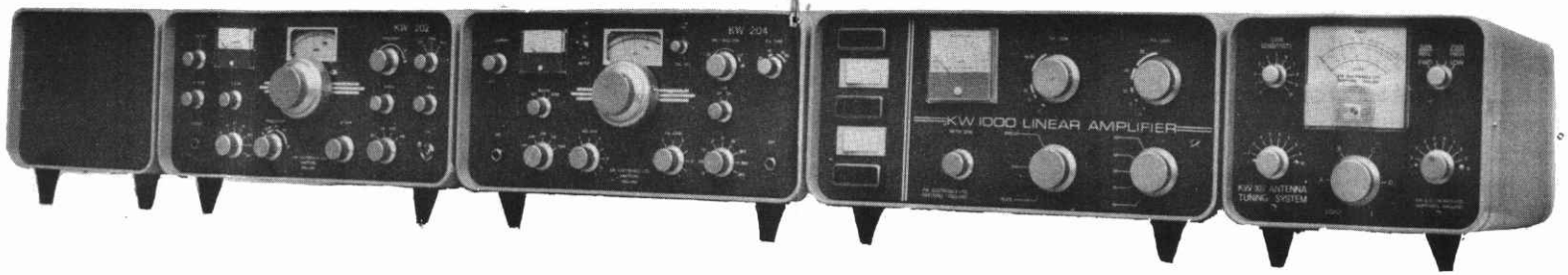
The KW202 Receiver replaces the famous KW201 and is a perfect match for the KW204 Transmitter. A built in Q multiplier provides additional selectivity to isolate a CW signal, or a deep notch to eliminate QRM. The 100 KHz calibrator provides strong harmonics right through 30 MHz. An RF attenuator in the antenna line helps eliminate front end overload in crowded urban areas. Complete coverage of all the HF amateur band plus silky smooth tuning makes operating a pleasure even during contest work. Reception of the occasional AM station is no longer difficult even if he is drifting. Merely flip over to AM and tune him in like a broadcast station. Certain commercial AM short-wave stations can be received outside the amateur bands with the KW202.

KW202 RECEIVER

| | |
|---|---|
| Sensitivity: | 0.5 uV for 10 dB Signal to Noise |
| Selectivity: | 2.4 KHz at 6 dB<br>5.0 KHz at 60 dB<br>Q Multiplier - 200 Hz at 10 dB |
| Spurious Response: | Less than 1 uV equivalent antenna signal |
| Audio Output: | Loudspeaker - 3.2 ohms<br>Headphones - 500 ohms<br>Power - 1.5 watts |
| Input Impedance: | 52/75 ohms |
| Weight: | 17 pounds |



ILLUSTRATED BELOW IS AN EXAMPLE OF A KW FIXED AMATEUR STATION, USING THE KW 'SEPARATES'
THE LOUDSPEAKER THE KW202, KW204, THE KW1000 L/A AND THE KW107 ATU ALL IN MATCHING 'G' LINE CABINETS




Dear Customer,

We have great pleasure in presenting our new Catalogue and we hope that you will find within its pages something of interest to you.

We at KW have a file of complimentary letters and comments written on Guarantee Cards which are returned to us.

For those who are particularly interested in "Separates" or in the purchase of Receiver or Transmitter, we quote a number of unsolicited testimonials. We hear a lot of complimentary remarks about our equipment "On the Air". We are proud of these comments and make every endeavour to ensure every customer is satisfied.

R.G. Shears G8KW
Managing Director

KW202 RECEIVER

I am delighted with performance - Congratulations on a first class job.
S.W.C. B'ham.

Very good all round performance. Very pleased with KW 202.
R.F. Willenhall, Staffs.

Excellent value for money - ordering a second.
C.P.W. Leicester.

Very pleased with Rx and with the way you conduct your business.
G4AYD.

An entirely satisfactory Rx and works excellently with Matching KW204 Tx. I am delighted.
G3GIY.

KW204 TRANSMITTER

I am very pleased with the Transmitter - Up to the usual KW standard.
G5UH.

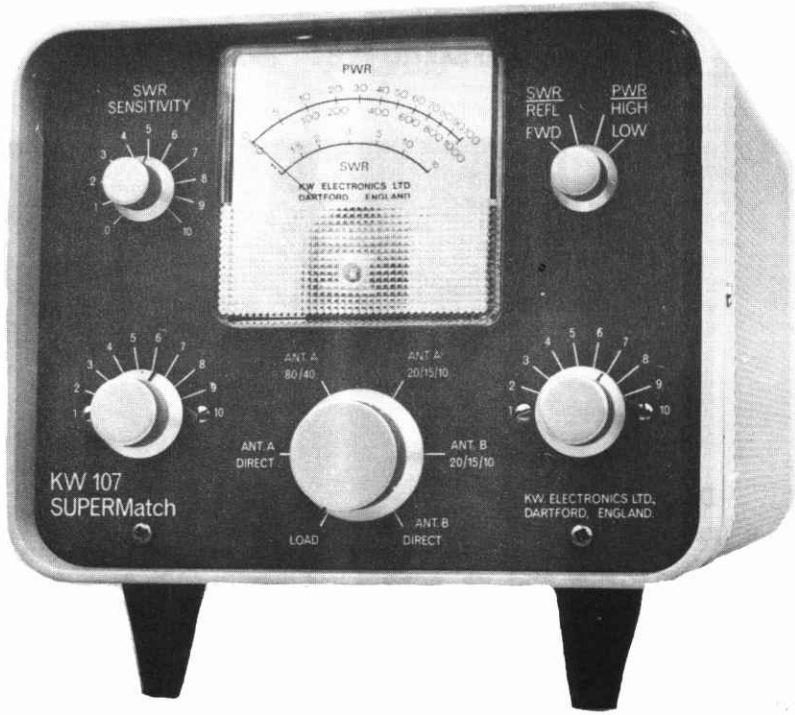
Well constructed and designed equipment.
E.D.F. Durham City.

Very pleased with Tx - FB Reports.
G4AYD.

# KW E-Z MATCH

Most modern day transceivers need a proper termination of 50ohms in order to function satisfactorily. The KW E-Z MATCH is designed to transform a high impedance or mismatched transmission line to 50ohms resistive. The circuitry and components used allow this to be done with a minimum loss. Modern transmitters and transceivers will meet their spurious and intermod specifications only if worked into a proper load. A Low Pass Filter is almost useless for harmonic reduction if it is not terminated in a proper impedance. The KW E-Z Match will match 30-2500 ohms on 20, 15 and 10 metres and 30-1000ohms on 80 and 40 metres. Impedances outside these limits can also be matched depending on the magnitude of the reactive component. Transmitters with power inputs as high as 1 KW PEP can be used if the natural SWR is less than 2:1 on a 50ohm line. For high impedance and end fed antennas the safe maximum transmitter input power is 350 watts PEP. The limitation is basically one of peak RF voltage and is dependent on the reactive component of the load. Tuning is simple and straightforward. For best results the transmitter should first be tuned into a dummy load. Preliminary tuning of the KW E-Z Match is done by adjusting the controls for maximum signal on receive. Then using the lowest power (for minimum interference) final adjustments are made to bring the SWR to as near unity as possible. The dial readings of the KW E-Z Match are then logged for easy reference. Connections are provided for balanced feeders to the antenna and a UHF coaxial connector (SO239) for input. There is also provision for mounting an additional coax connector when the antenna feedline is coaxial.


# KW 107 Supermatch




The KW SUPERMATCH combines the features of the famous KW E-Z Match, the KW Antenna Switch, the KW Dummy Load and the KW103 SWR/PWR Meter. Plug-in binding post connectors are provided for balanced feeders, as well as 2-SO 239 connectors for coaxial feed lines. Transmitters with power inputs as high as 1KW PEP can be used if the natural SWR is less than 1.8:1 (50 ohms line). For high impedance, end fed antennas, the power input should be limited to 350 watts PEP. The proven KW E-Z Match circuitry is used in the SUPERMATCH and will efficiently match complex antenna fed impedance from approximately 30 to 2500 ohms on 20, 15 and 10 metres, and 30 to 1000 ohms on 40 and 80 metres. A small adjustment in feeder length will usually allow a match to be made. The transmitter is just tuned into the dummy load. Preliminary settings of the SUPERMATCH Controls are made by tuning a received signal for maximum. Then, using a low transmitter power and maximum sensitivity on the built-in SWR meter, the SUPERMATCH Controls are adjusted for minium SWR.

# KW 1000 Linear Amplifier

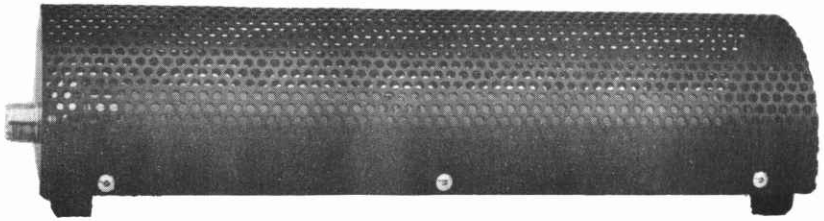
The KW1000 Linear Amplifier is designed to be driven by the KW2000E or similar medium powered SSB Transceivers or Transmitters. Good Linear operation is achieved for Single Sideband or CW with useful power gain.

The Unit employs a pair of T160L tubes in grounded-grid with Pi-input matching circuits for each band. The driving power required is approximately 40 watts PEP. The HT supply is built-in and uses semi-conductors producing 2.4 KV which can run the PA at over 1000 watts on CW and up to 1200 watts PEP SSB. The Amplifier operates on the 10, 15, 20, 40 and 80 metre bands. The antenna output is low impedance from a Pi-section filter and the antenna is connected automatically to the exciter when the Linear Amplifier is switched off.

The meter measures PA plate current,high voltage and SWR. The PA stage is completely screened (double screened with cabinet) and a small fan is used for tube cooling. Front panel controls are clearly marked and three chromium plated and coloured indicator lamps are marked "MAINS ON", "FORWARD" and "REFLECTED" (SWR Power).

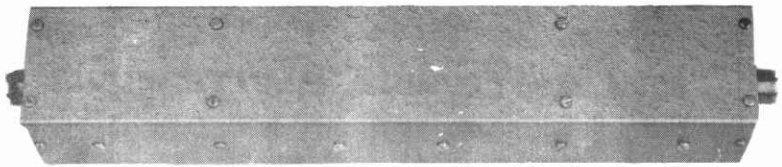
Tubes 2 x T160L: Output Socket SO239: Line Voltage 105-120v or 210-240v AC 45-65 Hz: Case 12⅛" deep, 6" high, 13½" wide: Weight approx. 40 lbs.


# KW DUMMY LOAD



The KW Dummy Load is air convection cooled and has been designed as a purely resistive load up to 30MHz. The power dissipation is limited by the skin temperature of the resistor which must not exceed 300°C under any conditions. When dissipating 50 watts in the load this temperature is reached in about 20 minutes, for 100 watts about 6 minutes, for 1 KW about 5 seconds. These powers are about equivalent to transmitter input powers of 200W PEP, 400W PEP and 4 KW PEP. When ordering specify 52 or 75 ohm impedance.

# KW LOW PASS FILTER

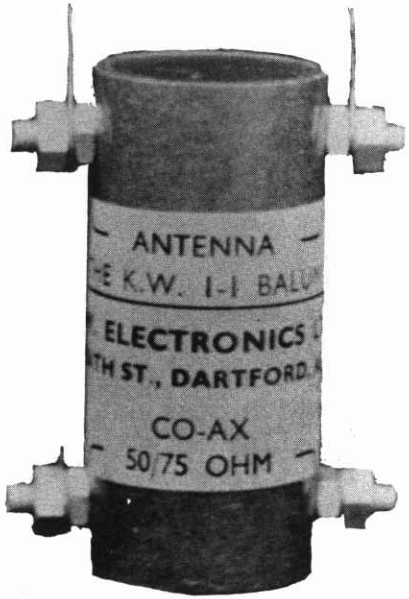


The KW Low Pass Filter is designed to give in excess of 80 dB annenuation on all the VFH TV channels when properly terminated. Rated at 1 KW PEP. To be effective, a Low Pass Filter must work into its design impedance (52 ohms) and should be used with antennas with an SWR of less than 1.5:1. For higher SWR's an antenna tuner such as the KW107 or KW E-Z Match should be inserted between the Low Pass Filter and the transmission line. The KW Low Pass Filter will reduce TVI caused by harmonics radiated down the transmission line.

Important. When ordering, specify the lowest frequency used by your local TV Station. ALSO, state whether your antenna feed is 52 or 75 ohms. Either impedance can be used between Tx and an ATU such as the KW107 or KW E-Z Match.

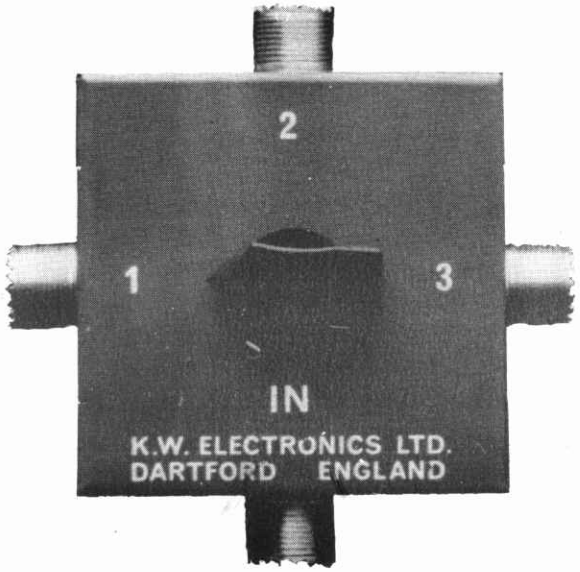
## KW BALUN

The KW Balun is broadband - 3 to 30MHz - and is waterproof, for use with all types of antennas fed with unbalanced co-ax. It will handle up to a kilowatt of power, with virtually no insertion loss. It is compact, lightweight and with a performance achieved only by the use of modern ferrite techniques. The Balun is designed for 50/75 ohms unbalanced co-ax input with 1:1 impedance ratio, for installation at the feed point of a dipole, beam or similar balanced type antenna.



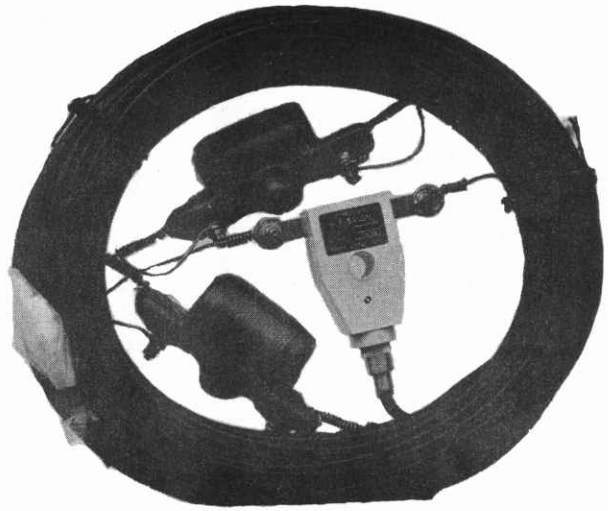

Size: 4" long x 1¼" diameter. Weight (4 oz.)

## KW ANTENNA SWITCHING UNIT

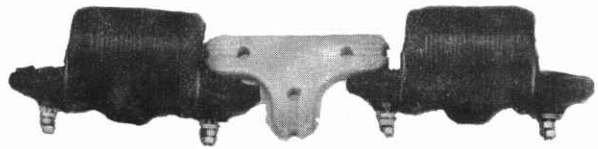



The KW Antenna Switch is designed to provide an efficient, simple and convenient means of selection from three coaxial inputs. The unit uses a heavy duty ceramic rotary switch, housed in a robust steel case fitted with SO239 UHF connectors. Mating connectors are the PL259.

## KW TRAP DIPOLE



The G8KW Multi-band Dipole has been specially designed to meet the requirements of those who desire operation on any of the HF bands and have only limited space available for antenna erection. The antenna consists of a centre fed dipole with a 108' top and utilises two resonant traps, one on either side of the feeder point and 65' apart. Each trap consists of a high 'Q' inductance and a capacitor specially designed to withstand high voltage and high circulating RF current. The tensile strength of these traps has been tested to 350 lbs. and they are impregnated to withstand extreme weather conditions. The traps act as insulators on 40 metres (7MHz). On 80 metres (3.5-4.0MHz) the traps act as loading inductances giving an electrical half-wave length on 80 metres. On frequencies higher than 7MHz the traps act as series capacitors. On 160 metres, the antenna may be used as a top loaded Marconi by joining the inner/and outer feeder connections together and loading against ground.



## KW TRAPS & TEE PIECE

# KW 103

## Combined Swr/Rf Power Meter

The KW103 is an instrument for measuring on a coaxial line feeding an Aerial System or Dummy Load

(1) Standing Wave Ratio.

(2) RF Power (with two ranges 0-100 & 0-1000W).

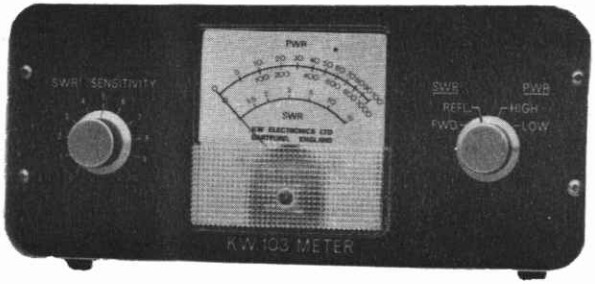
Units are available for 52 or 75 ohm impedance and are fitted with SO239 type UHF connectors.

The units are finished in KW Duo-grey which matches the KW2000B & E, KW1000 L/A and the KW202/204 series. All knobs are also matched. The unit measures approximately 4" x 9" x 4½" deep.

The KW101 is similar to the KW103 in appearance and size, but is without the Power Meter facility.

The insertion loss is minimal over the range 1.8 - 30 MHz and it is possible to leave the unit permanently connected in the feeder line.

Make sure your SWR is at a minimum - it is a step in the right direction when tackling the TVI problem. No modern Amateur Station can afford to be without the KW 103 or KW101. It is used professionally and sold at "Amateur" prices.




# KW 108 Monitorscope


The KW108 "Monitorscope" is a convenient instrument allowing "on-the-air" monitoring and testing of an amateur radio transmission on all bands from 160M through 10M.

The Monitorscope is designed to be connected between the Transmitter or Linear Amplifier antenna socket and the antenna or ATU and gives a visual display of the transmitter envelope which will allow the Tx to be "talked up" to full power output whilst watching for flat-topping which would cause the signal to "splatter" creating interference to Stations on adjacent frequencies and TVI.

By using the 2-tone Test Generator, the Transmitter may be adjusted to ensure that it is operating in a linear condition, necessary for good quality SSB transmission.

The KW108 is designed in the attractive KW G-Line style and matches all other of the famous G-Line products.

This equipment is finished in Duo-grey which also matches all other KW equipment.

# KW 110 Q-Multiplier

The KW110 Q-Multiplier has been designed to operate in conjunction with Receivers and Transceivers using a 455 KHz IF. It is especially suitable for use with the KW2000 series of Transceivers.

The KW110 is capable of greatly increasing the selectivity and enhancing a Receivers CW performance.


The Units are finished in KW Duo-grey which matches the KW "G" Line series.

The KW110 is housed in a cabinet approximately 102mm x 230mm x 115mm deep and is similar in appearance to the KW101 and KW103.

## PRODUCTS FROM KW DEVELOPMENTS LTD.

CDR ROTATORS. HAM-M for the Big Beam, TR44 for 3 Band 3 Element Beams, AR22R for Junior Beams and 2, 4, 10 and 15 metre Single Band Beams, AR10 for 2 and 4 metre Beams.

HY-GAIN ANTENNAS. 3 Band Trapped Beams, Quads, Single Band Beams, Verticals LOG-PERIODIC Beams (we can supply a 17 Element L.P. Beam in U.K. 13.5 dB gain, 6.2 - 30 MHz, Rotorable, c/w Control Unit and 60ft. Tower for approx. £1600). Model 400 Rotor and Control Unit.

MOSLEY ANTENNAS as advertised by Mosley Electronics Limited (U.K.)

MOBILE WHIP ANTENNAS and bases - 'G' Whips, Webster Bandspanner, Hustler etc.

HZP Baluns, SHURE Microphones, Mechanical Filters, Crystals, Morse Keys, Co-ax Cable, Multiway Cable, Tubes (T160L/572B, 6LQ6, 6146, 6146B, 6HF5, 7360, 6CH6, 6CL6 etc.) Antenna Wire, Auto Transformers, Insulators, Polystyrene Cord etc.

* YAESU MUSEN FT101 - FT DX401 - FR400SDX - FT75 - FT2F - FL2000B etc.

* ALL EQUIPMENT CHECKED AND ADJUSTED BY KW ENGINEERS, BEFORE DESPATCH

EASY TERMS AVAILABLE

* KW TESTED "TRADE-IN EQUIPMENT. Lists available

K.W. DEVELOPMENTS LTD., 1 Heath Street, Dartford, Kent.