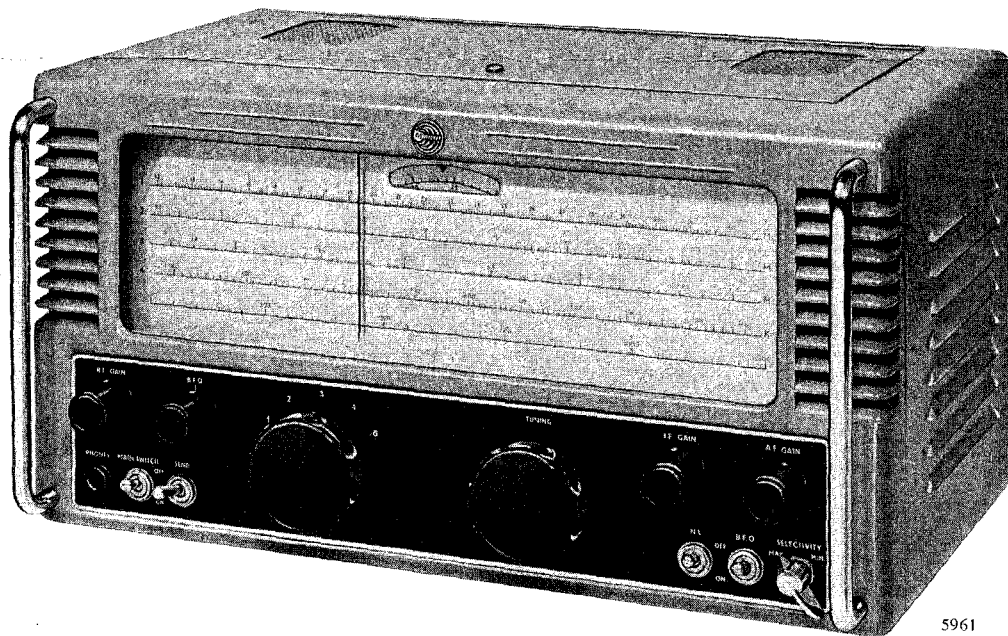




MF/HF Receiver *Type HR 100*



MODERN COMMUNICATIONS requirements call for a wide variety of receivers ranging from expensive cabinet mounted diversity equipments to low-priced models arranged for bench or table mounting. The Type HR 100 falls into this latter class and is an eleven valve double superheterodyne of outstanding design.

The set is rigidly constructed, having a front panel of aluminium die-casting to which the chassis is fitted, and is housed in a steel cabinet. Louvres are cut in the sides of the cabinet.

FEATURES

Horizontal scales on the wide, full vision dial are calibrated linearly, in frequency. An auxiliary vernier logging scale is also provided.

Single knob, slow motion tuning. The tuning

mechanism incorporates a flywheel-loaded high reduction ratio gearing.

A desensitising switch is provided.

Selectivity variable from 1 to 6 kc/s for 6db attenuation.

Careful choice of intermediate frequencies results in high adjacent channel selectivity and negligible image interference.

A hinged lid provides ready access to valves and tuning assembly and the removal of four screws allows the main chassis to be taken out of the cabinet.

CIRCUIT

One stage of RF amplification and two tuned circuits precede the first mixer, a triode hexode. A separate oscillator stage is used and the frequency

changer gives an output at 1620 kc/s as first IF. This is fed *via* a double-tuned IF transformer to the second frequency changer, which is a further triode hexode valve, and the intermediate frequency is converted to 85 kc/s. In this case the triode section of the valve is used as the local oscillator. A pentode serves as second IF amplifier and is followed by a double diode triode as detector, AGC rectifier and penultimate amplifier. Negative feedback is applied to the final pentode amplifier to maintain the output reasonably constant with varying loads.

A normal Hartley type circuit is used for the beat frequency oscillator and feeds into the detector stage on CW. The oscillator frequency is variable by ± 3 kc/s by front panel control. A

noise limiter may be switched into circuit as required.

Power supplies are derived from a full-wave rectifier stage using a double diode valve. Supplies to the frequency change oscillators, the BFO and the first mixer stage are stabilised so as to keep frequency drift to a minimum. The receiver is designed to operate from 110 or 210–240 V AC supplies but a 6-volt vibrator power unit may be supplied additionally, if required.

A dipole aerial Type 1818 is supplied with the receiver together with 100 ft of aerial feeder. An alternative item is a five inch permanent magnet loudspeaker, (Type 1816), which is mounted in a diecast housing specially designed to match the receiver in appearance.

DATA SUMMARY

Frequency range: 480 kc/s–32 Mc/s covered in four bands; 480–1465 kc/s, 1.7–4.5 Mc/s, 4.5–12 Mc/s, and 12–32 Mc/s.

Outputs: 3.5 W for 2.5 Ω external speaker and 10 mW into 600 Ω . High or low resistance telephones may be used.

Aerial: Aerial circuit arranged to match into 400 Ω feeder. Random aerials may be used.

Selectivity: Variable from 1 to 6 kc/s for 6 db attenuation.

Sensitivity: Better than 5 μ V for 20 db signal-to-noise ratio on CW at all frequencies.

Image protection: Better than 40 db at 30 Mc/s.

Frequency drift: Does not exceed 300 c/s for a change in mains voltage of $\pm 5\%$, 20 mins

after switching on.

Automatic gain control: Output maintained level to within 15 db for a change in input of 90 db above 3 μ V at 8 Mc/s.

Power supplies: 70 W approx. from 110 or 200–240 V 40–60 c/s AC mains.

Provision is made for operation from 6 V batteries, and an additional HT vibrator power unit Type 1817.

Dimensions:

Height	8 $\frac{3}{4}$ in.	(22 cm)
Width	16 $\frac{3}{4}$ in.	(42 cm)
Depth	10 in.	(25 cm)
Weight	40 lb	(18 kg)

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