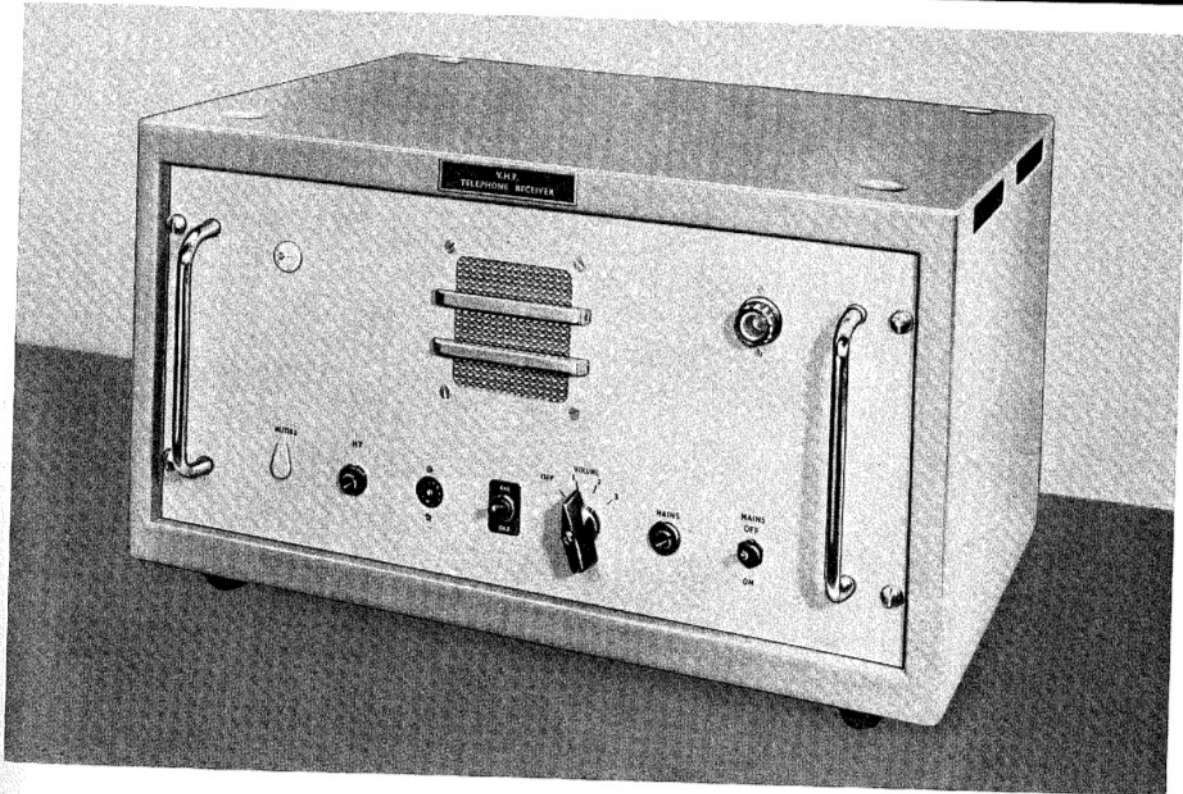




## VHF Telephone Receivers

*Types HR84A, HR85A and HR86A (FM)*



7282

THESE FREQUENCY MODULATED RECEIVERS are intended for use as fixed stations. They are suitable for installation in headquarters offices and may be employed for general monitoring purposes.

The receivers are built with standard 19 in. front panels and may be housed in a sturdy metal cabinet or, alternatively, may be mounted in a suitable rack or rack cabinet; this latter arrangement permits receivers to be mounted in banks if required. Facilities for remote control are incorporated.

All controls are on the front panel which

carries an on/off switch, volume control, power indicator lamp, and fuses. Each receiver incorporates its own loudspeaker and provision is also made for connecting an alternative external low impedance loudspeaker. A 600  $\Omega$  output is also included.

The complete assembly may be withdrawn from the cabinet or rack to permit easy servicing.

These equipments are designed to operate with an ambient temperature range of  $-10$  to  $+45^{\circ}\text{C}$  and are suitable for use in tropical climates. Provision is made for one or two channel frequency selection.

## CIRCUITS

The receivers are of the double superheterodyne type. The stages are: RF amplifier, first mixer, second mixer, second IF amplifier, limiters, discriminator and output amplifier. The local oscil-

lator is crystal controlled. A muting circuit, whose level is adjustable, incorporates a relay which may be used to operate external circuits, for example a call bell. The receivers incorporate their own power supply units.

## DATA SUMMARY

### Equipment editions:

Type	Frequency range	Operation
HR 84A	30–50 Mc/s	one or two-channel frequency selection.
HR 85A	70–100 Mc/s	
HR 86A	152–184 Mc/s	

**Frequency tolerance:** 20 parts in  $10^6$  without a crystal oven and 8 parts in  $10^6$  with a crystal oven, within an ambient temperature range  $-10$  to  $+45^\circ\text{C}$ . Crystal trimming is provided.

**Service:** FM telephony ( $\pm 15$  kc/s max. deviation).

**AF response:** Flat to within 3 dB from 300–3000 c/s, or alternatively 6 dB per octave de-emphasis.

**Audio output:** 1 watt into  $3\ \Omega$  loudspeaker and 10 mW into  $600\ \Omega$  unbalanced.

**Noise factor:** HR 84A, better than 9 dB.  
HR 85A, better than 6 dB.  
HR 86A, better than 8 dB.

**Spurious response:** Better than  $-80$  dB, including image frequency, referred to the working frequency.

**Selectivity:** Wide or narrow bandwidths as required.

**Oscillator radiation:** Less than  $0.02\ \mu\text{W}$ .

**Sensitivity (for  $1.25\ \mu\text{V}$  with 5 kc/s deviation):**

	HR 84A	HR 85A	HR 86A
Flat response	20 dB	20 dB	17 dB
6 dB de-emphasis	25 dB	25 dB	22 dB

**Distortion:** Less than 5% overall with 1 watt output at 1000 c/s.

**Muting:** Will operate to less than  $1\ \mu\text{V}$  input with adjustable control.

**Input impedance:**  $75\ \Omega$ .

**Power supplies:** 100–130 or 200–250 V, 50–60 c/s, single-phase AC.

**Power consumption:** 70 W (approx.)

**Dimensions (overall):**

	Height	Width	Depth	Weight
<i>Chassis only</i>				
	$8\frac{3}{4}$ in. (22 cm)	19 in. (48 cm)	12 in. (30 cm)	39 lb (17.7 kg)
<i>Receiver in case</i>				
	$11\frac{3}{4}$ in. (30 cm)	$20\frac{3}{4}$ in. (53 cm)	$16\frac{1}{4}$ in. (42 cm)	60 lb (27.3 kg)

*These receivers have been Type Approved by the British Post Office.*



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