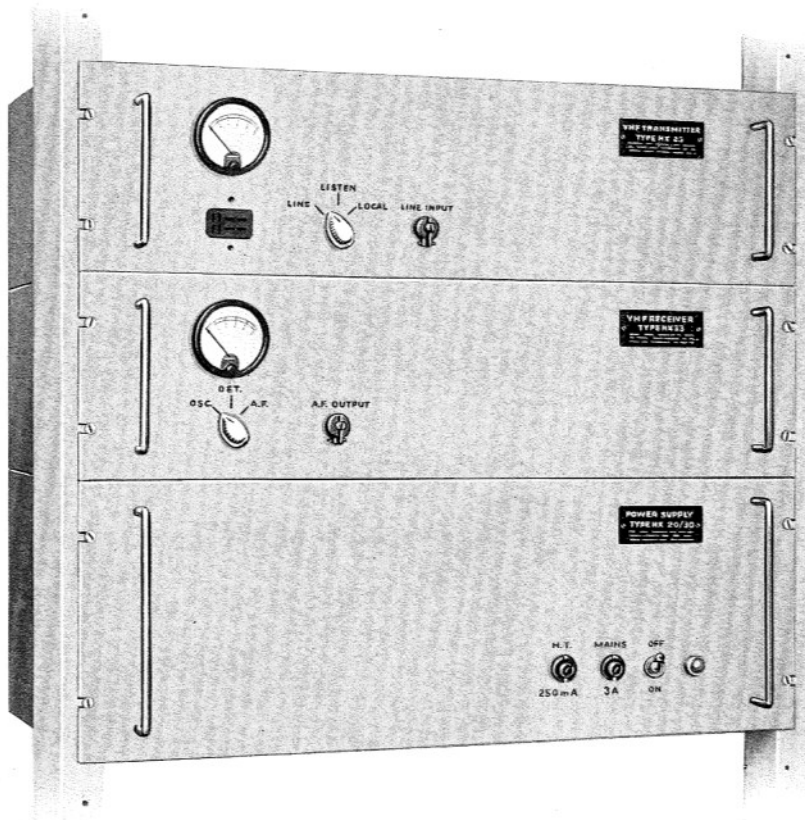




VHF Duplex Transmitting and Receiving Equipment *HX 20/30 Series*



5834

THE HX 20/30 series is designed for continuous duplex operation and generally serves as linking equipment. Provision is made for connection with certain types of telephone terminal units for two-wire connection to telephone systems and the equipment may be operated in conjunction with single-channel tone telegraph equipment. It can also be

used on four-wire circuits of 600 Ω impedance.

A basic installation comprises a transmitter, a receiver and a power unit conveniently mounted on 19 in. panels suitable for fitting to any standard Post Office rack. Dust covers enclose the chassis. The telephone terminal unit, when used, is fitted on the receiver chassis.

FACILITIES

Normal radio telephone operation. Direct point-to-point working as an independent link with all operational facilities provided by a normal type desk telephone incorporating bell calling facilities.

Interconnection with line circuits. Operation on a two-wire basis with various types of exchange, for example:

1. Two-way junction line working between two CB exchanges.
2. CB exchange to 22 V PBX or 40 V central battery exchange.

A type of terminal unit is available for operation with each type of telephone exchange in common use.

Tone telegraphy. Duplex tone telegraphy operation is provided for. A suitable VF tone telegraph unit can be supplied in this case.

CIRCUITS

The transmitter consists of a crystal-controlled oscillator followed by three multiplication stages and power amplifier stages.

The speech input is applied through a step-up transformer direct to the push-pull modulator operating under Class AB1 conditions.

The receiver is a crystal-controlled superheterodyne employing double-frequency changing and has a second IF of 5 Mc/s. The detected output voltage is passed through an efficient noise limiter which operates on impulse noise and clips off peaks with a modulation depth of more than 60%. Delayed AGC is provided.

DATA SUMMARY

TRANSMITTER

Frequency ranges:

- Type HX 21 56–75 Mc/s.
- Type HX 22 75–100 Mc/s.
- Type HX 23 156–184 Mc/s.

Power output: 3–5 W (depending on frequency band).

Frequency stability: Two parts in 10^6 per degree centigrade.

Modulation: AM: 95%.

Spurious radiations: All at least 65 db down.

AF response: Within ± 1 db from 150 c/s to 3000 c/s.

RECEIVER

Frequency ranges:

- Type HX 31 56–75 Mc/s.
- Type HX 32 75–100 Mc/s.
- Type HX 33 156–184 Mc/s.

Sensitivity: 1 μ V for 12 db signal-to-noise ratio.

Selectivity:

- 6 db down at ± 25 kc/s off tune.
- 30 db down at ± 50 kc/s off tune.
- 90 db down at ± 100 kc/s off tune.

AGC: 6 db output change for 60 db change of input signal.

Image protection: 65 db.

Audio output: 1 W.

AF response: Flat to within 6 db from 200 c/s to 3000 c/s.

Power consumption:

- Supply 100–110 V or 200–250 V 50 cycles AC
- Consumption 85 VA approx.

Dimensions:

	Height	Width	Depth
Transmitter	5½ in. (12.8 cm)	19 in. (48.3 cm)	8½ in. (21.6 cm)
Receiver	5½ in. (12.8 cm)	19 in. (48.3 cm)	8½ in. (21.6 cm)
Power Unit	7 in. (17 cm)	19 in. (48.3 cm)	8½ in. (21.6 cm)



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