



250-350-watt HF ISB Transmitter Type HS 22

TYPE HS 22 is a very useful ISB transmitter belonging to the series of equipments designed with the needs of the pioneer in mind. Its special features are such as to permit easy establishment of medium-distance teleprinter communication in under-developed areas where accessibility is not easy.

The robustness and small size of the Type HS 22 enable it to be transported with comparative ease and to withstand rigorous transit conditions. Having been installed it can be relied upon to give trouble-free service, requiring very little maintenance attention. Semi-skilled personnel can operate it –

a feature commending its usefulness in places where technical personnel are at a premium.

Due to its simple, straightforward design, the Type HS 22 is also an attractive equipment economically. Capital, installation and running costs are very low in comparison with the service provided.

The function of the equipment is to transmit two independent sideband channels on any four-spot frequencies in the range 2-20 Mc/s.

at 1.7 Mc/s thus giving an output of 1.8 Mc/s. This output, plus that from a four spot-frequency crystal oscillator, is fed to a balanced mixer stage. The final radiated frequency is selected by the mixer anode circuit, amplified and fed to the RF unit.

This unit contains a low-power amplifier stage coupled to the output tetrode, which is matched to the aerial feeder by a π circuit.

Throughout the transmitter the number of controls has been reduced to a minimum.

Data Summary

- Frequency range:** 2-20 Mc/s.
- Services:** ISB, SSB and DSB (one sideband and carrier).
- Power output:** 250-350 PEP.
- Harmonic radiation:** Less than 20 mW.
- Output impedance:** 50 Ω unbalanced. SWR 2:1 max.
- Frequency tolerance:** $\pm 0.0015\%$ for any 10° range from $10-40^\circ\text{C}$ ambient temperature.
- Noise level:** -40 dB rel. to PEP.
- Non-linear distortion:** Less than -28 dB rel. to either of two equal testing tones.
- Frequency response:** ± 2 dB from 350-3000 c/s.
- Input level:** -20 dBm to 0 dBm.
- Power supply:** 200-250 V, 50-60 c/s, single-phase AC.
- Power consumption:** Total 1800 W, standby 425 W.
- Dimensions:**
 - Height 6 ft (185 cm)
 - Width 2 ft (61 cm)
 - Depth 2 ft 6 in. (76 cm)
 - Weight 1470 lb (670 kg)

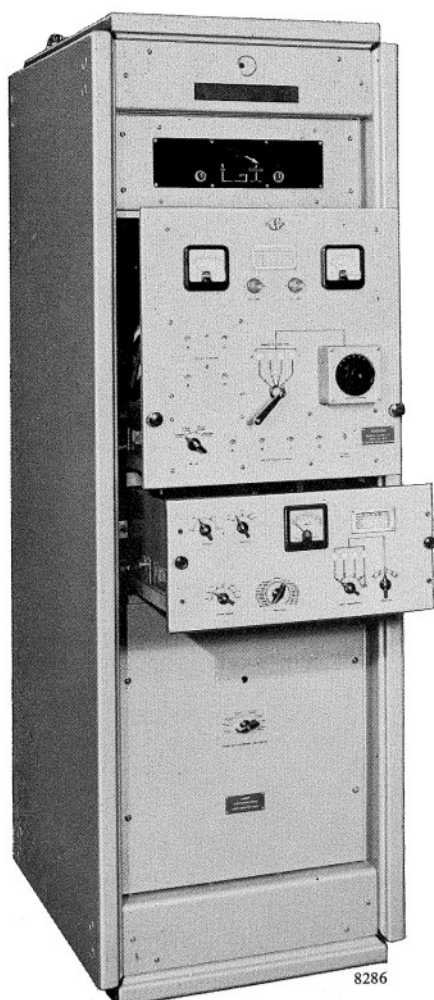
Features

- Rapid frequency selection. Any one of four spot frequencies can be speedily selected by semi-skilled operators.
- Built-in drive unit, providing two independent channels each 350-3000 c/s wide.
- Four separate 50-ohm outputs are provided, the required output being selected automatically during the wave-changing procedure.
- Air-cooling is effected by means of a low-noise fan built into the cabinet.
- Compact, robust construction, occupying a small amount of floor space. Easy access to all parts of the transmitter is afforded from front and rear.
- Reliable operation in all climates is assured. Generously rated components are employed and the cabinet is sealed against ingress of dust or insects.
- Extended control of on/off switching to a control point in another part of the building can be effected using a four-wire cable.
- Full protection of equipment and personnel is ensured.

EQUIPMENT

The transmitter is housed in a 6 ft metal cabinet and comprises three main units as follows: RF unit, drive unit and power supply unit. The RF and drive units are runner-mounted for easy access, and full metering facilities are provided on the front panels. The cabinet is dust-proof and the equipment is suitable for tropical use.

A conventional ISB drive unit is provided using the elegant crystal filter method of sideband suppression. A first modulator of 100 kc/s is followed by a second modulator



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