

Marconi 1 kW Wideband H.F. Amplifier Type H 1000

This is a wide-band distributed amplifier which requires no tuning within the h.f. band of 1.6-27.5 MHz. Frequency changes are made simply by switching the drive, thus avoiding the complications normally encountered during this operation. With an appropriate drive unit the transmitter may be used for any of the normal types of modulation.

FEATURES

- Any type of modulation using suitable drive.
- Simplicity of operation with no tuning required over the whole of the frequency range.
- Instantaneous frequency changing by selection of drive frequency only.
- Simultaneous transmission on two or more radiated frequencies.
- A single valve failure does not normally interrupt traffic.
- High standing-wave ratio can be tolerated.
- A 2:1 standing wave ratio on the output feeder produces only a slight reduction in power.
- Sine wave rectifier power supplies.
- Forced air cooling system.

Circuit

The penultimate stage comprises a two-stage wideband amplifier. The final stage consists of 18 valves operating as a distributed amplifier. These 18 valves operate between two similar artificial transmission lines in such a way that all valves are driven at the same level, but with a time delay depending upon the properties of the trans-

mission line. To maintain optimum efficiency over the whole frequency range, the characteristic impedance of the line is made to vary along its length.

In versions designed to operate with external frequency synthesizers, an additional wideband amplifier is incorporated to raise the maximum overall gain from 34 dB to 61 dB.

A wideband ferrite-cored output transformer provides a 50 Ω unbalanced output.

Versions

Edition 01 requires a modulated input of 0.65 W p.e.p at the radiated frequency.

Edition 02 includes a wideband amplifier (Type H 1001) and requires an input of approximately 1.2 mW p.e.p at the radiated frequency.

Edition 08 provides for the incorporation of an H1505 spot-frequency drive unit (see page 256).

DATA SUMMARY

Frequency range: 1.6-27.5 MHz.

Services: Any type of modulation from any drive giving a suitable output.

Power output: 1 kW mean (c.w or f.s.k), 1 kW p.e.p (i.s.b or s.s.b).

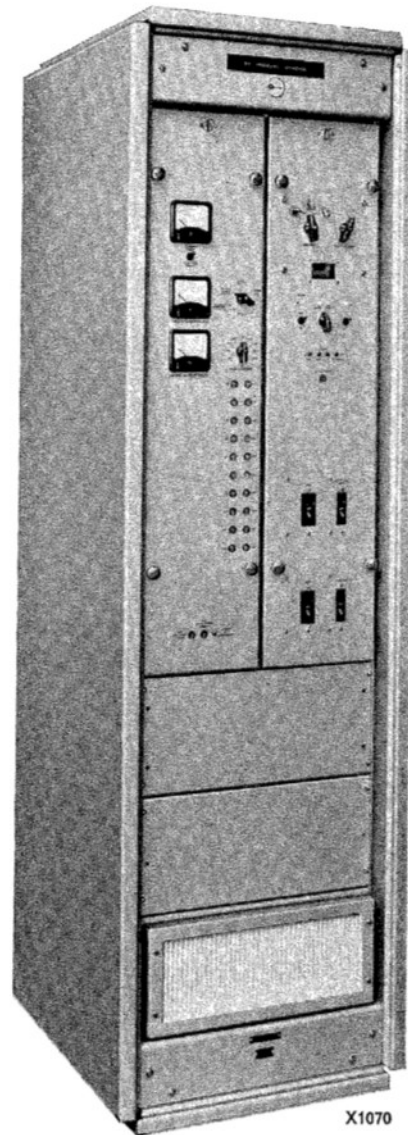
Frequency stability: Dependent on drive.

Harmonic radiation: 1 kW p.e.p on i.s.b or s.s.b < 50 mW, 1 kW c.w or f.s.k < 100 mW.

Intermodulation products: Not worse than -40 dB relative to either of two equal test tones.

Hum level: Better than -50 dB relative to p.e.p.

Output impedance: 50 Ω unbalanced.



X1070

Input impedance: 75 Ω unbalanced.

Maximum standing wave ratio: 2:1, above 2 MHz; 1.7:1, below 2 MHz.

Power supply: 360-440 V ($\pm 6\%$) 3-phase 50 or 60 Hz ($\pm 2\frac{1}{2}\%$) 4 wire a.c.

Power consumption: 6 kW at 0.9 power factor (for 1 kW c.w output).

Dimensions:

Height 6 ft 10 in. (208 cm)

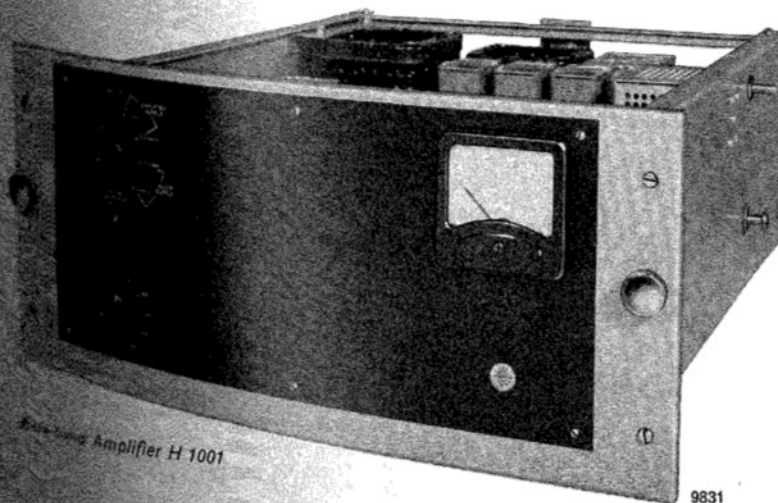
Width 2 ft (61 cm)

Depth 2 ft 4 in. (71 cm)

Weight 712 lb (324 kg)

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