Band IV/V Television Transmitter (5 kW)

Amplifier Type B 7303 (BD 381) with Drive Type B 7300 (BD 463)

THIS transmitter comprises a 5 kW vision amplifier and 1 kW sound amplifier, driven from a separate common drive cabinet. It is designed for monochrome or colour transmission.

Features

- Vision and sound klystron amplifiers are similar, thus simplifying spares and maintenance procedure.
- Vision and sound drives are integrated to ensure stability of the vision-to-sound carrier separation.
- The sound drive employs the FMQ system of frequency modulation (see page 142).
- Unique system of diode modulation, ensuring optimum linearity for colour working.
- Specifically designed for parallel operation.

EQUIPMENT

The vision and sound klystron amplifiers are contained, together with their associated power supplies, in a cubicle 8¼ ft (2·5 m) wide by 5½ ft (1·7 m) deep and 7 ft (2·14 m) high. The enclosure requires access through the front and sides only and can be placed against a rear wall. An external filterplexer is required.

The drive equipment is mounted in a separate double-bay cabinet.

CIRCUITS

Vision and sound drive transmitter. This is the Drive Type B 7300, circuit details of which can be seen on page 156.

Vision and sound amplifiers. Both amplifiers use the same type of four-cavity klystron, designed for television use and entirely forced air-cooled. Each klystron is mounted inside its own circuit assembly on a wheeled carriage. Air connections are made with quick-release flexible couplings. The r.f connections are also made by means of flexible joints. The entire assemblies may therefore be withdrawn from the front of the equipment. One spare assembly, complete with klystron, may thus be used for either sound or vision amplifiers.

Data Summary

(1) *Drive equipment:* see page 156.

(2) *Vision amplifier:*

Power rating: 5 kW peak sync.

Frequency range: 470–854 Mc/s.

Output load impedance: 50 Ω unbalanced.

Performance: The characteristics of u.h.f television transmitters are at present the subject of discussion between various broadcasting authorities and few agreed standard exist. This transmitter is designed to meet the most stringent colour specification at present in use and is confidently expected to meet any requirements likely to arise in the near future. Not only the overall amplitude/frequency response but also the group delay, differential phase and differential amplitude characteristics of this transmitter are such as to enable the equipment to be used for N.T.S.C, S.E.C.A.M or P.A.L colour transmission systems.

A typical frequency response to which the transmitter and filterplexer can be set when used with the 625-lines negative-modulation standard defined under the Stockholm plan, Standard G, is given below. Measurements are made at the output of the filterplexer when working into a matched load and using a peak-to-peak sine wave video input of 20% of maximum picture amplitude at mid-grey level. Referred to the amplitude of the upper sideband at 200 kc/s the amplitude/frequency response will be within the following tolerances:

Upper sideband:	*Lower sideband:*
Less than 4 dB down at 5 Mc/s. Better than ±0·5 dB between 0 and 3 Mc/s.	Less than 3 dB down at 0·75 Mc/s. Not less than 20 dB down at 1·25 Mc/s. Not less than 20 dB down at 4·43 Mc/s.

(3) *Sound amplifier:*

Power rating: 1 kW.

Frequency range: 470–854 Mc/s.

(4) *Vision and sound amplifiers:*

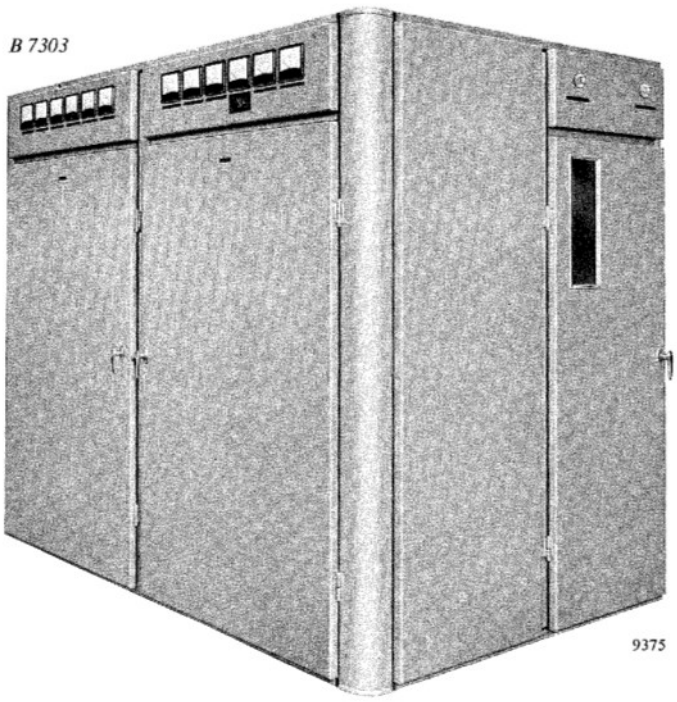
Power supply: 415 V, 50–60 c/s, 3-phase 4-wire.

Power consumption: (excluding drive transmitter but including cooling fan): Approx. 31 kVA at 0·9 power factor.

Dimensions:

Width:	8 ft 2¼ in.	(2·51 m)
Depth:	5 ft 6¼ in.	(1·69 m)
Height:	7 ft	(2·14 m)

B 7303



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Marconi

The Marconi Company Limited
Marconi House, Chelmsford, Essex
Telephone: Chelmsford 3221 · Telex: 1953
Telegrams: Expanse Chelmsford Telex