



Band IV/V Television Drive Transmitter (10 or 75W) Type BD 463

THIS drive equipment forms the basis of a range of u.h.f television transmitters currently offered by the Marconi company. Providing vision and sound drive up to a level of 10 watts it is designed to the most stringent specifications for colour transmissions in the world.

Features

Highly accurate, independent adjustments of differential gain and phase and other parameters so important for colour transmissions.

Unique highly linear diode modulator.

Integrated vision and sound equipment ensuring good vision-to-sound carrier stability.

Transistors used extensively throughout the equipment.

Incorporates blanking-level feedback and synchronizing pulse amplitude stabilizing.

Specifically designed for use with amplifiers for use in parallel.

EQUIPMENT

The BD 463 Drive is housed in a double-bay cabinet, which will also house the additional units required for parallel operation of amplifiers. Only the blanking-level feedback

detector and sync. level feedback detector are mounted externally, on the output feeder of the associated amplifier. The equipment is air-cooled throughout by an internally mounted fan.

CIRCUITS

(a) *Video*: The video chain consists of a correction unit followed by the main modulator. The correction unit enables adjustments of great accuracy to be made, virtually independently of each other, for differential gain, differential phase, high-frequency response and group delay, in addition to all the adjustments normally found in a sub-modulator. Sync. pulse amplitude stabilization and blanking-level feedback are also applied in this chain. The output from the main modulator is applied to the modulator diode unit.

(b) *Vision drive*: A fully ovened transistorized drive is followed by multipliers and a unique diode modulator. This is followed by a further amplifier to provide approximately 10 W output. An additional amplifier stage provides 75 W when required.

(c) *Sound drive*: This is based upon the well known f.m.q modulator. A low-frequency output from this is mixed with an unmodulated component of the vision drive and then multiplied and amplified to the working frequency.

(d) *Parallel operation*: If used with amplifiers in parallel two drive equipments can be used in main and standby condition. This provides automatic facilities for a faulty drive and bringing the standby equipment into operation.

(e) *Envelope monitor*: The drive cabinet also houses an r.f envelope monitor for displaying the r.f output on the fan of a cathode ray tube.

Data Summary

(1) Overall

Power rating: Approx. 10 W or 75 W according to requirements of following amplifier.

Frequency range: 470-854 Mc/s.

Type of transmission: Vision, double side-band (v.s.b shaping external). Sound, f.m.

Output load impedance: 50 Ω unbalanced.

Power supply: 380-420 V, 50-60 c/s, 3-phase 4-wire.

Power consumption: Approx. 4 kVA at 0.9 power factor.

(2) Vision

Carrier-frequency stability: ± 500 c/s per month.

Blanking-level stability: Within $\pm 2\%$ of peak signal level.

Frequency response: Reference should be made to the appropriate transmitter specifications.

Amplitude linearity: Suitable for colour.

Noise level: At least 50 dB below peak output for asynchronous noise and hum.

Video input: 1 V p-p composite 75 Ω unbalanced.

(3) Sound

Carrier frequency stability: ± 1000 c/s per month. In addition the sound and vision separation will not vary by more than ± 1000 c/s per month.

Frequency deviation: ± 50 or ± 25 kc/s.

F.M noise level: At least 60 dB below level corresponding to ± 50 kc/s deviation.

A.M noise level: At least 50 dB below carrier level.

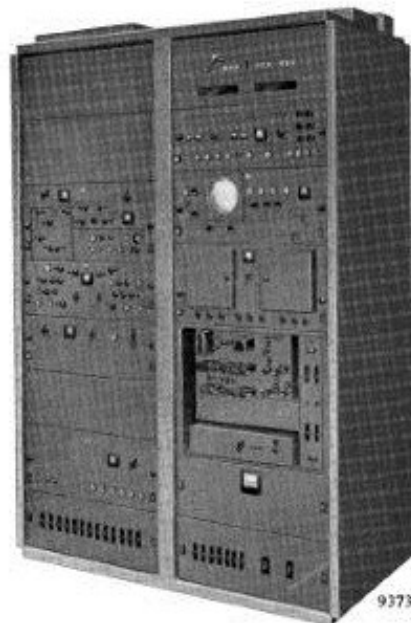
A.F distortion: 100 c/s to 10 kc/s, less than 1%. 30 to 100 c/s and 10 kc/s to 15 kc/s, less than 1.5%.

Audio pre-emphasis: 25, 50 or 75 μ s.

A.F response: ± 1 dB from 40 to 15,000 c/s measured of the output of a standard de-emphasis network, reference level 400 c/s.

A.F input impedance: 600 Ω balanced.

A.F input level: ± 6 dBm for ± 50 kc/s deviation.



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