



Band IV Television Transmitter (1 kW) Type TD 501B

Designed and produced by Marconi Italiana, Genoa, Italy

THE TYPE TD 501B combines a 1 kW vision transmitter and a 250-500W FM sound transmitter, and can operate on any frequency within the band 470-890 Mc/s. It is designed for use on 625-line systems to C.C.I.R. standards.

Features

Suitable for monochrome or colour.
Centralized control of sound and vision transmitters.
FMQ system of frequency modulation used in sound transmitter.
Similar RF stages in vision and sound transmitters.
Fullest servicing access provided.
Adequate protection both for equipment and personnel.

EQUIPMENT

The combined transmitter occupies a standard three-bay cabinet. The vision and sound sections each occupy one bay and the control and protective circuits for both sections, together with the cooling blower, are centralized in the middle bay.

The vision transmitter consists of a high-stability crystal-controlled drive unit followed by frequency multipliers and intermediate and output power stages. The final stage is anode-modulated, five stages of video amplification preceding the modulator. Conventional amplitude/frequency correction and DC restoration are included.

In the sound transmitter an RF chain similar to that of the vision transmitter follows the FMQ drive unit.

Data Summary

VISION

Power rating: 1 kW peak sync. pulse.
Frequency range: 470-890 Mc/s.
Type of transmission: AM vestigial sideband.
Carrier frequency stability: Better than ± 1 part in 10^6 .
Output impedance: 50 Ω unbalanced.
Frequency response: The sideband amplitude is less than 3 dB below an ideally flat characteristic at 5 Mc/s.
Modulation capability: 87.5 (± 2.5)% (reference black).
Amplitude linearity: Departure from linear characteristic less than 15% over the full picture amplitude range.

Amplitude variation (over 1 frame of picture):

P-p, less than 3% of peak sync.

AM noise (RMS): 46 dB below 100% modulation.

Video input: 1V p-p min. at 75 Ω (unbalanced).

SOUND

Power rating: 250-500 W.

Frequency range: 470-890 Mc/s.

Frequency stability: Difference between sound and vision carriers is 5.5 Mc/s ± 1000 c/s max.

Modulation: FMQ method of frequency modulation.

Frequency deviation: Up to ± 75 kc/s (± 50 kc/s = 100%).

FM noise level: 60 dB below level corresponding to ± 50 kc/s deviation.

AM noise level: 50 dB below carrier level.
AF response: Within ± 1 dB from 30 to 15,000 c/s.

AF distortion:

1.5% max., 50-100 c/s and 7.5-15 kc/s.
1% max., 100 c/s-7.5 kc/s.

Audio pre-emphasis: Standard 50 μ s.

AF input impedance: 600 Ω balanced.

AF input level: 6 (± 2) dBm for ± 50 kc/s deviation.

GENERAL

Power supplies: 220 V (± 3 %) 50 c/s, single-phase AC.

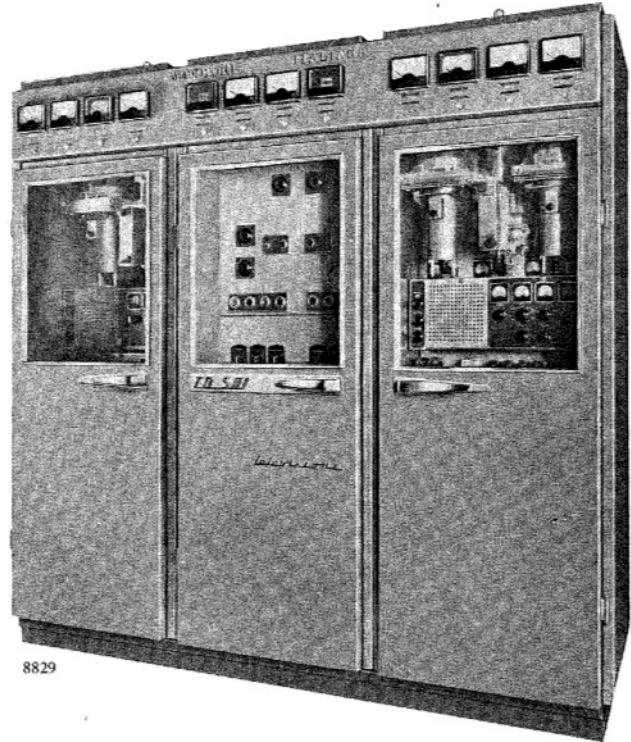
Power consumption: 10 kW (black level) at 0.9 power factor.

Ambient conditions:

Altitude 5000 ft (1500 m) max.
Temperature +10 to +45°C.

Dimensions:

Height 7 ft 2½ in. (220 cm)
Width 7 ft 6½ in. (230 cm)
Depth 3 ft (91 cm)
Weight 2850 lb (1300 kg) approx.



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Marconi

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