# Band IV/V Television Transmitter (5 kW)
## (Amplifier Type BD 381 with Drive Type 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 f.m.q system of frequency modulation (see page 143).

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 5¼ 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. A filterplexer is air-cooled throughout using an external fan.

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

### CIRCUITS

*Vision and sound drive transmitter.* This is the Drive Type BD 463, circuit details of which can be seen on page 164.

*Vision and sound amplifiers.* Both amplifiers use a similar 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 The entire assemblies may therefore be withdrawn from the front of the equipment.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 both sound and vision amplifiers.

### Data Summary

(1) *Drive equipment:* see page 164.

(2) *Vision amplifier:*

**Power rating:** 5 kW peak sync.

**Frequency range:** 470–854 Mc/s.

**Output load impedance:** 50 Ω unbalanced.

**Frequency response:** When measured at output of filterplexer, working into a matched load and using an input of 20% p-p of maximum picture amplitude at mid-grey level, amplitude/frequency response (measured relative to 200 kc/s u.s.b) will be within the following limits:

625 LINES, NEGATIVE MODULATION
(Stockholm plan Standard I)

| *U.S.B* | *L.S.B* |
|---|---|
| Less than 3 dB down at 5·5 Mc/s. Better than ±0·5 dB between 0 and 3 Mc/s. Response will not vary more than +1 dB to −2 dB ref. 4·43 Mc/s over range 2·8 to 5·5 Mc/s. | Less than 3 dB down at 1·25 Mc/s. Not less than 20 dB down at 1·75 Mc/s. Not less than 42 dB down at 4·43 Mc/s. |

525 LINES, NEGATIVE MODULATION

| *U.S.B* | *L.S.B* |
|---|---|
| Less than 1·5 dB down at 3·58 Mc/s. Better than ±0·5 dB between 0 and 3 Mc/s. Response will not vary more than +1 to −1·8 dB ref. 3·58 Mc/s over range 2 to 4·18 Mc/s. | Not more than 3 dB down at 0·75 Mc/s. Not less than 20 dB down at 1·25 Mc/s. Not less than 42 dB down at 3·58 Mc/s. |

NOTE: *This transmitter will also conform to Stockholm-plan standards G, H & K and is suitable for colour, using the N.T.S.C colour system.*

**Amplitude linearity:** Suitable for colour.

(3) *Sound amplifier:*

**Power rating:** 1 kW.

**Frequency range:** 470–854 Mc/s.

(4) *Vision and sound amplifiers:*

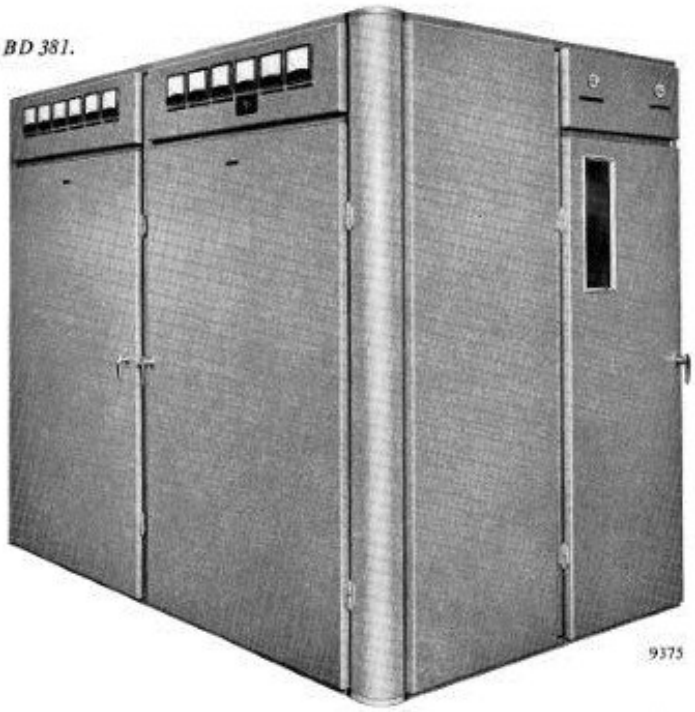
**Power supply:** 415 V, 50–60 c/s, 3-phase 4-wire.

**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) |

*BD 381.*



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