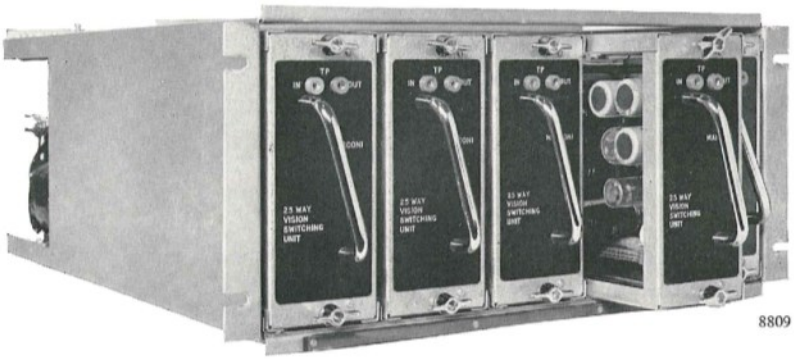
25-way Vision Switching Assembly
Type V 4720



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THIS ASSEMBLY forms the basis of a multi-channel television switching system providing independent selection of any one of up to 25 signal sources at any number of separate viewing positions. Each assembly comprises five 25-way Vision Switching Units Type V 4721 mounted side by side in a Mounting Frame Type V 4722 and thus allows for up to five viewing positions. A total of nine assemblies, providing for 45 viewing positions, can be accommodated in a single 7 ft rack cabinet.

Each switching unit is operated remotely from its associated viewing position by a push-button selection unit, the two units being connected by a multi-core switching cable.

TYPICAL SYSTEM

A typical system comprises the following basic elements:

(a) Up to 25 picture sources.
(b) Switching and distribution equipment to permit independent selection of any picture source from any viewing position.
(c) Any required number of viewing positions.
(d) The necessary ancillary equipment.

There is considerable economic advantage to be gained by performing the signal distribution amplification after switching, as the number of amplifiers is thereby a minimum. In practice, however, a standard-level vision signal cannot be split more than 5-ways in a passive network without reducing the signal level below the minimum for satisfactory switching. Where more than 5 outputs per source are required, therefore, vision distribution amplifiers must be employed before switching.

The vision signal from each source is thus split into the appropriate number of separate outputs corresponding to the number of viewing positions by a combination of vision distribution amplifiers and resistive splitting networks. For 50 viewing positions, for example, the signal from each source is first fed to two 5-way Vision Distribution Amplifiers Type BD 886 (see page 94) and each of the ten separate outputs so provided is then further split 5 ways in a resistive network, providing the required total of 50 separate outputs per source.

One output from each source is then fed to the appropriate input of a 25-way Vision Switching Unit Type V 4721, one such unit being provided for each viewing position.

EQUIPMENT

The Vision Switching Unit Type V 4721 is designed to switch any one of up to 25 input signals to a single monitor. It consists of a remotely operated 25-way uni-selector, followed by an amplifier which restores the signal level lost in the resistive splitting network.

A feature of the system is the maintenance of a constant synchronizing pulse signal to each display during the switching operation. This eliminates picture 'roll-through' and results in a cleaner and quicker transition between pictures. Flashing on the displays during the switching operation is eliminated by the provision of a muting relay in each vision switching unit.

The switching system employs the appropriate number of Regulated Power Supply Units Type BD 893 and Relay Power Supply Units Type 8216 A.

Data Summary

INPUTS

Power: A.C mains, 100 to 125 V or 200–250 V, 50 or 60 c/s. Adjustable by tappings. Power consumption approx. 38 VA.
250 V d.c, 275mA.
48 V d.c 2A.

Vision: 0·7–1 V peak-to-peak non-composite positive-going.

Sync. pulses: 1 to 4 V peak-to-peak negative-going.

OUTPUT

1–1·5 V p-p composite signal (into 75 Ω).

PERFORMANCE

Overall h.f response: ±0·2 dB to 5 Mc/s ±0·5 dB to 10 Mc/s.

Differential linearity: Less than 2½% (measured with twice normal amplitude line frequency sawtooth).

Amplifier output impedance: 75 Ω ±5 Ω to 7 Mc/s.

Sync: Output constant for any input between 1 V and 4 V p-p and immune from up to 100% of hum superimposed on input. Output may be set between 0·25 and 0·5 V.

Mounting frame dimensions:
Height 8¾ in. (22·2 cm)
Width 19 in. (48 cm)
Depth 22 in. (56 cm)
Weight 35 lb +45 lb for 5 v.s.u's (16 kg +20 kg)

Marconi

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