Pulse and Coding Equipment for Colour Television

THE equipment here described produces all the signals necessary for the synchronization of the camera and receivers, and for adding the subcarrier reference burst to the signal, in order to achieve colour synchronization. The coding equipment generates a compatible colour signal from the subcarrier signal and the three simultaneous colour signals.

All units are designed to operate on 625, 525 or 405 lines per frame.

Synchronizing Pulse Generator
Type BD 689 or BD 868

These produce all the inter-related pulses necessary for driving and synchronizing the complete system. The outputs are locked to the subcarrier frequency by connecting the twice line-frequency output of the colour subcarrier frequency generator to the dividing circuits of the sync. generator. (See also pages 81 and 82).

Colour Subcarrier Frequency Generator
Type BD 927

This unit provides an extremely stable sine wave output at the subcarrier frequency. It also divides this frequency down to the twice line-frequency of the system, the resulting signal being fed to the synchronizing generator to lock the system pulses to the subcarrier signal. Two crystal oscillators and their associated tuned-circuit components are mounted in a single oven, one functioning as a standby. Alternatively, the oscillators may be adjusted to operate on different frequencies, enabling a quick system changeover to be effected.

The frequency stability is better than three parts in 10^9 and the drift is less than 0·1 c/s per second.

Burst Gating Pulse Generator Type BD 924

Colour synchronization on colour monitors and receivers is achieved by a short burst of the colour subcarrier on the back porch of the signal at a given phase reference. The Burst Gating Pulse Generator Type BD 924 produces a gating pulse of suitable duration and timing to insert the subcarrier signal on to the back porch of the signal in the colourplexer. The timing and width of this pulse is accurately determined by a pulse-forming delay line and the timing may be varied by a fine switch control.

Sync. and Burst Mixer
Type BD 925

This unit combines the subcarrier signal with the mixed synchronizing signal. This signal simulates a 'black' condition and may be used with vision mixers where it is desired to fade to black without loss of colour sync.

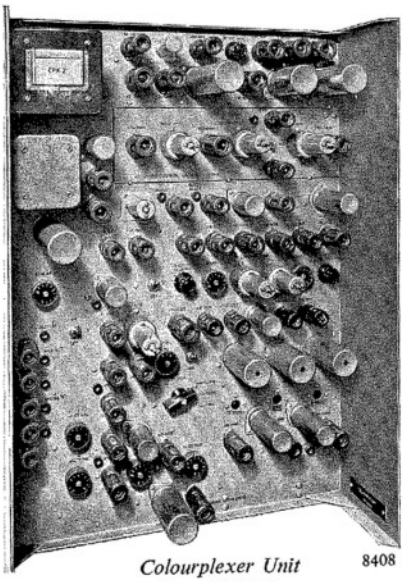
Colourplexer
Type BD 926

In order to form a suitable compatible signal for broadcasting within the allocated bandwidth of a normal black-and-white system, the three simultaneous colour signals are encoded to form a single composite colour signal. This composite signal comprises the luminance signal, conveying the standard black-white information, and the chrominance signal conveying the colour information.

The chrominance information is transmitted entirely on the subcarrier, two independent quantities denoting hue and colour saturation being conveyed as phase and amplitude modulation respectively.

Modulation of the subcarrier is produced by two suppressed carrier modulators operating in phase quadrature.

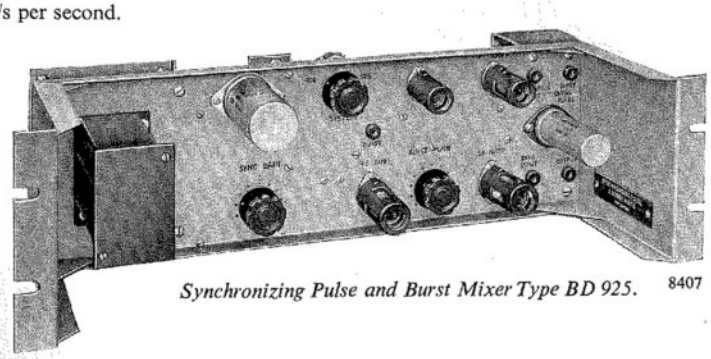
An automatic carrier balance circuit ensures complete cancellation of the subcarrier in those parts of the signal corresponding to neutral colours. The unit has a dual input and may be simultaneously coupled to the output of a colour camera channel and a colour bar generator, the required input being selected by a switch on a central control panel.



Colourplexer Unit Type BD 926. 8408

Subcarrier Phase Shifter Type 5467A

This unit controls the relative phase of the subcarrier signal by means of coarse and fine phase-shifting networks. It is essential in a system incorporating more than one colourplexer unit, in order to obtain coincidence of phase of the subcarrier burst component at the output of each colourplexer unit.



Synchronizing Pulse and Burst Mixer Type BD 925. 8407

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