

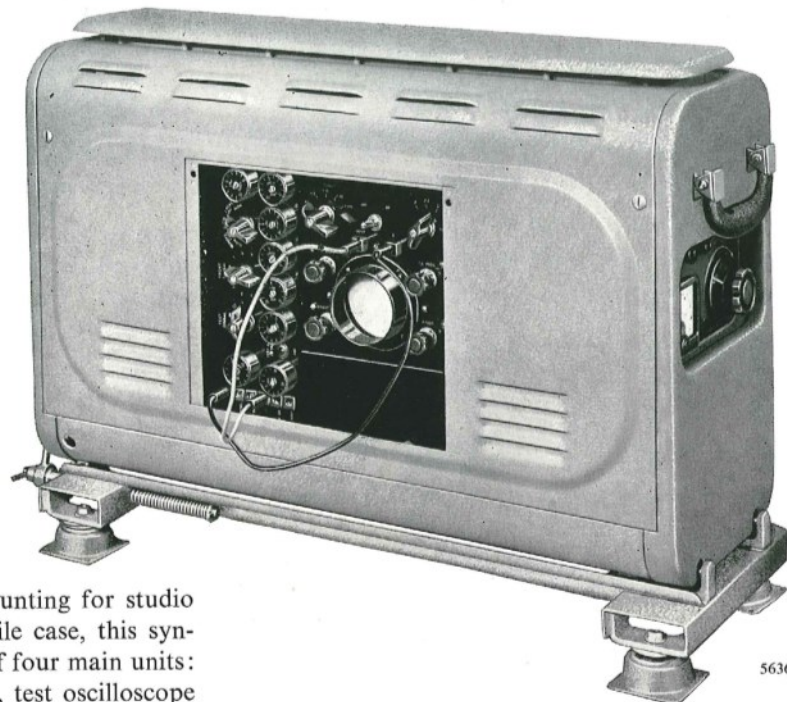


Synchronising Generators

Type BD636 for Studio use

Type BD668 for Mobile use

FOR 405 LINE SYSTEMS



DESIGNED either for rack mounting for studio use or for assembly in a mobile case, this synchronising generator consists of four main units: the timer, waveform generator, test oscilloscope and power supply units. When rack mounted, a standard 0.4 amp regulated power supply unit Type BD 654 is normally employed, but the mobile unit has its own built-in supply circuits.

TIMER

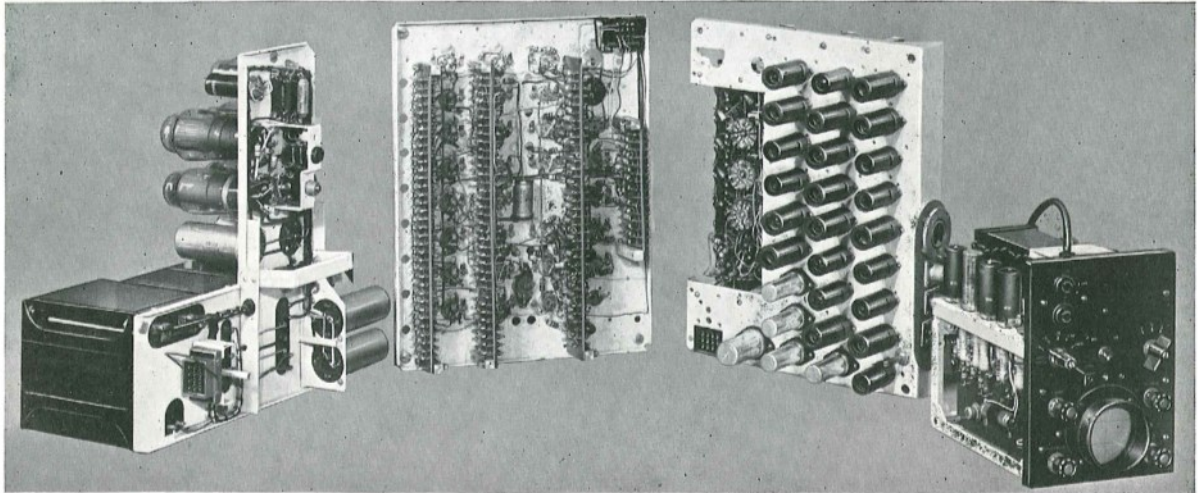
This incorporates a master oscillator of 20.25 kc/s with facilities for a 'spongy' lock, of long time constant, to the mains frequency. The master frequency is divided to the line frequency of 10.125 kc/s and to the field frequency of 50 c/s by binary counting chains. This panel also includes means for establishing, precisely, a period of four lines length which serves as the field driving waveform and to control the emission of eight 20.25 kc/s broad pulses for field synchronising purposes.

WAVEFORM GENERATOR

In this unit the driving, synchronising, blanking and test waveforms are generated.

The leading edges of all pulses are established by a common 20.25 kc/s waveform, the relative timing being determined by means of a delay line. This delay is normally adjusted so that the line driving pulse leads the line synchronising pulse by 4 μ s. The front porch is variable between $\frac{1}{2}$ μ s and 2 $\frac{1}{2}$ μ s by means of a ten position switch.

The lengths of the line and field components of both synchronising and blanking waveforms and the length of the line driving pulse are established by time constants which are readily variable by means of panel-mounted controls.



The units of the Type BD 668 equipment showing from left to right: power unit, timer, waveform generator, test oscilloscope. 5637

An output is provided at which test signals may be obtained. These are optionally as follows:

- (1) Black level.
- (2) Peak white.
- (3) $2 \mu\text{s}$ pulse at line frequency in centre of line.
- (4) Black cross on peak white ground.
- (5) Line frequency saw-tooth.

These signals can be had with or without synchronising signals.

The test signal output is fitted with an adjustable clipper by means of which the peak amplitude is limited normally to 0.7 V peak-to-peak with the optional addition of 0.3 V peak-to-peak synchronising signal. The clipper is removed during transmissions of saw-tooth in order that the limiting amplitude in a transmission system may be determined.

The driving, synchronising and blanking waveforms are negative and are of $2 \text{ V} \pm 0.25 \text{ V}$ amplitude in 75Ω while all transitions are $0.2 \mu\text{s}$ or better.

TEST OSCILLOSCOPE

A number of pin jacks are provided on the timer and waveform generator panels for the monitoring of the more important waveforms. The waveform monitor is intended for connection to these jacks and consists of a $2\frac{3}{4}$ in. diameter cathode

ray tube with an amplifier having a response flat up to 4 Mc/s and a free running synchronisable time base. This monitor is intended only to indicate that pulses of approximately the correct shape and amplitude exist in various parts of the circuit and is not designed to replace the precision waveform monitor.

The oscilloscope is readily removed from the synchronising generator case and, being entirely self-contained, may be used to facilitate the servicing of other components of a television chain. In this case mains supply may be obtained from the utility outlets provided on the equipment.

POWER SUPPLY UNIT

This provides the HT and LT supplies required by the timer and waveform generator in the mobile unit. The HT supply of 250 V is regulated. The generator consumes about 350 VA.

Dimensions (approx.):

	Height	Width	Depth
Type BD 668 (mobile)	16 in. (41 cm)	$8\frac{1}{2}$ in. (22 cm)	26 in. (66 cm)
Type BD 636 (studio)	30 in. (76 cm)	19 in. (48.5 cm)	8 in. (20.4 cm)

Marconi

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