



Test Waveform Generating Equipment *Type BD817*



6228

VARIOUS TYPES of waveform are required for television test purposes and the Type BD 817 equipment has been designed to meet this need. The equipment consists of a number of panels suitable for mounting in a standard 19-inch rack or cabinet. Each panel generates a particular waveform, so that an assembly can be built up to cover various requirements and maximum flexibility is thus afforded. Each panel consists of a recessed pan-type chassis with the valves, test jacks, major components and controls mounted on the front.

A power supply unit Type BD 654, described on page 167, is supplied with each assembly together with a Power and Pulse Junction Panel Type 2124.

Sawtooth Generator *Type 1877*

The sawtooth generator provides a positive-going line-sawtooth with adjustable set-up and

standard blanking. Sync. may be added to the waveform if a composite output is required. Sawtooth and sync. component amplitudes can be adjusted independently. This waveform is most useful for checking the linearity of amplifiers, sync. clipping circuits and transmitter circuits.

Cruciform Generator *Type 1878*

This generator provides a waveform (complete with blanking) giving a black cross on a white background, with or without sync. as required.

The waveform is particularly useful for detecting poor low-frequency response, which shows up as shading, especially marked in the horizontal bar. The condition of the edges of the vertical bar gives an indication of high-frequency response. The pattern also gives a rough check on linearity.

The operational controls include: line bar position and width, field bar position and width, sync. amplitude, picture amplitude and sync. on/off.

Black/White Generator Type 1880

This generator provides an output which may be switched locally or by remote control to give either peak white or black level. A Black/White Generator Control Unit Type 2106 is provided to facilitate switching from a convenient remote monitor point in the television system. Sync. may be added to the signal, if required, and independent adjustments of peak white and sync. amplitudes are provided.

The generator is used to check sync. crushing or stretching, which may occur in a television system when a predominantly white picture is injected. By measuring the amplitude of the sync. output from the system when supplied first with no signal (*i.e.* black) and then with peak white,

an indication of the amount of sync. distortion may be obtained.

Spike Generator Type 1879

The output of this generator, when displayed on a monitor, takes the form of a thin white vertical line, which is variable in position about the centre of the tube. Sync. may be added to the waveform if required. Spike and sync. amplitudes can be adjusted independently and the spike width is variable between 1.3 and 2.4 μs .

The waveform is used to check the phase and frequency response of a system. Poor response shows up as ringing after the edges (*i.e.* production of fine black lines after the black-to-white transition or white lines after the reverse transition) or blurred edges, indicating slow rise times.

DATA SUMMARY

	Type 1877	Type 1878	Type 1879	Type 1880
Inputs, bridged: (at standard level)	Mains 22 VA 80 mA at 250 V DC Blanking Sync.	Mains 35 VA 170 mA at 250 V DC Line drive Field drive Blanking Sync.	Mains 22 VA 110 mA at 250 V DC Blanking Sync.	Mains 16.5 VA 55 mA at 250 V DC Blanking Sync.
Output, composite or non-composite: (at standard level)	Sawtooth waveform	Cruciform waveform	Spike waveform	Peak white or black signal
Performance:				
Transitions	Sync. 0.1 μs Sawtooth, 0.15 μs at minimum amplitude 0.35 μs at maximum amplitude	Pulses, 0.1 μs vertical bar, 0.3 μs horizontal bar	0.1 μs	—
Overshoot	Negligible	Negligible	Negligible	—
Non-linearity	$\geq 0.5\%$	—	—	—
Sync. compression	—	—	—	$\pm 0.25\%$
HF response	—	—	—	-3 dB at 12 Mc/s relative to general response
Dimensions:				
Height	3½ in. (9 cm)	3½ in. (9 cm)	3½ in. (9 cm)	3½ in. (9 cm)
Width	19 in. (48 cm)	19 in. (48 cm)	19 in. (48 cm)	19 in. (48 cm)
Depth	11 in. (28 cm)	11 in. (28 cm)	11 in. (28 cm)	11 in. (28 cm)
Weight	8 lb (3.6 kg)	9½ lb (4.3 kg)	10 lb (4.5 kg)	8 lb (3.6 kg)

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