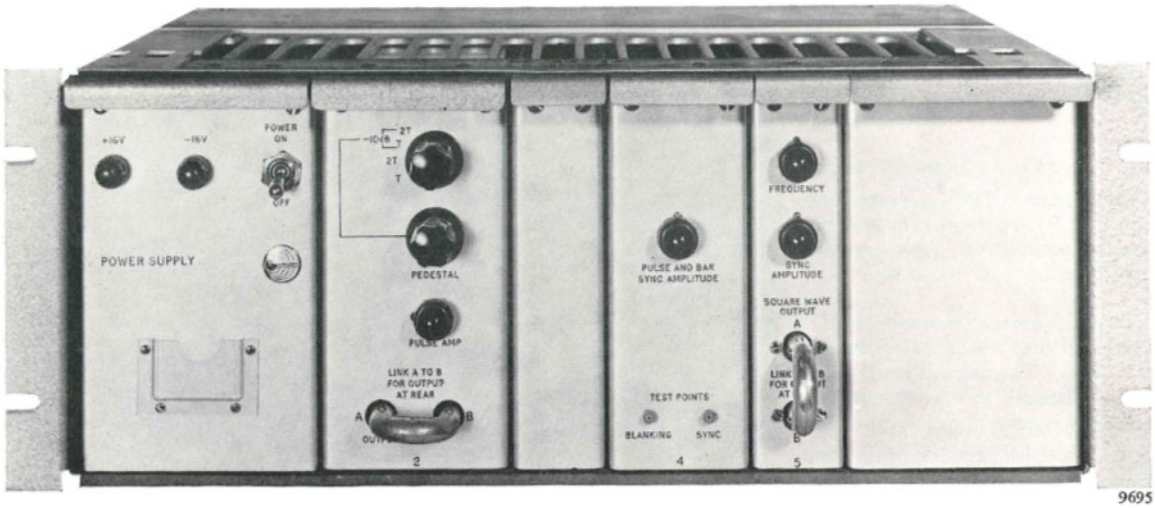
Sine-squared Pulse and Bar Generator
Type B 4108 (BD 939)



9695

THIS is a new, transistorized generator, for testing circuits carrying television signals over long distances. It produces the waveform known to the British General Post Office as 'Pulse and Bar', and otherwise as 'C.M.T.T Test Signal No.2'.

Features

Suitable for portable as well as studio use.

Suitable for 625-line standards as recommended by the C.C.I.R and European authorities.

50 c/s square-wave output also available (C.M.T.T Test Signal No.1).

Pulse and bar very accurately timed with respect to the synchronizing pulse, thereby minimizing 'jitter'.

An edition providing facilities for testing colour links will shortly be available.

CONSTRUCTION

The unit is built in modular form, comprising several modules which plug into a common frame 7 in. (17·8 cm) in height. The frame in turn fits into a standard 19 in. (48 cm) rack cabinet. For mobile applications a carrying case is provided into which the standard rack-mounting unit can be inserted. In the mobile edition provision is made to bring the output socket on to the front panel when access to the back is restricted. The finish is standard Marconi grey oyster-hammer enamel.

CIRCUIT

The unit is provided with an internally generated line frequency oscillator. In this free-running operation the output is a sine-squared pulse and bar output on all lines. Provision is also made for inserting a standard television synchronizing waveform so that the output synchronizing waveform confirms to a standard 625-line C.C.I.R signal. It should be noted that, with the internally generated line-frequency condition, no field component is provided and the waveform does not include a front porch.

The circuit used to ensure stability of the pulse and bar waveform is an exclusive Marconi design. Experienced users of the pulse and bar technique of testing will know that jitter can be a problem. The jitter performance of the B 4108 is better than one part in 50,000 with reference to the front edge of the synchronizing pulse.

A second edition will shortly be available the output of which is a pulse and bar waveform suitable for checking distortion of colour links and video circuits.

Data Summary

Variation in amplitude of pulse and bar:
Variation between the amplitude of the pulse and of the bar will be not more than $\frac{1}{2}$%.

Overall output level:
Nominal output level of both T pulse and 2T pulse 0·7 V p-p. In addition, provision is made to increase the standard output by +3 dB.

Synchronizing pulse rise times:
0·2–0·25 μs.

Stability:
The stability referred to in the text can be expected after the unit has been running for 10 minutes, and can be maintained over a variation in temperature of 10°C.

Flatness of bar top:
Within ±2% on a 40 μs bar, flatness measured between 1–39 μs.

Overshoot on 0·1 μs pulse:
First overshoot 2 to 2·5% on a standard T pulse. Second overshoot 0·3 to 0·35%.

Tilt on 50 c/s square wave:
Not more than $\frac{1}{2}$%.

Mains supply:
100–125 V and 200–250 V in 5 V steps, 50 or 60 c/s, single-phase.

Batteries supply:
2 independent 24 V batteries. Voltage range, 21·8 V–29 V.

Dimensions: (approx.)

Height	Width	Depth	Weight
7 in. (17·8 cm)	19 in. (48 cm)	11 in. (28 cm)	20 lb. (9 kg)

Marconi

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