

SECTION 43

AUGMENTED PULSE AND BAR GENERATORS GE2M/543 AND GE2M/543A

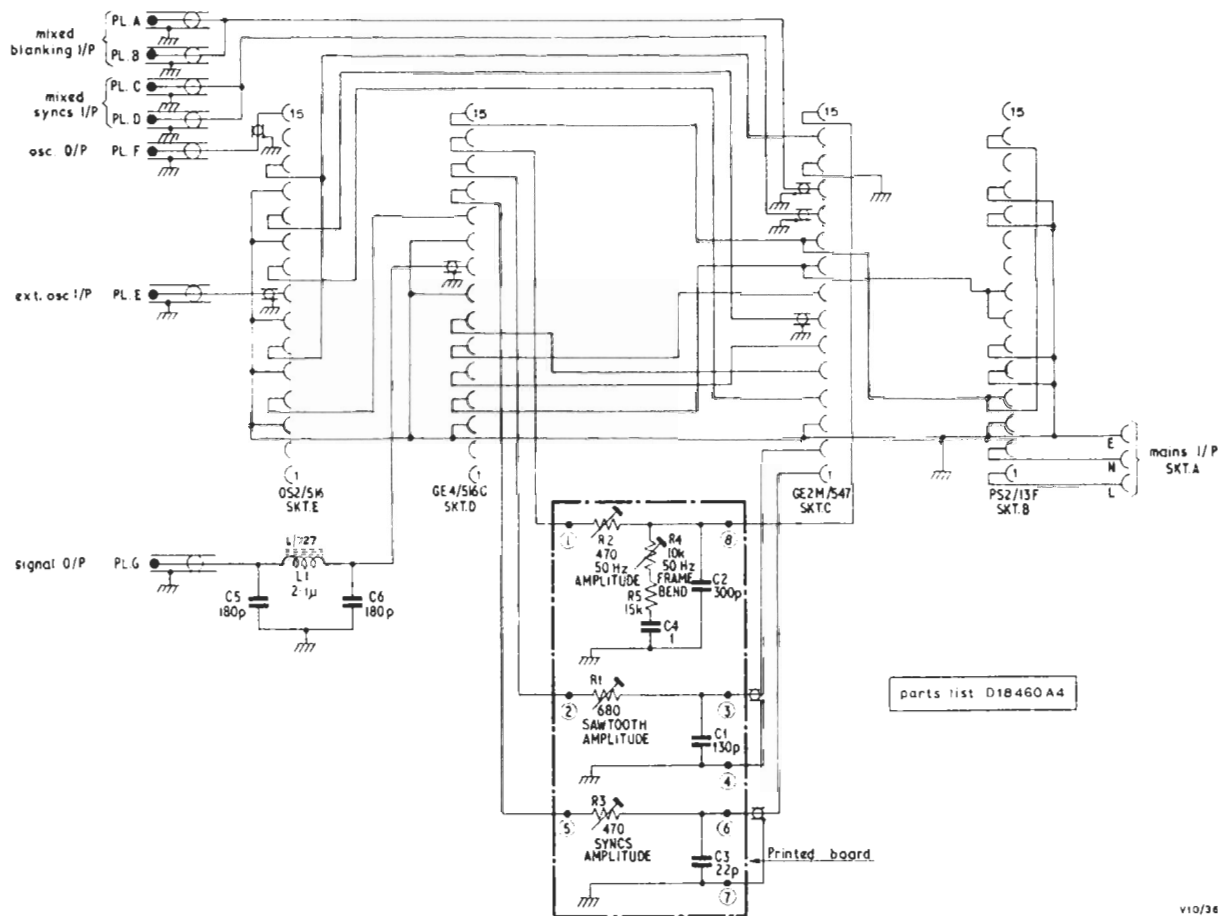


Fig. 43.1 Circuit of the GE2M/543

Introduction

These units generate test waveforms which can be used to measure the linear transmission characteristics, both monochrome and colour, of television links and apparatus which operate on the 625-line standard with (if colour) a sub-carrier frequency of 4.43 MHz. The only difference between the two units is in the type of signal connector used; in the GE2M/543 the connectors are Musa, in the GE2M/543A they are B.N.C.

The waveforms generated are:

- (a) A line-frequency waveform which contains monochrome pulse-and-bar components and a chrominance pulse

- (b) A line-frequency sawtooth waveform
- (c) A 50-Hz waveform
- (d) A 4.43 MHz sine wave

The chrominance pulse is produced by modulating a 4.43 MHz sine wave with a sine-squared pulse which has a half-amplitude duration of $1 \mu\text{s}$ and adding it to the modulating signal. The 50-Hz waveform consists of line-sync pulses and a 50- μs line bar which is switched alternately on and off at 10-ms intervals. Outputs (a), (b) and (c) are selected by means of a switch on the front panel of the GE2M/547 sub-unit. Output (d) is a subsidiary output of an OS2/516 sub-unit.

The output signal can be a free-running line-

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repetitive waveform or it can be locked to field frequency. To lock the output to field frequency, inputs of mixed-sync and mixed-blanking pulses are required. Provision is also made to feed the unit with an externally generated 4.43-MHz waveform; this can be used in place of the internally generated 4.43-MHz waveform if required. A circuit of the parent unit is shown in Fig. 43.1 and a block diagram showing signal interconnections between sub-units is given in Fig. 43.2.

The generator consists of the following plug-in sub units, described in the Instructions indicated, mounted on a CH1/33 chassis:

- Pulse-and-bar Generator GE4/516C (V.10)
- Auxiliary Waveform and Timing Pulse Generator GE2M/547 (V.10)
- Modulated Pulse Generator OS2/516 (V.9)
- Stabilised Power Supplier PS2/13F (G.2)

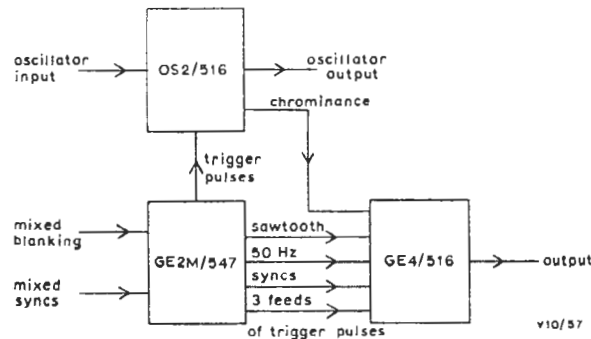


Fig. 43.2 Block Diagram of the GE2M/543

For applications, such as site testing, where a mains supply may not be available, a PS2/48 mains/battery power supplier can be used as a plug-in alternative to the PS2/13F. For portable use the generator should be installed in a carrying case type CS2/11A.

General Specification

<i>Output</i>	1 volt p-p at 75 ohms
<i>Inputs</i>	
Mixed sync	2 volts p-p (high impedance)
Mixed blanking	2 volts p-p (high impedance)
External sub-carrier	1 volt p-p
<i>Temperature range</i>	5°C to 45°C
<i>Mains input</i>	210 to 260 volts
<i>Power consumption</i>	8 watts
<i>Weight</i>	
	14 lb. (without case)
	25 lb. (with case)
<i>Dimensions</i>	
	10.5 × 5 × 14 in. (without case)
	11 × 7.5 × 14.5 in. (with case)

Reference

1. BBC Monograph No. 58.

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