

SECTION 22

PEAK-WHITE BAR GENERATOR GE2/522

Introduction

This unit accepts feeds of mixed blanking, line-frequency gating pulses and line-frequency triggering pulses.¹ It provides a white-level bar output waveform together with associated extra-blanking pulses.²

The bar waveform generating circuit is triggered from the trailing edges of the mixed blanking pulses and, as a result of this, an unwanted white-level pulse is produced halfway through a line by the field-blanking pulse at the end of each odd field. This unwanted half-line pulse is removed by the externally-generated gating pulses.

The generator requires an external power supply of -9 volts. It is mounted on a chassis type CH1/12A with index-peg positions 1 and 25.

Circuit Description

The unit consists of two monostable multivibrator circuits (see Television Engineering, Volume 3) and a half-line gating circuit; one multivibrator produces the white-level bar waveform and the other produces the extra-blanking pulses. A circuit diagram of the unit is shown in Fig. 22.1.

The waveform generator circuit is formed by transistors TR6 and TR7, and timing network C10 and R20; diodes D5 and D6 improve the rise-time of the output. In the stable state TR6 is conducting and TR7 is cut-off. Mixed-blanking triggering pulses are fed via an input stage TR5. The output is taken from the collector of TR7 and consists of positive-going pulses which occur approximately 1.5 microseconds after the trailing edges of the blanking pulses. These pulses are taken via an amplifier stage TR8 to the half-line pulse gating circuit which comprises TR10, TR11, D7, D8 and zener diode D9. The collector of TR11 is connected to the collector of TR10, and to its own collector load R33 via diode D7. D9 sets the potential of TR11 collector supply.

In the absence of blanking pulses, TR10 is cut

off. TR11 is conducting, and the bar waveform appears at the junction of D7 and R33. Application of a blanking pulse drives TR10 into conduction with the result that the collector of TR11 is driven negative. When this potential falls below the level determined by D9, diode D7 is cut off and the bar waveform is therefore removed from the junction of D7 and R33. The timing of the gating waveform is such that D7 is cut off only during the period in which an unwanted half-line pulse may be present. Diode D8 acts as a catcher which limits the potential of TR10 collector and thereby reduces to a minimum the time required to drive D7 back into conduction at the end of a half-line gating pulse.

The negative-going output pulses from the gating circuit are passed via an amplifier stage TR12 and clipper diode D10 to an emitter follower output stage TR13. Diode D11 removes unwanted negative-going spikes.

The extra-blanking generator circuit comprises transistors TR2 and TR3 and timing network C5 and R7. The circuit is triggered from the leading edges of the input triggering pulses fed via TR1 and a differentiating circuit C2, R3. Diode D1 removes spikes produced by the trailing edges of the triggering pulses. The output from the multivibrator consists of negative-going pulses timed so that their leading edges occur before the leading edges of the bar waveform and their trailing edges occur after the trailing edges of the bar.

A switch SA permits both the waveform generator circuit and the extra-blanking generator circuits to be disabled. Contacts SA2 remove the trigger input to TR5; contacts SA1 short-circuit the trigger input to TR2.

References to Typical Associated Equipment

1. Camera Drive Generator GE2/523.
2. Video Tape Recorder Identifying Unit EP1/502, Instruction V.15

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See overleaf for Fig. 22.1

22.2

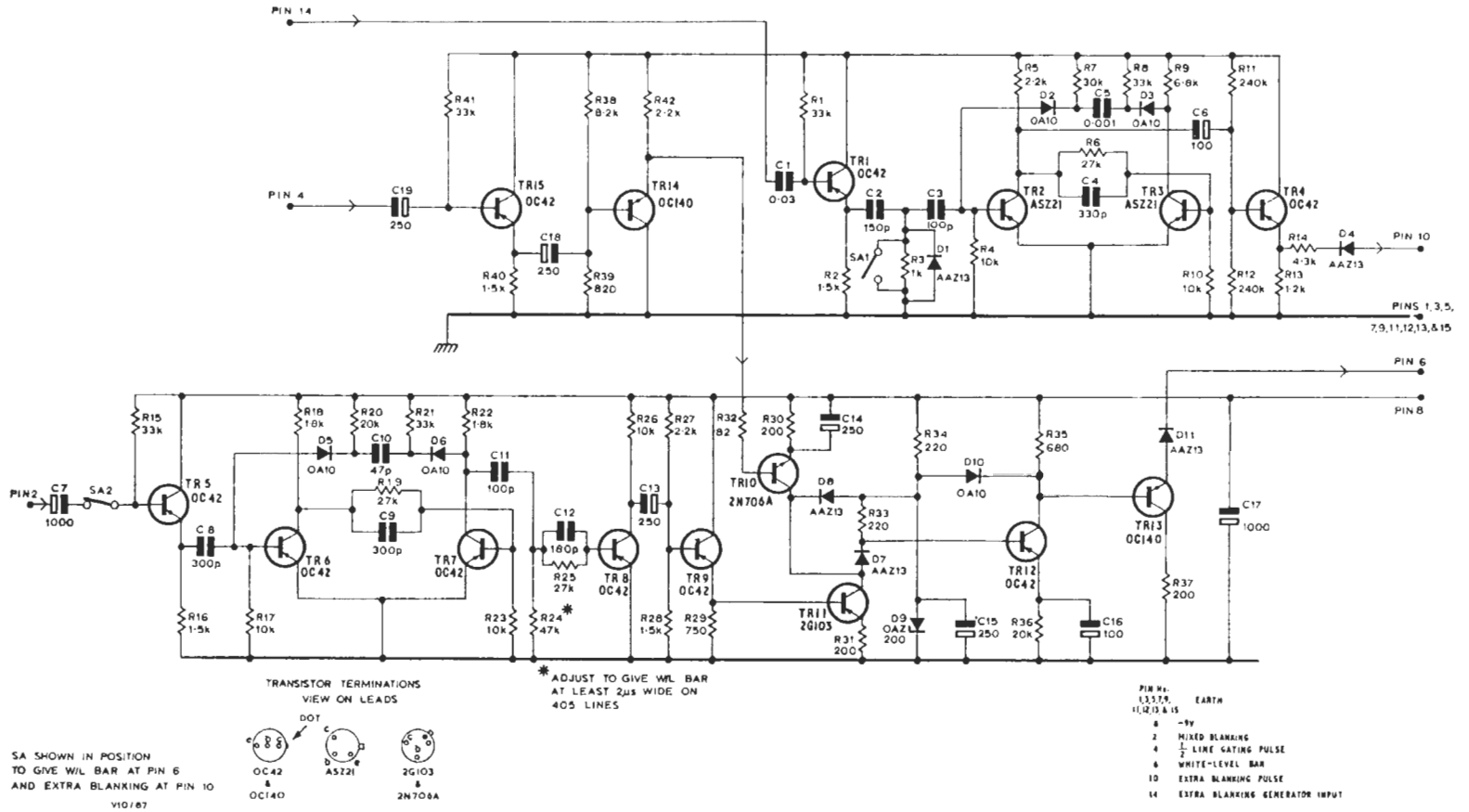


Fig. 22.1 Circuit of the GE2/522