

SECTION 36

MIXED BLANKING GENERATOR GE2/536

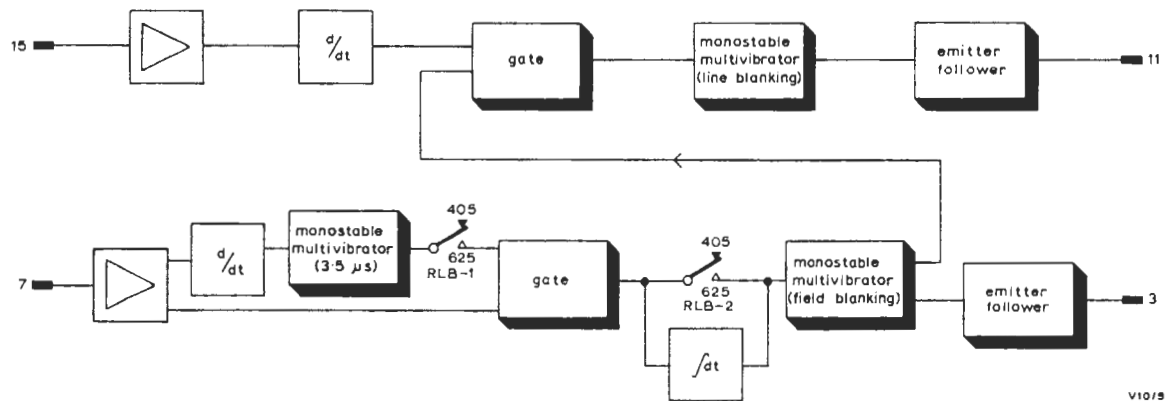


Fig. 36.1 Block Diagram of the GE2/536

Introduction

The GE2/536 accepts two inputs of mixed sync pulses on the same line standard and produces outputs of pseudo mixed blanking and pseudo field blanking.

The line component of the pseudo mixed blanking waveform is derived from the leading edges of the line sync pulses of one of the inputs. The pseudo field blanking pulse is derived from either the first equalising pulse or the first broad pulse of the other input.

The GE2/536 is constructed on a CH1/12A chassis with index peg positions 14 and 15.

General Description

A block diagram of the GE2/536 is shown in Fig. 36.1. In use in a Vertical Aperture Corrector EP1/504, input A is delayed with respect to input B by approximately the duration of one line.

Input B is amplified and clipped to produce two positive-going outputs. On the 625-line standard, one of these outputs is used to trigger an emitter-coupled monostable multivibrator. The output of this multivibrator is a negative-going pulse of 3.5 μs duration triggered by the leading edges of the input sync pulses. These negative-going pulses and the positive-going mixed sync pulses are fed to a gate. The output of the gate is a series of short pulses each of which occurs after an equalising

pulse. These short pulses trigger a field-blanking monostable multivibrator via contact RLB-2.

On the 405-line standard, contact RLB-1 is open and the 3.5 μs pulses are not fed to the gate. The output of the gate is a negative-going mixed sync waveform. This waveform is fed to an integrating circuit which produces a trigger pulse for the field blanking monostable multivibrator.

The line blanking pulses are derived from input A. The differentiated mixed sync waveform is used to trigger a line blanking monostable multivibrator via a gate circuit. The gate circuit is also fed with the output of the field blanking monostable multivibrator to provide the field component in the mixed blanking output.

Circuit Description

The circuit of the GE2/536, shown in Fig. 36.2, is of conventional design and its operation is covered in the General Description except for the following two points:

(a) Relay circuit

Relay RLA switches the necessary time constants between those for the 405-line standard and those for the 625-line standard. Relay RLB switches the field blanking monostable multivibrator between triggering on equalising pulses and triggering on broad pulses.

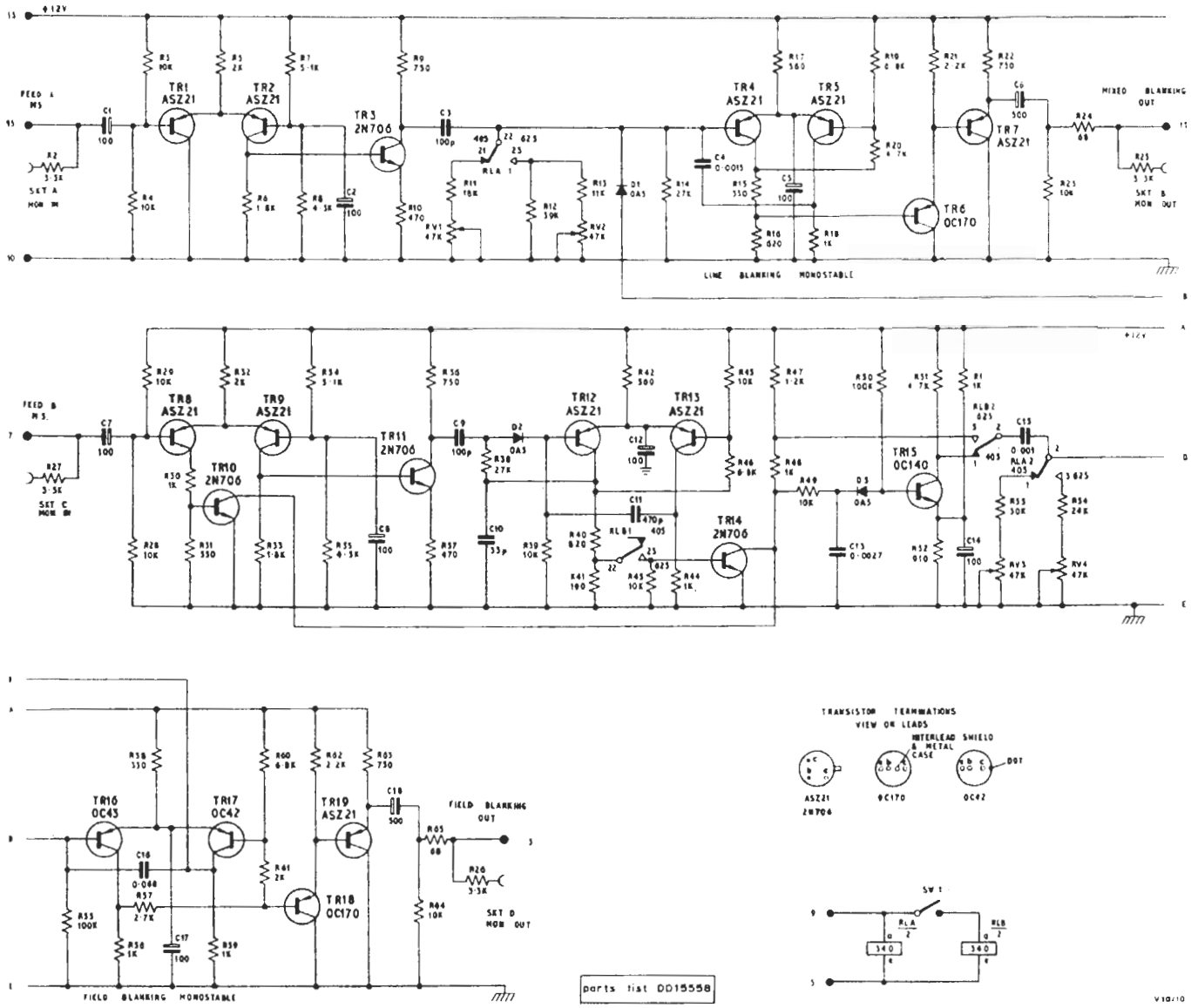


Fig. 36.2 Circuit of the GE2/536

36.3

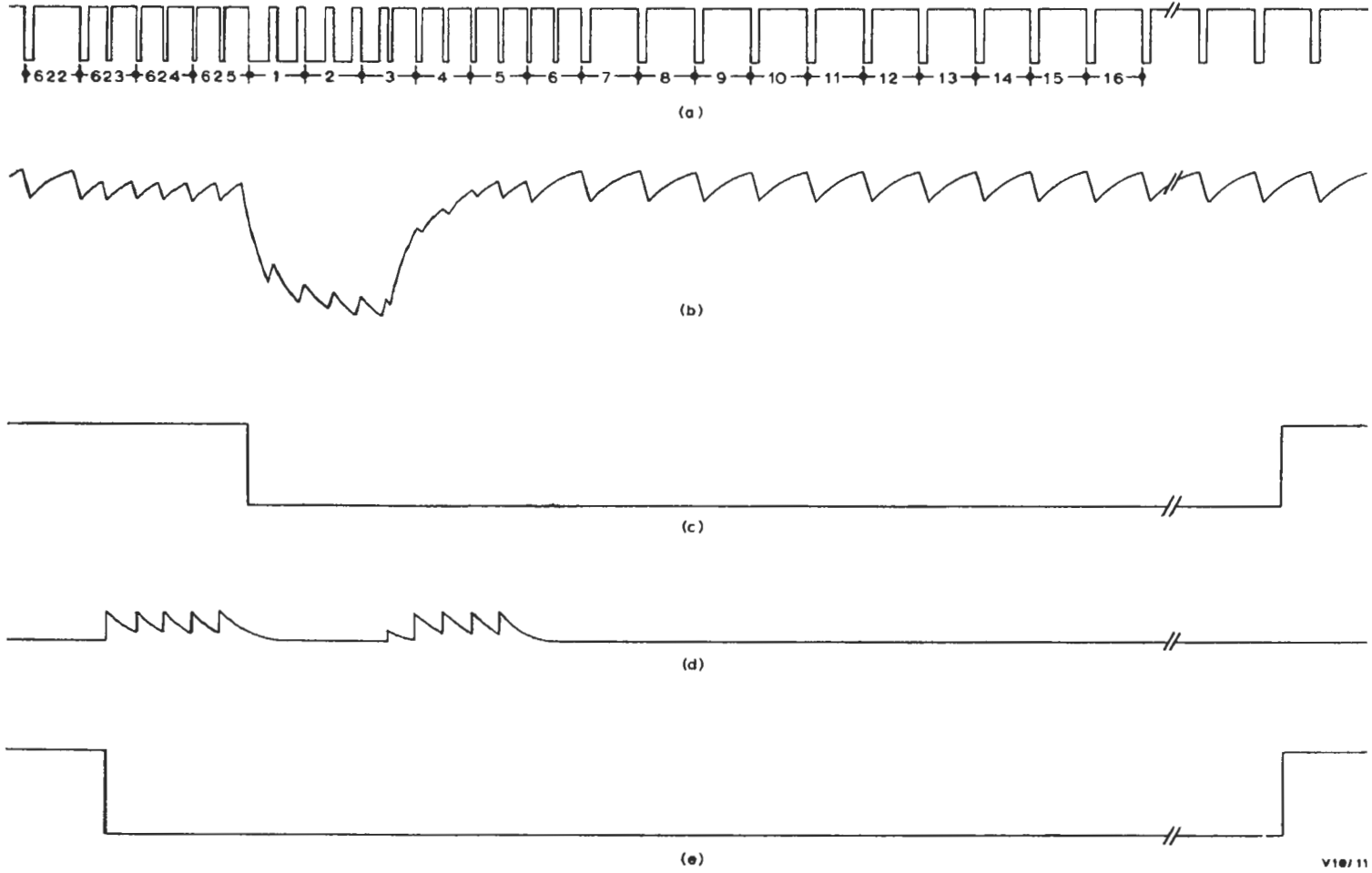


Fig. 36.3 Waveforms in the GE2/536

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(b) Mixed blanking gate

The line-blanking monostable multivibrator is triggered by positive-going pulses fed via capacitor C3. A positive voltage fed via diode D1 inhibits the action of the multivibrator and holds it in its unstable state.

Fig. 36.3 shows some of the waveforms found in the GE2/536.

Test Schedule

Apparatus Required

Tektronix oscilloscope Type 533A with Type CA plug-in unit.

12-volt power supply.

Feeds of 405-line and 625-line mixed sync pulses.

Two 75-ohm resistors.

Test Procedure

1. Strap together pins 7 and 15.
 Strap together pins 9 and 10.
 Connect pin 5 to pin 13 via an on/off switch.
 Terminate both outputs in 75 ohms.
 Connect the 12-volt supply as shown in Fig. 36.2.
2. Feed 405-line mixed sync pulses to the unit and switch off the on/off switch.
 Check the available ranges of the blanking pulse durations. They should be:
 line blanking 13-20 μ s (RV1)
 field blanking 1.2-1.8 ms (RV3).
3. Replace the input with the feed of 625-line mixed sync pulses and switch on the on/off switch.
 Check the available ranges of the blanking pulse durations which should be:
 line blanking 8-12 μ s (RV2)
 field blanking 1.0-1.6 ms (RV4).
4. Observe simultaneously the mixed-sync input waveform and the field-blanking output waveform.
 Check that the start of the field pulse occurs at

the time indicated by the switch on the unit; either at the middle of the first broad pulse or at the end of the first equalising pulse.

Further Information

Table 1 gives typical transistor terminal voltages measured with an Avometer Model 8.

TABLE 1

| Transistor | Voltage with respect to earth | | |
|------------|-------------------------------|------|---------|
| | Collector | Base | Emitter |
| TR1 | 0 | 6 | 5.7 |
| TR2 | 4.7 | 5.5 | 5.7 |
| TR3 | 5.5 | 4.7 | 4.0 |
| TR4 | 7.0 | 7.0 | 7.3 |
| TR5 | 0 | 9.0 | 7.3 |
| TR6 | 0 | 4.5 | 4.8 |
| TR7 | 0 | 4.8 | 5.1 |
| TR8 | 0 | 6 | 5.7 |
| TR9 | 4.7 | 5.5 | 5.7 |
| TR10 | 12 | 0 | 0 |
| TR11 | 5.5 | 4.7 | 4.0 |
| TR12 | 7.0 | 7.0 | 7.2 |
| TR13 | 0 | 8.7 | 7.2 |
| TR14 | 12 | 0 | 0 |
| TR15 | 6 | 6.2 | 6 |
| TR16 | 8.4 | 8.2 | 8.5 |
| TR17 | 0 | 9 | 8.5 |
| TR18 | 0 | 9 | 9.2 |
| TR19 | 0 | 9.2 | 9.5 |

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