AUTOMATIC MONITOR MN2/509

Introduction

The MN2/509 examines an input video waveform to determine whether or not a test line signal is present on a selected line.

The monitor requires 3 inputs: composite video, the test line signal and a negative going pulse occurring once per field at the start of the selected line. The output signal, when present, is a negative going pulse corresponding to the input pulse.

If the test line signal is absent from the selected line of the input video signal, the monitor passes the negative pulse to associated apparatus[1] and initiates the generation of a test signal. If the test signal is present then the negative going output pulse is inhibited and the generation of a second test signal is prevented.

The monitor is built on a CH1/12A chassis with index pegs 2 and 32. It requires external d.c. supplies at +12V and −12V and operates satisfactorily within the temperature range 5 °C to 45 °C.

General Description

The monitor has three modes of operation controlled by a switch on the front panel. The three modes are:

(a) *Monitor on*, the output pulse is produced unless the test line signal is present on the selected line of the incoming video signal.

(b) *Monitor off*, the negative input pulse is passed direct to the output.

(c) *Test line signal off*, when there is no output from the monitor.

Circuit Description

The circuit diagram is given in Fig. 1 on page 3.

With the mode switch in the *Monitor On* position, the negative input pulse is regenerated by the monostable multivibrator TR18/TR19. The input pulse also initiates the generation of a gating pulse, delayed by about 18μs, which opens the test-line-signal gate TR5/TR6. If a test signal is present, the gated waveform triggers the monostable multivibrator TR8/TR9, TR21 is cut off and negative pulses are not passed to the output.

If a test line signal is not present on the selected line, TR8/TR9 is not triggered and the pulse from TR18/TR19 passes to the output via TR21.

When the monitor is used as part of the GE4M/518A, an unwanted low-level test line signal appears at input terminal 5. To avoid interference with the operation of the monitor, this signal is cancelled by injecting a corresponding, but inverted, signal at the base of TR5. The level of the injected signal is adjusted by R16.

References

1. Test Line Signal Generator and Inserter GE4M/518A.
2. Designs Department Specification No.9.104(68)

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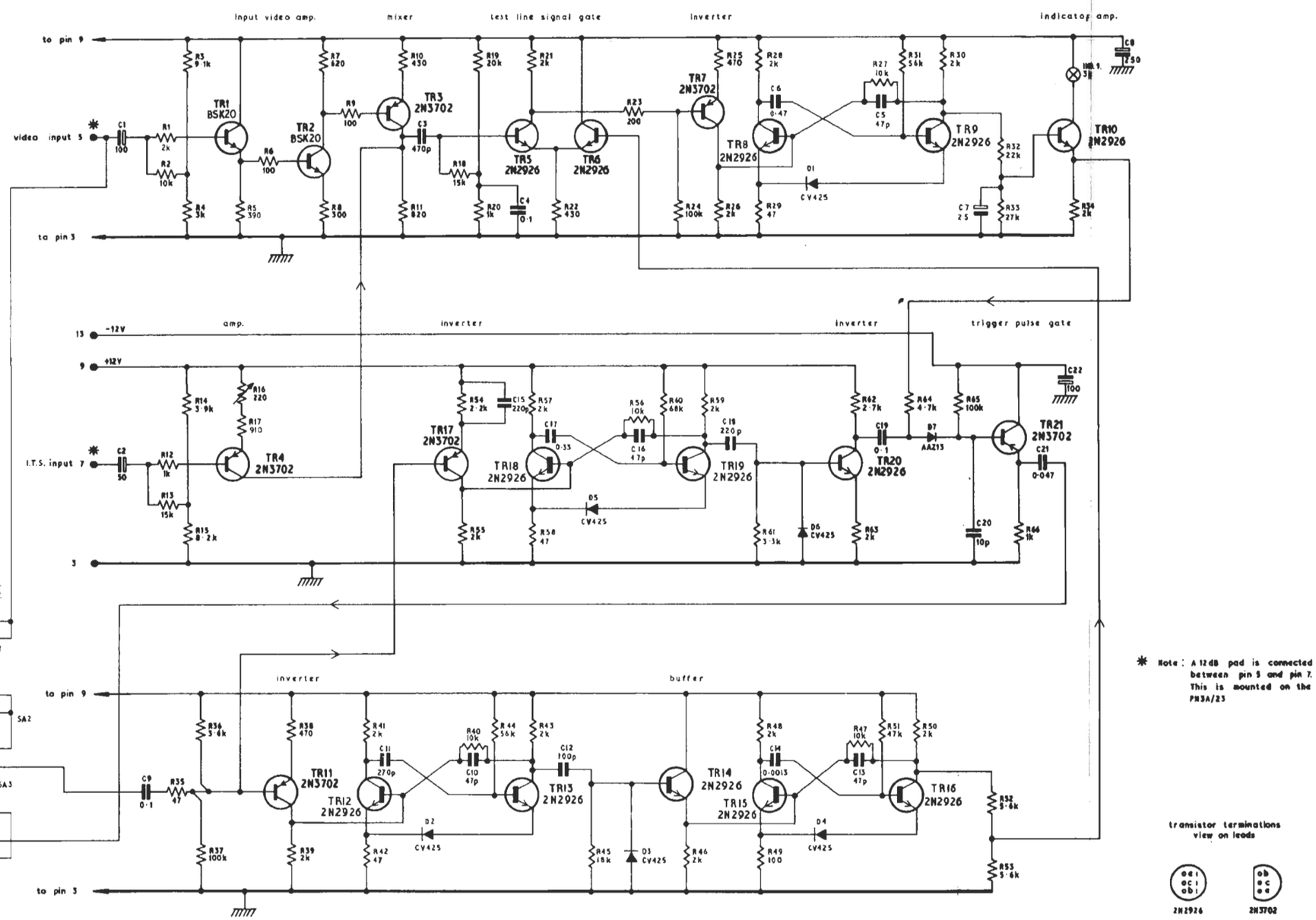

Fig. 1 Circuit of the Automatic Monitor MN2/509