

SYNC PULSE SLICER CO4/502

Introduction

The CO4/502 is a sync pulse slicer. It accepts a clamped composite video signal, colour or monochrome, and cuts a slice from the sync pulses at about half amplitude level. The resultant pulse is amplified and used to produce positive-going or negative-going output pulses.

The unit forms part of the AM18/504 Stabilising Amplifier and includes the clamp cut-out switch. It is built on to a CH1/12A chassis with index pegs 1 and 16.

General Specification

Signal Input
(Composite Video) 4 V p-p

Input Impedance 1.5 kilohms nominal

Signal Output

(Coincident with input syncs) $\pm 2.5 \pm 0.5$ V p-p pulses

Power Consumption 40 mA at +12 V
15 mA at +4 V
45 mA at -4 V

Maximum Ambient Temperature 40°C

Weight 1 lb

Circuit Description

The circuit diagram is given in Fig. 1. The back porch of the video signal from the preceding associated unit² is clamped to 0 volts.

The diodes D1 and D2 strip the picture components from the signal and the subcarrier is suppressed by the hand-stop filter L1, C1, C2 and C3. D3 is biased by RV1 so that it conducts only for that

part of the sync pulses which is more negative than about 40% of the normal amplitude. Emitter follower TR1 passes the sliced syncs via the Features Stabilised switch SA, to the feedback pair TR2, TR3 which has a voltage gain of about 15. The amplified pulses are clipped at top and bottom (sliced) by diodes D4 and D5 with the result that, at the emitter of TR4, each pulse is a slice from the upper part of the pulses at the emitter of TR3. The emitter coupled pair TR6, TR7, feeds antiphase pulses to the output. The network D6, C12 and R30 slows down the leading edge of the pulses to give a satisfactory leading edge to the stabilised syncs at the output of the parent unit.

R25 and R27, when switched into circuit by SA, provide potentials to hold a sync-stabilising bridge in an associated unit³ in the non-conductive state thus inhibiting the stabilising action.

The Features Stabilised switch which is mounted on the front panel, provides three facilities: in position 1 the input signal to the parent unit is passed direct to the output; in positions 2 and 3 the back porch is clamped and, additionally in position 3, the sync pulse amplitude is stabilised.

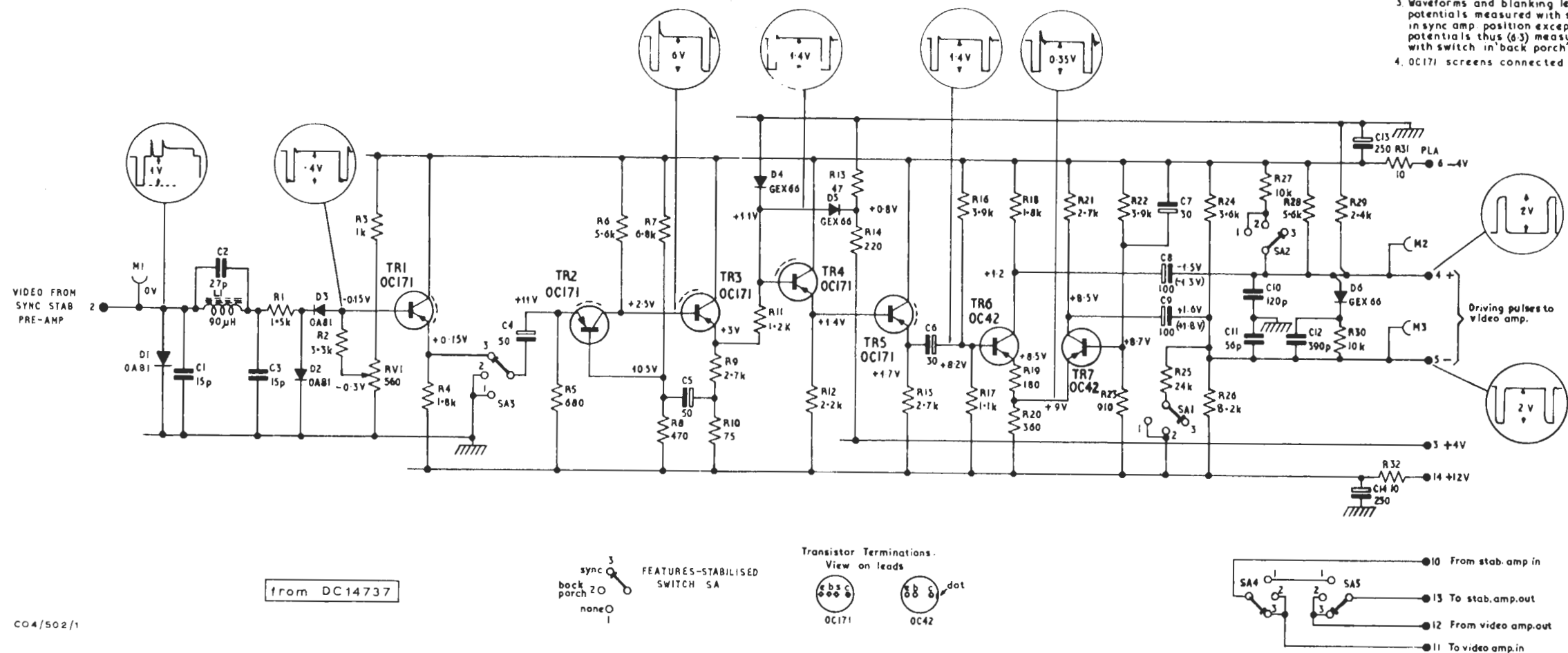
Maintenance

Routine maintenance is not required and there are no controls requiring adjustment.

References

1. Designs Department Specification No.6.99(64)
2. UN13/501 Sync Stabiliser Pre-amplifier
3. AM18/506 Video Amplifier

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Note 1. Waveforms and blanking level potentials measured with high impedance oscilloscope.
2. Input signal 4V p-p 625 line 2T pulse and bar fed through 1.5k Ω resistor to pin 2 of PLA.
3. Waveforms and blanking level potentials measured with switch in sync amp position except potentials thus (6.3) measured with switch in 'back porch' position.
4. OC171 screens connected to earth

Fig.1 CO4/502: Circuit Diagram