

## VIDEO AMPLIFIER AM1/551

### Introduction

This unit contains a phase-shifting amplifier, an isolating amplifier, a trigger circuit and an integral mains-driven power supply.

The phase-shifting amplifier accepts a low-level colour video signal<sup>1</sup> and provides a 1-volt p-p colour-video output signal<sup>2</sup>. The isolating amplifier accepts a colour synchronising signal<sup>3</sup> (mixed-syncs and sub-carrier burst) and provides a colour synchronising output signal<sup>2</sup>.

The trigger circuit accepts a d.c. input and provides a d.c. output. The power supplier provides a +12 volt output which powers the AM1/551 and associated units.

The unit is constructed on a CH1/12A chassis with index-peg positions 7 and 40. *Input* and *Output* monitor sockets for the video signal are mounted on the front panel of the unit, together with a mains-indicator lamp. Mains fuses (100 mA) are mounted on the rear panel.

### General Specification

#### Phase Shifting Amplifier

Signal input (comp. video)	about -12 dB (w.r.t. 1-volt p-p)
Signal output (comp. video)	1 V p-p
Input impedance	1 kilohm
Output impedance	75 ohms

#### Isolating Amplifier

Signal input (colour syncs)	0.45 V p-p
Signal output (colour syncs)	0.45 V p-p
Input impedance	about 3 kilohms
Output impedance	75 ohms

#### Power supplier

Mains input	200-250 V, 50 Hz
Output	+12 V, 350 mA

*Operating Temperature* 0-45°

### Circuit Description

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

#### Phase Shift Amplifier

Video input signals are applied, via emitter-follower TR1, to the common-base stage TR2. Inductor L7 in the input circuit compensates for the losses caused by the switching system which precedes the amplifier. The signals are then applied via a three-stage feedback amplifier to a delay network which gives the required phase shift.

#### Isolating Amplifier

This 0-dB gain amplifier consists of two common-emitter stages in cascade. Feedback is applied from the collector of output stage TR6 to the emitter of TR5 via L5, R22 and R21.

The high-frequency response of TR6 is controlled by capacitor C10. Resistor R23 increases the output impedance to 75 ohms.

#### Trigger Circuit

Normally the emitter of TR11 is positive with respect to the base and the transistor is cut off. However, if more than one diode switch in the associated UN9/510 unit<sup>1</sup> is in the *On* condition the *Catch* input is connected to earth through a low impedance, and TR11 conducts. The negative-going potential at the collector of TR11 is fed to inverter stage TR12 and the resulting positive-going pulse is applied to the *Latch* circuit of the UN9/510 unit.

#### Power Supplier

Stabilised power supplies at +12 volts are obtained from a conventional regulator circuit which comprises transistors TR7 to TR10. The zener diode and resistor connected in series between the collector and emitter of TR9 provide continuity, at the moment of switching on, between the negative side of the bridge rectifier and the earth line.

### References to Typical Associated Equipment

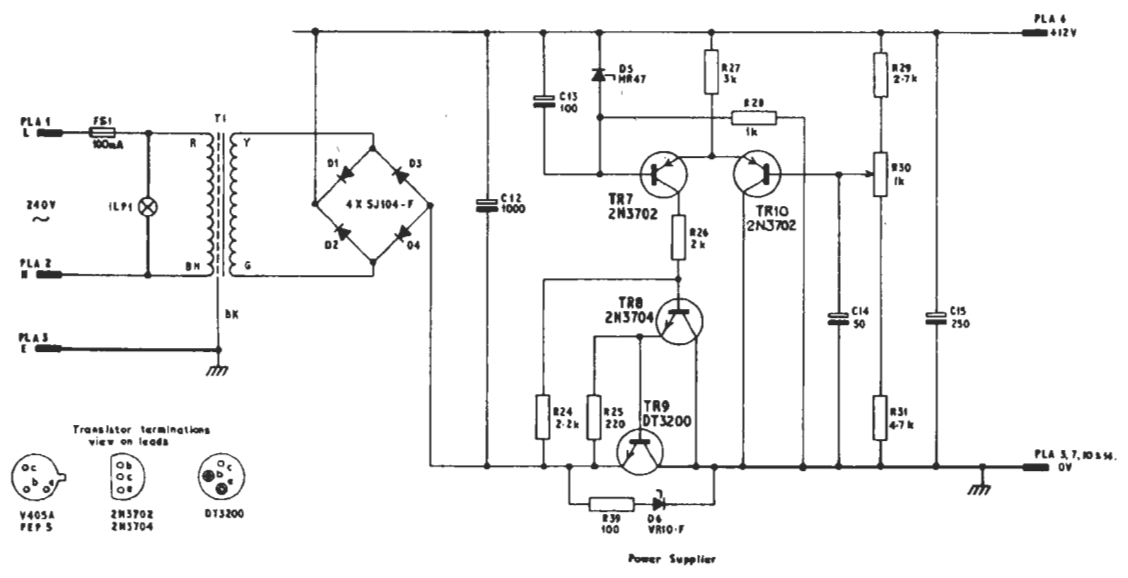
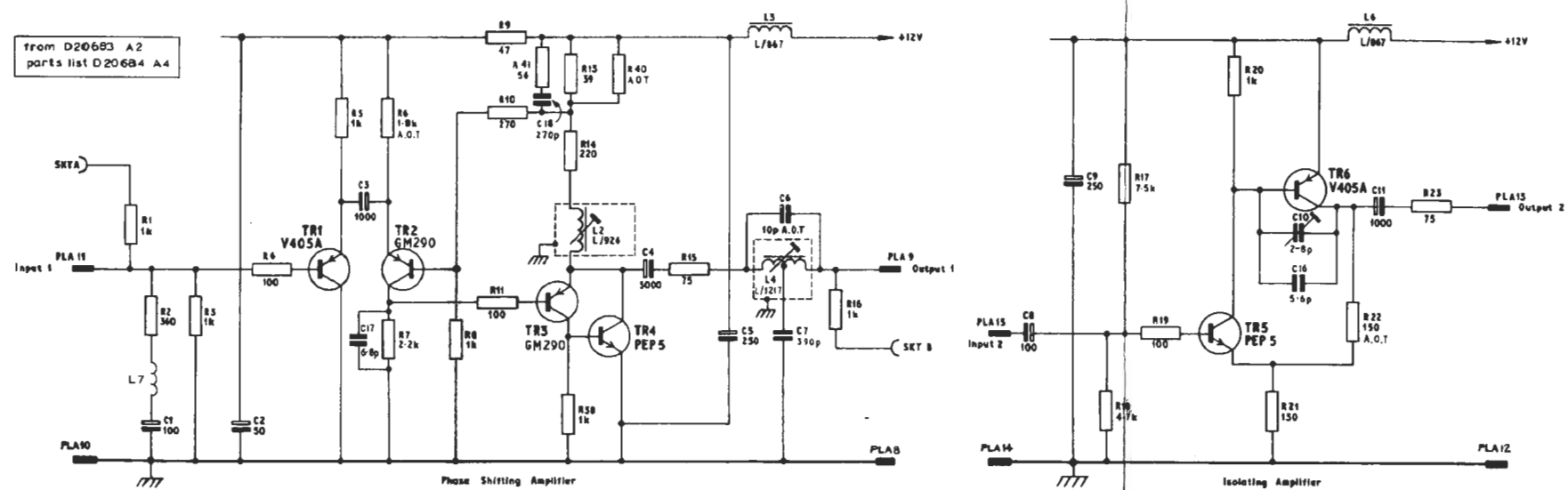
1. Three-channel Switch Unit UN9/510.
2. Video Switching Panels PA18M/513 and PA18M/514.
3. Colour Black Level Generator GE6/504.

TES 11/67

July 1970

3

AMI/551



AMI/551

3

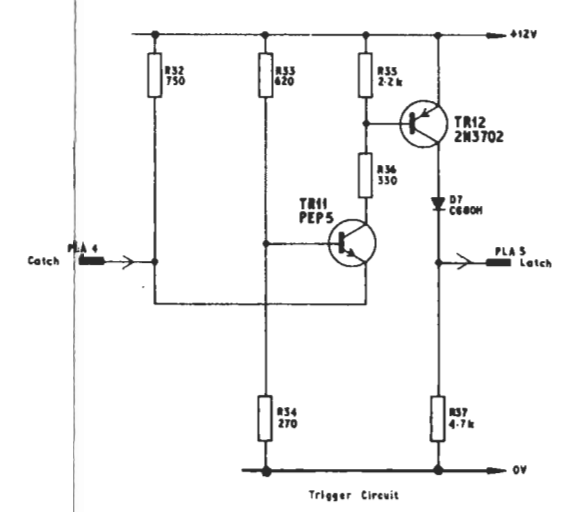


Fig. 1 Circuit of the AMI/551