

SECTION 7

STUDIO VIDEO MIXER MX1/503

Introduction

The MX1/503 is an 8-channel remotely-controlled video mixing unit which incorporates also a similar 3-channel mixing unit intended for use as a group mixer. It provides:

- (a) mix, cut and fade facilities between composite signals applied to the eight inputs
- (b) mix, cut and fade facilities between inputs A and B of the group mixer
- (c) cut facilities between the C input of the group mixer and either of the other two.

The mixer will accept either synchronous or non-synchronous signals and will handle encoded colour signals. See also EP5/502, Instruction V.15 and MX6/501 in the previous Section.

The MX1/503 uses 11 Cut-fade amplifiers AM1/508 which, in groups of 8 and 3, feed into Mixing Amplifiers AM1/510; see Instruction V.7. Power

supplies are provided by integral units in the mixing amplifiers and also by a Power Supplier PS2/505 (Instruction G.2.). The 14 sub-units plug into a double panel PN3/23.

The mixer is controlled remotely by means of the following desk panels:

- Mixer Fade Desk Panel PA8/503
- Mixer Cut Desk Panel PA8/504
- Group Mixer Desk Panel PA8/506

These panels exercise control through the following control panels:

- 8-channel Mixer Control Panel PA6/509
- Group Mixer Control Panel PA6/510

All these panels are described in Instruction V.13.

General Description

A simplified block diagram of the MX1/503 is shown in Fig. 7.1 and wiring external to the sub-

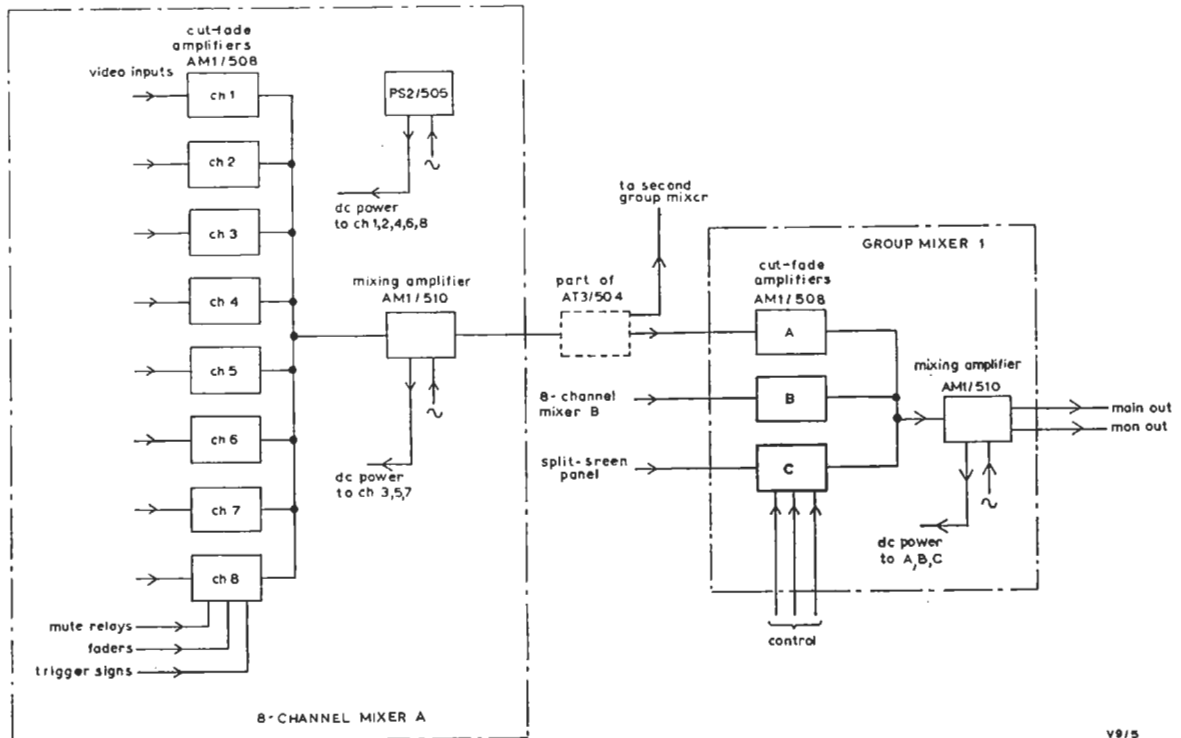


Fig. 7.1 Simplified Block Diagram of the MX1/503

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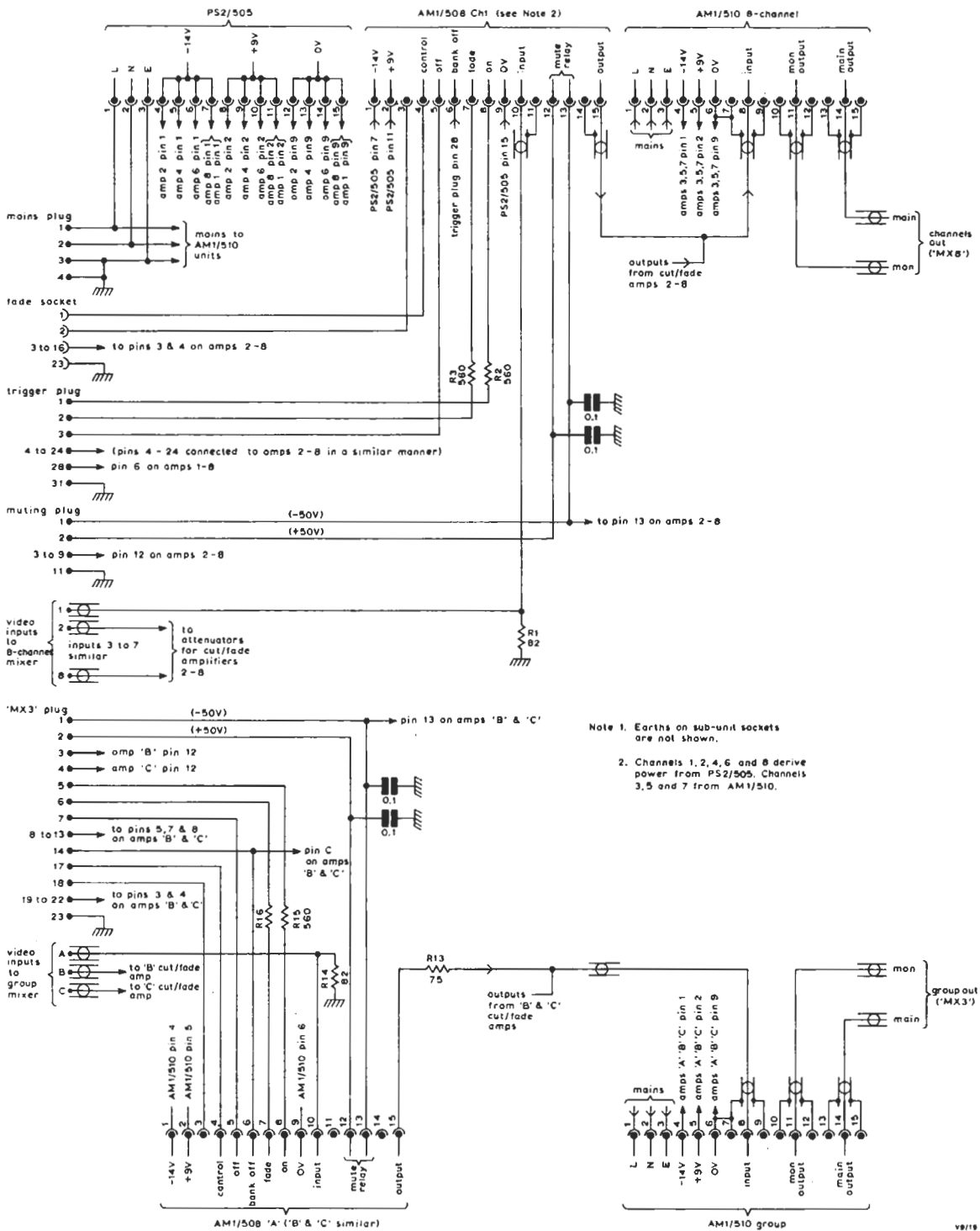


Fig. 7.2 Circuit of the MXI/503 Panel

units is shown in Fig. 7.2.

Each input to the 8-channel mixer feeds one of the cut-fade amplifiers. These eight amplifiers are triggered between *On*, *Off* and *Fade* modes of operation by pulses which are generated in a Sync Switch Panel PA18/508 (Instruction V.13) external to the mixer. The pulses occur during the field back-porch period so that switching between sources does not interfere with the operation of picture monitors and receivers.

When a channel is triggered into either the *On* or the *Fade* mode all unwanted channels are triggered automatically into the *Off* mode. Channels are triggered into the *On* mode one at a time but any number may be triggered into the *Fade* mode.

The group mixer functions in a similar manner to the 8-channel mixer but its purpose is to combine the outputs of two 8-channel mixers whose corresponding inputs are paralleled; see EP5/502, Instruction V.15. Two MX1/503 units provide two group mixers; one of these is used to obtain the main output and the other is used either for a preview facility (via the otherwise unused 8-channel mixer) or to feed a Split-screen Switch Panel PA18/507 (Instruction V.13).

The three inputs of each group mixer, in a 2-bank mixing equipment such as the EP5/502, are fed with the outputs of the channel mixers (inputs A and B) and with the output of the Split-screen Switch Panel. The duplicate feeds of these three signals are obtained by means of resistive splitting networks and the three networks together form the Attenuator Unit AT3/504 (Instruction V.12).

General Specification

Mains Input 200—250 volts
 39 watts

Max Permitted Mains
Bump 15 per cent

Impedances

Input 75 ohms \pm 3 per cent
Output 75 ohms \pm 3 per cent

Signal Levels

Input 0.25 V p-p
Output (across 75 ohms) 1 V p-p (main)
 0.5 V p-p (monitor)
Output (across high
impedance) 1 V p-p (monitor)

Isolation

Between Inputs 80 dB at 100 kHz
 60 dB at 5 MHz

Monitor to Main Out-
put 70 dB at 100 kHz
 36 dB at 5 MHz

Main to Monitor Out-
put 38 dB at 100 kHz
 36 dB at 5 MHz

Pulse and Bar (625 lines)

1T and 2T P/B Ratio 1 ± 0.25 per cent
Bar Distortion Less than 0.75 per cent

50-Hz Square Wave

Sag less than 1.5 per cent

Non-linearity Distortion *Test (CCIR)*

Less than 0.5 per cent

Differential Phase

Less than 0.15 degrees
at 4.43 MHz

Delay at 4.43 MHz

74 ns

Overload

3.2 V p-p at 100 kHz

Ambient Temperature *Range*

10—45 degrees C

Weight

38lb.