

Section 4 Audio Mixers

Introduction

This section presents descriptions about various Audio Mixers used with VPEs Editors. Machine descriptions appear in the order listed below.

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Yamaha 03D Audio Mixer

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General Information

Preview Switching

The following information explains preview switching terms and methods that apply to VPE editing systems when used with audio mixers.

Definitions

When one of the editor preview modes is selected, the first letter of the acronym (for example VVV) indicates which video should appear on the preview monitor when the preview sequence starts at the beginning of preroll. For example, R-VTR - source - R-VTR, or Black - Source - Black, etc. for all six previews.

Preview modes, VV, VB, and BV are the last 5 seconds of the associated full preview. If the preview is audio only, the source portion of the video preview is inactive and the video remains selected as shown below:

<u>MODE</u>	<u>PREVIEW VIDEO DURING EDIT FOR AUDIO ONLY*</u>
VVV	R-VTR
BVB	BLACK
VBV	R-VTR
VV	R-VTR
VB	BLACK
BV	R-VTR

* The converse is true for Audio during Video Only.

Where preview switching occurs depends on the type of preview system (i.e., preview switcher or E-E preview). With an E-E system, time accurate switching occurs in the R-VTR for VVV and VBV modes (switch preset to Black), but it occurs in the switcher for BVB mode. With a preview switcher, time accurate switching occurs in the preview switcher for VVV and VBV modes, but it occurs in the switcher for BVB mode.

BVB mode in the switcher is best accomplished by switching to a Black that will not affect the setup of the switcher for manual switcher mode (i.e., DSK Black in the Model 100 or PGM Black in the Model 300). When in the manual mode, the operator turns Video Off on the Editor (kills crosspoint selection, transitions and shift-reset operation) so he can manually set up the switcher for an edit.

NOTE: *BVB or VBV should be active (non-destructively) during the manual mode.*

Generally, if a video switcher or audio mixer must do previews on the program row (TEN-XL, 300 Audio, AMX-100), preview switching should not be done during video (audio) off. Thus, those functions would not be available.

Editing With 4-Channel Audio

With 4-channel audio on some video machines and editor control of multiple track audio machines, there is an increased interest in editor control, previewing, and documentation of all audio channels separately.

With Version 4.1 (or greater) Super Edit software and version 1.0 or greater of Sabre Edit software, it is possible to enter 4-channel audio record information in the list as well as control up to 4 channel previews with some configurations of the editor and peripheral equipment. Even though many mixers and VTRs are 2 channel, we will look at ways to use them in 4 channel applications.

Sabre Edit and four-channel versions of Super Edit allow the user to select any combination of 4 audio channels and video as the video-audio editing mode. The edit is then shown in the list. For example, A13V or A1234. The additional channels 3 and 4 activate channels on certain VTRs and control preview modes on the 4 channel (standard) AMX-170. Other 2 channel devices work normally with the editor, ignoring the new commands.

4-Channel Play and Record Devices

Any device, regardless of channels, that can be controlled by the editor can be used as a source machine by the editor. Additionally, several 4-channel VTRs can be controlled in Record Mode. However, there are operational differences between machines as explained below.

The Panasonic and SONY 1/2" machines with four audio channels include two FM channels that can only be recorded with video. Thus, 4-channel control is not used. It may be desirable to activate channels 3 and 4 in the list to indicate that 4-channel information has been recorded. A 4-channel mixer may be useful if different audio information is being laid down on the four tracks. This approach has added limitations because the audio information on the FM track is not audible at other than play speeds.

The Sony BVH-2800 with PCM audio allows separate recording on any of the four tracks under editor control; two are PCM, and two are linear.

The DVR-1000 and DVR-10 allow separate recording on any of four digital tracks. A separate cue track that can be used for listening at non-play speeds is also controllable by the editor by ganging it with one of the digital channels.

Previewing Methods

With editor software version 4.1 (or greater), an E-E Preview option is available. Generally, E-E Audio Preview allows the machine to do audio previews when a multi-channel preview switcher is not available. The BVH-2800 is limited in this respect in that E-E previews are not available for the PCM tracks.

Another option is the 8466 Preview Switcher. It provides preview switching of four channels of audio and one channel of composite or component video. For expansion of existing systems using an 8465 preview switcher, a second 8465 can be paralleled with the first, allowing previews of two audio stereo pairs (and a second video channel).

If either a GVG AMX-170 or a Graham-Patten mixer is used, previewing is done on a preview bus in the mixer, regardless of whether the optional E-E previewing is used. In these cases, previewing capability depends on the mixer features through the editor interface.

Audio Mixer Options For VPE Editor Control

The Graham-Patten 600 series is a 12- or 16-input, 2-channel output mixer for previewing or recording. However, it can mix as many input channels as desired when operating under editor control.

While recall and automatic setup from the edit list is limited to 2 channel source selection, it is possible to preset a 4 or more channel mix. The editor will then accurately preview or record this complex mix. Selecting (monitoring) sources on the preview bus from the editor will not disturb the mix. No memory is provided for stored setups.

The GVG AMX-170 is a 16-channel input, 4-channel output mixer, fully controlled from the editor. Sources (editor-controlled machines) can be any number of input channels. Any combination of 4 audio channels selected as the editing mode on the editor will activate transitions on those channels during an edit.

Full E-MEM control is standard, and each editor can have as many custom mix setups stored in the EDL as required. These are automatically recalled (including EQ settings) during auto-assembly. The AMX-170 has 4 preview channels. Only those included in the edit are active in a preview. The user manually selects which pair of preview outputs are to be monitored by the 2-channel preview monitor.

The other GVG audio mixers, the Model 300 audio and AMX-100, are basic 2-channel devices without preview buses. They are limited in their use for 4-channel application.

Non-GVG mixers that the editor interfaces to by serial or parallel interface, have different capabilities. The manufacturer should be consulted for 4-channel application.

System Configuration

E-E previewing and multi-channel audio have added more variables to configuring the audio portion of the system for proper editing and previewing operation. Depending on the configuration of your editing application, your system should be cabled as recommended in the VPE Installation Guide. That is, if all system features are to be realized.

SWAP Feature For ESAM-2 Audio Mixers

For audio mixers using the ESAM-2 protocol, an extension of that protocol allows identification of which machine is the Record VTR. During the editor start-up, Super Edit provides a A-MIX SWAP ON/OFF? parameter. When this selection is set to ON, each time **[SHIFT][RESET]** is pressed on the editing keyboard, and when new audio crosspoint assignments are made, the system identifies each Marks Table source (including the R-VTR, AUX, BLK, and unassigned machines).

Then, with each SWAP, the ESAM-2 device is updated with information regarding which source is the current R-VTR. This extra communication allows the ESAM-2 device to always select the correct source on its own front panel. In other words, selecting the R-VTR in the editor's Marks Table always selects the R-VTR on the ESAM-2 front panel, selecting the B-VTR in the editor's Marks Table always selects the B source on the ESAM-2 device, etc.

When multiple sources are assigned to the same crosspoint (in ESAM-2 language this is the same logical machine), the ESAM-2 device monitors them both as if they were a single machine. Selecting either machine in the editor's Marks Table results in both machines being monitored by the audio mixer.

GVG AMX-100 Audio Mixer

NTSC/PAL	NTSC
Control	Direct
Protocol	AMX-100
Preview Options	No internal preview switcher. Proper preview requires either E-E preview switching or a Preview Switcher.
Cable Requirements	From AMX-100 rear panel to Editor rear panel AUDIO CTL
Edit Frame Accuracy	98% of edits are frame accurate if machine and system are timed to VPE recommendations and Editor QC is set to nominal.
Mixer Accuracy	Nominal with current software. The Editor can adjust In and Out times. Audio times are trimmed with a single adjustment.
Audio Track Section	CH1 and CH2.

Mixer Setup

Setup of the AMX-100 is as follows:

1. Connect one end of the supplied control cable to the back panel of the Editor at the AUDIO CTL port. Connect the other end of the cable to J2 on the rear panel of the AMX-100.
2. For a 31, 41, or 51 editor, set the AUDIO CTL port for 38.4K baud, RS-422, odd parity. Refer to the I/O boards section of the Editor Service Manual for instructions.

The VPE-131, 141, 141L, 151, 241, 241L, and 251 editors are already set correctly at the factory and cannot be changed.

3. Remove the AMX-100 front panel and remove the lower circuit board. This is the Control Processor Module.

4. Locate the 4-position DIP switch on the Control Processor board and set it for RS-422 protocol as follows:
1 = OPEN 3 = OPEN
2 = CLOSED 4 = CLOSED
5. Locate the Baud Rate jumper (S11) near the center of the board and set it to position E (38.4K baud).
6. Set S3 for an address of 30H as follows:
1 = OPEN 5 = OPEN
2 = OPEN 6 = OPEN
3 = CLOSED 7 = OPEN
4 = CLOSED 8 = OPEN
7. Set S2 for ODD Parity as follows:
1 = OPEN (enable parity)
2-6 = not used
7 = OPEN
8 = CLOSED (odd parity)
8. Set DIP switch S1 as follows:
1 = CLOSED (Editor position)
2 = OPEN (60Hz - NTSC)
 CLOSED (50Hz - PAL)

3-6 = Tally functions, not required by editor. See AMX-100 manual for setup.
9. Set the switches at the front of the board:
BATT = ON
SERVICE = NORM.
10. Re-install the Control Processor module. Then press the RESET button on the front of the module.
11. Re-install the AMX-100 front panel. Press the white REMOTE button on the front panel.

Establishing Communications

1. From the editing application, assign mixer crosspoints as described in your editor's Operator's Guide.

2. At the Editor Keyboard, press [**SHIFT**][**RESET**] to establish communication with the mixer. The green VTR keys should now allow crosspoint selection.

GVG AMX-170 Audio Mixer

NTSC/PAL	NTSC
Control	Direct
Protocol	AMX-170
Preview Options	Internal Preview Switcher
Cable Requirements	From AMX-170 rear panel to AUDIO CTL on the Editor rear panel.
Edit Frame Accuracy	98% of edits are frame accurate if machine and system are timed to VPE recommendations and Editor QC is set to nominal.
Mixer Accuracy	Nominal with current software. The Editor can adjust In and Out time Audio times are trimmed with a single adjustment.es.
Audio Track Section	A1—A4

Mixer Setup

Setup of the AMX-170 is as follows:

1. Connect one end of the supplied control cable to the back panel of the Editor at the AUDIO CTL port. Connect the other end of the cable to J36 (EDITOR) on the rear panel of the AMX-170.
2. For 31, 41, and 51 Editors, set the appropriate I/O port of the Editing Computer to RS-422, 38.4K baud, ODD parity, 8 bit data. Refer to the Videotape Editing System Service Manual for details. The VPE-131, 141, 141L, 151, 241, 241L, and 251 systems are already set for the correct parameters at the factory and cannot be changed.

Turn off power to the AMX-170 system and remove the Audio Control Processor Module from the frame.

4. Locate the 4-position DIP switch on the Control Processor board and set it as follows:
 - S5 = ON/CLOSED to enable Editor control
 - S6 = ON/CLOSED for 38.4K baud
5. Replace the Control Processor Module and turn power back on.

Establishing Communications

1. From the editing application, assign mixer crosspoints as described in your editor's Operator's Guide.
2. At the Editor Keyboard, press **[SHIFT][RESET]** to establish communication with the mixer. The green VTR keys should now allow crosspoint selection.

Graham-Patten 600 Series Audio Mixers

NTSC/PAL	NTSC
Control	Direct
Protocol	ESAM 1
Preview Options	Graham-Patten 600 has an internal preview switcher.
Cable Requirements	From G-P SERIAL INPUT to AUDIO CTL on the Editor rear panel.
Edit Frame Accuracy	98% of edits are frame accurate if machine and system are timed to VPE recommendations and Editor QC is set to nominal.
Mixer Accuracy	Nominal with current software. The Editor can adjust In and Out times. Audio times are trimmed with a single adjustment.
Audio Track Section	A1/A2

Mixer Installation

Figure 4-1 shows the recommended installation for a Graham-Patten mixer with a VPE editing system. The figure shows an 8466 Preview Switcher being used for video previews. In an E-E preview system, the G-P is connected in the same way. However, the preview video monitor is directly connected to the record machine.

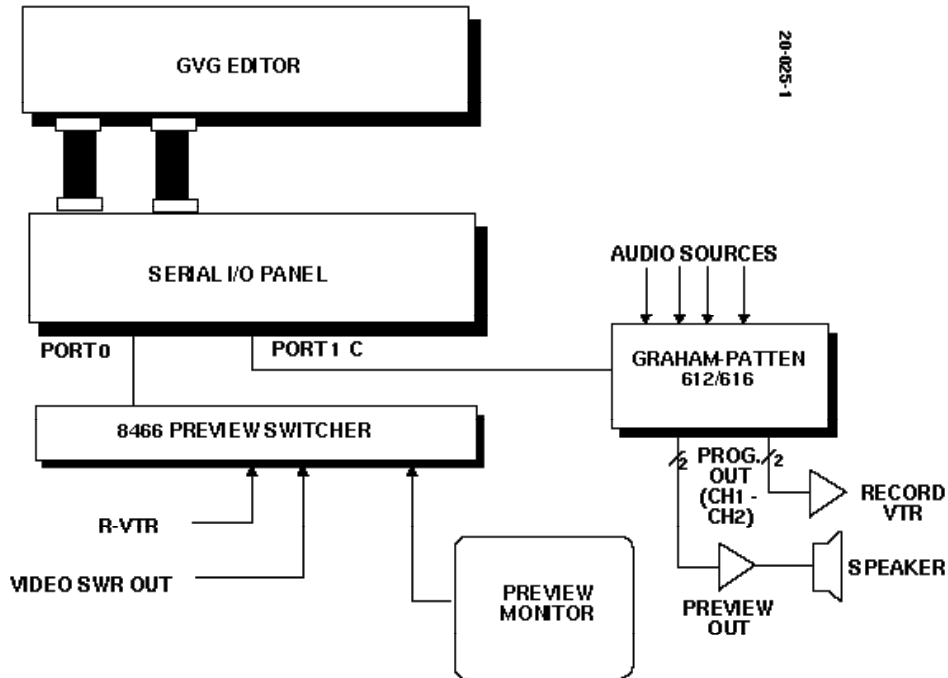


Figure 4-1. Graham-Patten/Editor Installation

When connected as shown, the following features of the G-P mixer preview bus become available. These features are not available with 8466 audio or E-E previewing:

- Preview timing does not depend on E-E mode switching in the record machine.
- Previews are made on the preview bus and do not disturb a normally set up audio mix on the preset program bus.
- The Editor controls the record machine input selection on the G-P. Thus, changes of machine selection or operation of the SWAP feature on the Editor automatically selectS the proper record machine (audio pre-select function).

With 8466 preview systems using a G-P mixer, the 8466 audio channels provide auxiliary, simultaneous, audio preview switching.

Mixer Setup

The Graham-Patten 612 and 616 serial audio mixers interface to the editing system with a single RS-422 control cable. The program CH 1 and CH 2 outputs of the G-P mixer normally feed the inputs of the R-VTR. The Preview CH 1 and CH 2 outputs feed the edit suite audio monitor. Cable requirements and switch settings are as follows:

1. Connect the RS-422 control cable to the back panel of the editor at the AUDIO CTL port and to the J33 SERIAL INPUT on the rear of the G-P mixer frame.
2. For 31, 41, and 51 Editors, set the appropriate I/O port of the Editing Computer to RS-422, 38.4K baud, ODD parity, 8 bit data. (Refer to the Videotape Editing System Service Manual.) The VPE-131, 141, 141L, 151, 241, 241L, and 251 systems are already set for the correct parameters at the factory and cannot be changed.
3. The G-P mixer communication parameters are set on the 1162 Address Decoder board. Set the 8-position DIP switch as follows:

S1 = CLOSED (38.4K baud) S2 = CLOSED (38.4K baud)

S3 = CLOSED (parity ON) S4 = OPEN (ODD parity)

4. After setting the switches, re-install the board and press the red RESET button on the front of the Address Decoder board.
5. At the G-P control panel, enable the following buttons (lamp ON) to enable Editor control:

SRC EXT (source selection)

TRANS EXT (transitions)

PVW EXT (preview monitoring)

6. Select audio crosspoints via Super Edit. Crosspoint 1 in the assignment menu selects inputs 1 and 2 (Channel 1 and 2 of A-VTR) at the G-P mixer.

Establishing Communications

1. From the editing application, assign mixer crosspoints as described in your editor's Operator's Guide.
2. At the Editor Keyboard, press **[SHIFT][RESET]** to establish communication with the mixer. The green VTR keys should now allow crosspoint selection.

Graham-Patten D-ESAM 800 Audio Mixer

NTSC/PAL	NTSC
Control	Direct
Protocol	ESAM-2
Previews	Internal preview switcher.
Cable Requirements	From G-P EDIT to AUDIO CTL on the Editor rear panel.
Edit Frame Accuracy	98% of edits are frame accurate if machine and system are timed to VPE recommendations and Editor QC is set to nominal.
Mixer Accuracy	Nominal with current software. The Editor can adjust In and Out times. Audio times are trimmed with a single adjustment.
Audio Track Section	A1—A4

Mixer Setup

The Graham-Patten D-ESAM 800 Audio Mixer is a digital audio mixer with a standard 4-channel preview switcher. Interface details and setup procedures are given below.

Editor/Mixer Interface	Direct, RS422, ESAM-2 protocol
Baud Rate	38400 for VPE editor 9600 for 41/51 editors
Parity	ODD parity, 8 data bits, 1 stop bit
Device Address	88 A6
Reference Input	Composite Sync or Video Reference
D-ESAM 800 Panel	Version 1.2

Connections & Interface Setup

Connect and set up the Graham-Patten D-ESAM as follows:

1. Connect an RS422 control cable from the J4 EDIT connector on the rear panel of the D-ESAM 800 chassis to the AUDIO CTL connector on the rear panel of the editor chassis.
2. The mixer's communication parameters are set using an RS-232 terminal which connects to the J1 MAINTENANCE connector on the rear panel of the D-ESAM 800 chassis. Turn the editor and D-ESAM 800 power ON. The mixer's terminal monitor shows a Power Up/Reset message similar to the one below:

```
RAM CHECK OK
D-ESAM 800 RACK VERSION 1.0
SERIAL EDITOR I/F: ESAM-2
```

3. Select **[1]** COMMUNICATIONS from the terminal menu.
4. Select **[1]** SET BAUD RATE.
5. Select 38400 for VPE Series Editors or 9600 for 41/51 Editors and press **[RETURN]**.
6. Select **[2]** SET PARITY.
7. Select ODD and press **[RETURN]**.
8. Select **[3]** SET STOP BITS.
9. Select **[1]** and press **[RETURN]**.
10. Select **[4]** for SET DATA BITS.
11. select **[8]** and press **[RETURN]**. The menu from Step 3 returns.
12. Select **[Ø]** RETURN TO EDITOR OPERATIONS.

Logical Machine Setup

From the terminal menu, set up the Editor audio crosspoints to the D-ESAM 800 logical machines as described below.

1. From the EDITOR OPERATIONS menu, select **[2]** LOGICAL MACHINES.
2. Select **[1]** EDIT/DEFINE MACHINES to select which Editor source (crosspoint) is assigned to which logical machine.
3. Press **[ESC]** (Escape). The LOGICAL MACHINES menu returns.
4. Select **[2]** LIST MACHINE DEFINITIONS, which shows a list of the current Editor audio crosspoint assignments to D-ESAM 800 sources. (Note that on the D-ESAM 800, the R-VTR defaults to crosspoint #10, but on the Editor audio crosspoint assignment page, the R-VTR defaults to crosspoint #Ø, which is silent.)
5. From the EDITOR OPERATIONS menu, select **[5]** I/F OPTIONS.
6. Select **[2]** EDITOR I/F ACTIVE FIELD.
7. Select either **[F1]** or **[F2]** to set whichever field is desired and then press **[RETURN]**.

Establishing Communications

To establish communications between the D-ESAM 800 and the Editor:

1. At the mixer panel, select (turn ON) the following push buttons to enable the editor to control the mixer:

EDIT I/F
SRC EXT
GPI EXT
PVW EXT
TRANS EXT
SRC EXT

2. Deselect (turn OFF) the following push buttons:

RATE EXT
LEVEL EXT

3. On the editor keyboard, press **[SHIFT][RESET]**. This establishes communication between the Editor and the mixer.

The yellow LED located on the D-ESAM 800 Master Processor board lights to indicate that the mixer is communicating with the Editor.

E-MEM™ Triggers

This feature allows you to select registers 0 - 99, where you enter the register number in response to the **COMMAND =?** prompt.

The D-ESAM 800 standard release only has 20 registers, 1 - 20. (It does use register 0, but only in a special mode which can be set on the D-ESAM 800 front panel.) With the extended memory option of the 800, there are more than 100 registers. However, Super Edit™ only allows access to the first 100 registers.

If a register number that has not been previously saved is sent to the D-ESAM 800, an error message appears on the D-ESAM 800 front panel. Register 0 produces this error message.

Auto-Trans Trigger

In response to the **COMMAND = ?** prompt, the user would enter a PEGS command which identifies the bit pattern representing the audio channels 1 - 4) to be included in the transition. The table below lists the 15 possible combinations of audio channels 1 through 4, the corresponding bit patterns, and the appropriate PEGS command. Note that 0 is not a possible combination.

AUTO-TRANS PEGS COMMANDS

Audio Channel(s) Desired	Bit Pattern				PEGS Command
	8	4	2	1	
ATrans CH1				X	101
ATrans CH2			X		102
ATrans CH12			X	X	103
ATrans CH3		X			104
ATrans CH13		X		X	105
ATrans CH23		X	X		106
ATrans CH123		X	X	X	107
ATrans CH4	X				108
ATrans CH14	X			X	109
ATrans CH24	X		X		110

ATrans CH124	X		X	X	111
ATrans CH34	X	X			112
ATrans CH134	X	X		X	113
ATrans CH234	X	X	X		114
ATrans CH 1234	X	X	X	X	115

Sony MXP-290 Audio Mixer

NTSC/PAL	NTSC
Control	Direct
Protocol	AMX-100
Options Required	VSA 2411
Preview Options	No internal Preview Switcher. Proper preview requires E-E preview switching or a preview switcher.
Reference	Neither the MXP-290 board nor the VSA 2411 accept an external reference.
Cable Requirements	From VSA 2411 SERIAL IN to AUDIO CTL on the Editor rear panel. From VSA 2411 Control Channel to EDITOR1 on MXP-290.
Mixer Accuracy	Nominal with current software. The Editor can adjust In and Out times. Audio times are trimmed with a single adjustment.
Audio Track Section	4 Stereo pairs (CH1 & CH2); 8 monaural channels. For Stereo mode: Press STEREO MODE switch on MXP-290 connector panel (switch lit) and press STEREO push button on VSA 2411 (Stereo indicator ON). In this mode, VPE audio crosspoints are: Machine 1 - CH1 (L) first fader Machine 1 - CH2 (R) second fader Machine 2 - CH1 (L) third fader Machine 2 - CH2 (R) fourth fader Machine 3 - CH1 (L) fifth fader Machine 3 - CH2 (R) sixth fader Machine 4 - CH1 (L) seventh fader Machine 4 - CH2 (R) eighth fader

For Monaural Mode: Release STEREO MODE on MXP-290 connector panel (switch extinguished) and release STEREO pushbutton on VSA 2411 (Stereo indicator extinguished).

In this mode, VPE audio crosspoints are Channels 1 through 8 and up to 8 sources.

E-MEM Capabilities None

VSA 2411 PROM Levels	<u>PROM</u>	<u>VERSION</u>
	IC 26	V2.04
	IC 30	V1.02

Mixer Setup

To operate with a VPE editor, the mixer requires the VSA 2411 option.

1. Connect the supplied control cable from the AUDIO CTL port on the Editor back panel to SERIAL IN connector on the rear panel of the VSA 2411 frame.
2. Connect a 15-pin D-type (male to female) cable from the VSA 2411 Control Channel to the EDITOR 1 connector of the MXP-290 Operation and Maintenance Manual for the control signal pin outs.
3. For a 31, 41, or 51 Editor, set the AUDIO CTL port for 38.4Kbaud, RS-422, odd parity. Refer to I/O boards section of the Editor Service Manual for instructions. The VPE-131, 141, 141L, 151, 241, 241L, and 251 editors are already set correctly at the factory and cannot be changed.
4. Set the communications parameters on the pc board located inside the VSA 2411 frame as follows:

<u>SWITCH</u>	<u>SETTING</u>
SW 10	Position 2 (RS-422) Position 6 (Reply)
<u>JUMPER</u>	<u>SETTING</u>
J8	In (38.4K baud)

J15	Out (ODD parity)
J16	Out (AMX-100 protocol)
J17	In (AMX-100 protocol)

Establishing Communications

To establish communications between the MXP-290 and the Editor.

1. Set FADE START on the VSA 2411 front panel to AUTO ON mode to put the VSA 2411 under Editor control.
2. Depress the STEREO push button on the VSA 2411 front panel to turn it ON if you want stereo mode. In this mode, audio crosspoints are assigned as follows at the editor:

Machine 1 - CH1 (L) first fader
Machine 1 - CH2 (R) second fader
Machine 2 - CH1 (L) third fader
Machine 2 - CH2 (R) fourth fader
Machine 3 - CH1 (L) fifth fader
Machine 3 - CH2 (R) sixth fader
Machine 4 - CH1 (L) seventh fader
Machine 4 - CH2 (R) eighth fader

If you want monaural mode, set the STEREO push button to OFF (push button released). IN this mode the audio crosspoints are assigned as 1 through 8 for up to 8 sources.

3. Set the STEREO MODE switch on the MXP-290 connector panel to ON (depressed) for stereo mode or OFF (released) for monaural.
4. Set the EDITOR CONTROL push button on the MXP-290 mixing console to ON to permit Editor control.
5. Release the LOCAL switches for each VCA to enable the Editor to control each channel.
6. From the editing application, assign mixer crosspoints as described in your editor's Operator's Guide.
7. At the Editor Keyboard, press **[SHIFT][RESET]** to establish communication with the mixer. The green VTR keys should now allow crosspoint selection.

Sony MXP-S390 Audio Mixer

The MXP-S390 Serial Audio Mixer interfaces to the editing system with a single RS-422 control cable and ESAM-II serial protocol. The MXP-S390 serial interface is a machine based system; therefore, no distinction is made between channels 1, 2, and multi-channel commands.

Mixer Setup

1. Connect the control cable from the editing system to the 9 pin Serial port on the rear of the MXP-S390 console. Protocol - ESAM II.
2. Connect composite sync or a composite video reference signal to the REF VIDEO INPUT connector.
3. The MXP-S390 mixer communication parameters are set on the Serial Interface IF-355 board, located inside the serial interface panel.

Set the DIP switch A (S4) as follows:

<u>DIP SWITCH SETTING</u>	<u>DISCRIPTION</u>
Switch 1 OFF	REC MON I switch OFF enables any recorder assignment from the editor (free recorder)
	REC MON I switch ON enables the Recorder selection on the REC MONI thumbwheel switched (Fixed recorder)
Switch 2 OFF	Self Diagnosis
Switch 3 OFF	Selective Tests
Switch 4 OFF	Production Test only
Switch 5 OFF	Memory Test
Switch 6 —	
Switch 7 —	
Switch 8 —	

Set DIP switch B (S3) as follows:

(1bit, odd parity, 8 data bits, 38.4K baud)

<u>DIP SWITCH SETTING</u>	<u>DISCRIPTION</u>
Switch 1 OFF	STOP BITS
Switch 2 ON	STOP BITS 1

Switch 3	OFF	PARITY
Switch 4	ON	EVEN PARITY
Switch 5	ON	CHARACTER LIMIT
Switch 6	ON	CHARACTER LIMIT (8 data bits)
Switch 7	ON	BAUD RATE
Switch 8	OFF	BAUD RATE 38.4K

4. At the MXP-S390 control panel, enable the following buttons (lamp ON):
 - a. On the Serial Interface panel set Mode switch to EDITOR.
 - b. On the Monitor Source panel select EDIT.

These buttons enable editor control of source selection, transitions and preview monitoring respectively.

5. Select a VTR configuration (A–P) by pressing the VTR configuration switch (labeled VTR). See MXP-S(P)390 operational manual for configuration chart.
6. Set the PREVIEW PRESET switches (behind control panel at each channel input) for each of the input channels to the selected VTR configuration. Refer to the MXP-S(P)390 operational manual for configuration chart. Note that the MASTER channel PREVIEW PRESET switches are not used with serial interface.
7. Select Audio Crosspoints via Super Edit™. Depending upon the configuration selected at the MPX-S390 mixer, the crosspoints assigned in the Assignment Page of Super Edit will select the mixer inputs.

Editing Features

Input programming (see MXP-S390 Operational Manual) requires you to configure the inputs to be selected on the Program and Monitor buses. The version below has these features as of July 16, 1993 (SIF Version 1.00)

SWAP

The MXP-S390 allows identification of the Record VTR. During the editor start-up Super Edit provides an **A-MIX SWAP ON/OFF ??** parameter. The system identifies each Mark Table source (including the R-VTR, AUX, BLK, and unassigned machines) when three things occur: the SWAP selection is set to ON, each time **[SHIFT][RESET]** is pressed, and when new audio crosspoint assignments are made.

Then with each SWAP, the MXP-S390 is updated with information regarding which source is the current R-VTR. This extra communication allows the MXP-S390 to always select the correct source on its control panel. When multiple sources are assigned to the same crosspoint, the MXP-S390 monitors them both as if they were the same machine. Selecting either machine in the editors Mark Table results in both machines being monitored by the MXP-S390.

Record Operations

The MXP-S390 has a monitoring bus that can be remotely controlled as a preview bus; therefore, all audio previews are done in both the preview switcher system and the E-E (video) preview system in the MXP-S390.

For a dissolve edit, “from” the mixer channels corresponds to the selected VTR that will be active. This is indicated by the red A/B LEDs being lit on the appropriate mixer channels. The “to” defines which VTR will be faded to during a crossfade. This is indicated by the green A/B LEDs on the MXP-S390 panel. At the edit point the transition is started between the two active VTRs; the MXP-S390 cannot set separate durations for each channel. If a transition is aborted with an **ALL STOP** command, the mixer’s crossfade is reset to the previous values set before the last transition.

Cut edits are done by selecting the “to” source. There is no transition. The program output of the mixer is fed to the R-VTR.

Monitor Operations

The audio monitor outputs the source between the mixer line out and the R-VTR (preview bus). The VTR selected by the green key source selection will be placed on the preview bus.

VVV (R-VTR PB – MIXER – R-VTR PB): The preview is switched from the R-VTR to the mixer line out.

BVB (BLACK – MIXER – BLACK): “Black” or Audio OFF is selected instead of the R-VTR and the preview proceeds.

VBV (R-VTR – BLACK – R-VTR): The re-entry is not selected and switching occurs between the R-VTR and Audio OFF.

In preview as well as record, the switch sequence starts at preroll cue point. At the end of the edit, the sources are returned to the selections present before operation. In a preview, if the transition is aborted, the monitor output is reset to the mixer’s preview bus (Recorder VTR).

Soundcraft 200BVE Audio Mixer

NTSC/PAL	NTSC
Control	Direct
Protocol	AMX-100
Options Required	VSA 24II
Preview Options	No internal Preview Switcher. Proper preview requires E-E preview switching or a preview switcher.
Reference	Neither the 200 BVE nor the VSA 24II accept an external reference.
Cable Requirements	From VSA 24II SERIAL IN to AUDIO CTL on the Editor rear panel. From VSA 24II Control Channel to the 200BVE.
Mixer Accuracy	Nominal with current software. The Editor can adjust In and Out times. Audio times are trimmed with a single adjustment.
Audio Track Section	4 Stereo pairs (CH1 & CH2). The STEREO push button on the VSA 24II is depressed (indicator On) Under Editor control in the MONO mode, the mixer does not reliably select crosspoints.

NOTE: *The Soundcraft board always controls both audio channels and that there is no individual channel control within the mixer.*

E-MEM Capabilities	None						
VSA 24II PROM Levels	<table><thead><tr><th><u>PROM</u></th><th><u>VERSION</u></th></tr></thead><tbody><tr><td>IC 26</td><td>V2.04</td></tr><tr><td>IC 30</td><td>V1.02</td></tr></tbody></table>	<u>PROM</u>	<u>VERSION</u>	IC 26	V2.04	IC 30	V1.02
<u>PROM</u>	<u>VERSION</u>						
IC 26	V2.04						
IC 30	V1.02						

Mixer Setup

To operate with a VPE editor, the mixer requires the VSA 24II option.

1. Connect the supplied control cable from the AUDIO CTL port on the Editor back panel to SERIAL IN connector on the rear panel of the VSA 24II frame.
2. Connect a 15-pin D-type (male to female) cable from the VSA24II Control Channel to the 200BVE. Refer to the VSA 24II Application Guide and the Soundcraft 200BVE User Manual for the control signal pin outs.
3. Set the communications parameters on the pc board located inside the VSA 24II frame as follows:

<u>SWITCH</u>	<u>SETTING</u>
SW 10	Position 2 (RS-422) Position 6 (Reply)
<u>JUMPER</u>	<u>SETTING</u>
J8	In (38.4K baud)
J15	Out (ODD parity)
J16 & J17	Out/In - AMX-100 protocol

Soundcraft 200BVE Setup

BACK PANEL

DIP switch UP positions (to enable VCA 1 through VCA 8)

FRONT PANEL

BVE Status ON, located in the Monitor Section

(indicates Editor control)

Channel Status push button ON

(indicates channel is under Editor control)

Depth Fader all the way down (infinity)

(The Editor can fade the channel signal effectively to Off. If at the top (Ø), which is used to preset fader levels, the Editor will not have control.)

VSA 24II Setup

FRONT PANEL

Fade Start - Auto ON (to enable Editor control)
Stereo push button On. In this mode, audio crosspoints are assigned as follows at the Editor:

- Machine 1 - CH1 (L) first fader
- Machine 1 - CH2 (R) second fader
- Machine 2 - CH1 (L) third fader
- Machine 2 - CH2 (R) fourth fader
- Machine 3 - CH1 (L) fifth fader
- Machine 3 - CH2 (R) sixth fader
- Machine 4 - CH1 (L) seventh fader

Establishing Communications

To establish communications between the 200BVE and the Editor:

1. Assign crosspoints as described in the Super Edit™ Operator's From the editing application, assign mixer crosspoints as described in your editor's Operator's Guide.
2. At the Editor Keyboard, press [SHIFT][RESET] to establish communication with the mixer. The green VTR keys should now allow crosspoint selection.

Yamaha 03D Digital Audio Mixer

The VPE editing system interfaces to the 03D Serial Audio Mixer with a single RS-422 control cable and 03D serial protocol. The 03D must contain the “03D VEK” kit in order to be controlled serially. The 03D serial interface is a virtual machine based system, therefore no distinction is made between channels 1, 2, and multi-channel commands.

Mixer Setup

ESAM II protocol is an option to the 03D Mixer and needs to be installed at the Yamaha factory or customer installed using a serial terminal. Consult with your Yamaha representative.

Connect the control cable from the VPE to the 9 pin “**TO EDITOR**” serial port on the rear of the 03D console.

2. At the 03D control panel “**SETUP**” section (top, left of the mixer), repeatedly press the [**UTILITY**] button until the “**MIDI / HOST**” tab is selected.

In the “**HOST INTERFACE**” section of the “**MIDI / HOST**” tab, use the cursor buttons under the PARAMETER wheel to select, and press the [**ENTER**] button to accept the following:

- A. Select “**EDITOR**” and select **OK** or press [**ENTER**].
 - B. Set the “**TO EDITOR**” parameter to “**ENABLE**”.
 - C. Set the “**FRAME TYPE**” (ND, DF, 25 OR 24).
 - D. Set the “**PARITY FLAG**” to “**ODD**”.
 - E. Set the “**FADER MODE**” to:
 - a. “**ABSOLUTE**”: the input level can be adjusted manually.

“**FROM-TO**”: the faders indicate transitions but cannot be manually adjusted except when “**DISABLE**” is ON.

4. Press the [**AUTOMIX**] button until the “**MACHINE**” tab is selected. Assign input channels to the virtual machines using the cursor keys. Select A through H, and press the [**SEL**] buttons above the faders for the appropriate input channels to the virtual machine; set the REC machine by pressing [**ENTER**]. All sources need to be assigned, including AUX and BLK, or green key selection will default to the RECORD machines E-E signal.

When assigning the audio cross-points from the Assignment Page in Super Edit to the 03D setup;

AUDX 001 corresponds with (virtual) Machine A

AUDX 002 corresponds with (virtual) Machine B

AUDX 003 corresponds with (virtual) Machine C

AUDX 004 corresponds with (virtual) Machine D

AUDX 005 corresponds with (virtual) Machine E

AUDX 006 corresponds with (virtual) Machine F

AUDX 007 corresponds with (virtual) Machine G

AUDX 008 corresponds with (virtual) Machine H

There is no AUDX 000 in the 03D panel setups and no silence for BLK. Assign BLK to an unused audio cross-point

Assign the input channels of the virtual Machines in the “**FROM ASSIGN**” and “**TO ASSIGN**” to the Bus Outputs by repeatedly pressing the [**AUTOMIX**] button until the “**From-To**” tab is selected.

Use the cursor keys to select Bus 1 through 4 in “**FROM ASSIGN**”. Press the [**SEL**] buttons above the faders for the appropriate output channels of the virtual machines.

Use the cursor keys to select Bus 1 through 4 in “**TO ASSIGN**”. Press the [**SEL**] buttons above the faders for the appropriate output channels of the virtual machines.

These settings enable editor control of source selection, transitions and preview monitoring respectively.

AMEM™ Triggers

The 03D has 50 Scene Memories that can be saved and recalled through PEGS. Scene Memory 00 (PEGS register 0) recalls all mix settings to their initial factory default values.

If a register number that has not been previously saved is sent to the 03D, the 03D acknowledges the command, but sends no Scene Memory response.

To learn an AMEM into the 03D from the VPE keyboard, press [SHIFT][O]^{K2} or [SHIFT][U2]^{K5}

The system will prompt **LEARN AMEM nnn ?**. Enter the desired memory register (1 through 50) and press [ENTER].

To recall an AMEM stored in the 03D, press [PEGS]

REGISTER? Enter a PEGS register # **1-16**. Press [ENTER]

FUNCTION? Press [AUDIO]. Press [ENTER]. Function shows “M”.

COMMAND? Enter the number for the 03D Memory you wish to recall. Press [ENTER]

TIME? Enter the desired trigger time for the recall. Press [ENTER].

RECORD OPERATIONS

The 03D has a monitoring bus that can be remotely controlled as a preview bus; therefore, all audio previews can be done on either the preview switcher in the 03D or the E-E (audio) preview in the R-VTR.

For a dissolve edit, the "from" mixer channels correspond to the selected VTR that will be active. The "to" defines which VTR will be faded to during a crossfade. Both are indicated by the red LEDs on the 03D panel. At the edit point the transition is started between the two active VTRs; the 03D cannot set separate durations for each channel. If a transition is aborted with an **[ALL STOP]** command, the mixer's crossfade is reset to the previous values set before the last transition.

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ESAM II - PGM bus monitor mode

Introduction

This document describes a custom interface between Super Edit and the Graham-Patten DESAM mixers using the ESAM II protocol. While we expect this modification will work with most other ESAM II protocol mixers, they would first have to be tested.

Under standard ESAM II control, the monitor output of the mixer is switched to the Internal or “Source” bus whenever the R-VTR or a Source VTR is selected. In this way, either the R-VTR or the Source VTR is heard when selected at the editor.

In this new mode, when the R-VTR is selected the monitor is switched to the Source bus so that only the R-VTR is heard. When a Source is selected, the monitor output is switched to the Mixer (PGM) output bus so that the output of all open faders is heard.