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1 Introduction

This user guide has been developed for operators of Pro-Bel's TX 520 Master Control Switcher. Chapter 2 provides an overview of the TX 520, with subsequent chapters giving details and step-by-step instructions for using various features of the TX 520.

Other documentation may be required, depending on how the TX 520 is set up. For example, the technical manual provides information on the configuration screens which are not detailed in this operators guide.

n 1.1 Typographical conventions

Certain conventions are used in this guide to indicate different types of information.

Names of buttons and controls on the TX 520 are shown in this guide in bold capitals, within brackets, like this : **<VIDEO ONLY>** .

Procedures are shown as numbered steps, for example:

1 This is what to do first to perform this operation.

This states what happens or other related information.

2 Then do this.

This states what happens.

Pictures/diagrams are also provided to show screens and/or button locations relevant to the procedure.

n 1.2 Abbreviations

Within this document the following abbreviations and acronyms are used:

PST	Preset
PGM	Programme
RTC	Real Time Clock
TOD	Time Of Day
TC	Time Code
VU	Volume Meter
PPM	Peak Program Meter
dBFS	Decibels at Full Scale
dBu	Decibels
AUX	Auxiliary
DSK	Downstream Keyer
FTB	Fade to Black
PIN	Personal Identification Number

2 Overview of the TX 520

Pro-Bel's TX 520 Digital Master Control Switcher is a self-contained component digital video and AES/EBU audio transmission mixing system. It is normally operated from the control panel but can be remotely controlled by an automation system. It can be set up to support single or multi-level audio.

The TX 520 can be used for:

- Making transitions of sources to air using cuts, various fade/take combinations and wipes (see chapter 3).
- Adding downstream keys (see chapter 4).
- Defining and making audio-overs (see chapter 6).
- Monitoring audio and video sources (see chapters 7 and 8).
- Correcting audio levels (see chapter 15). The TX 520 can also be set up to support multi-level audio, allowing editing of the audio routing and selection of the audio level to monitor on the audio monitoring speakers (see chapter 16).
- An optional DVE is also available, providing up to 24 pre-programmed moves (see chapter 5)

A plasma display (see chapter 12) provides dynamic monitoring of audio levels and control of system parameters. In addition, the plasma display is used for system setup and configuration.

Configuration details are provided in the technical manual.

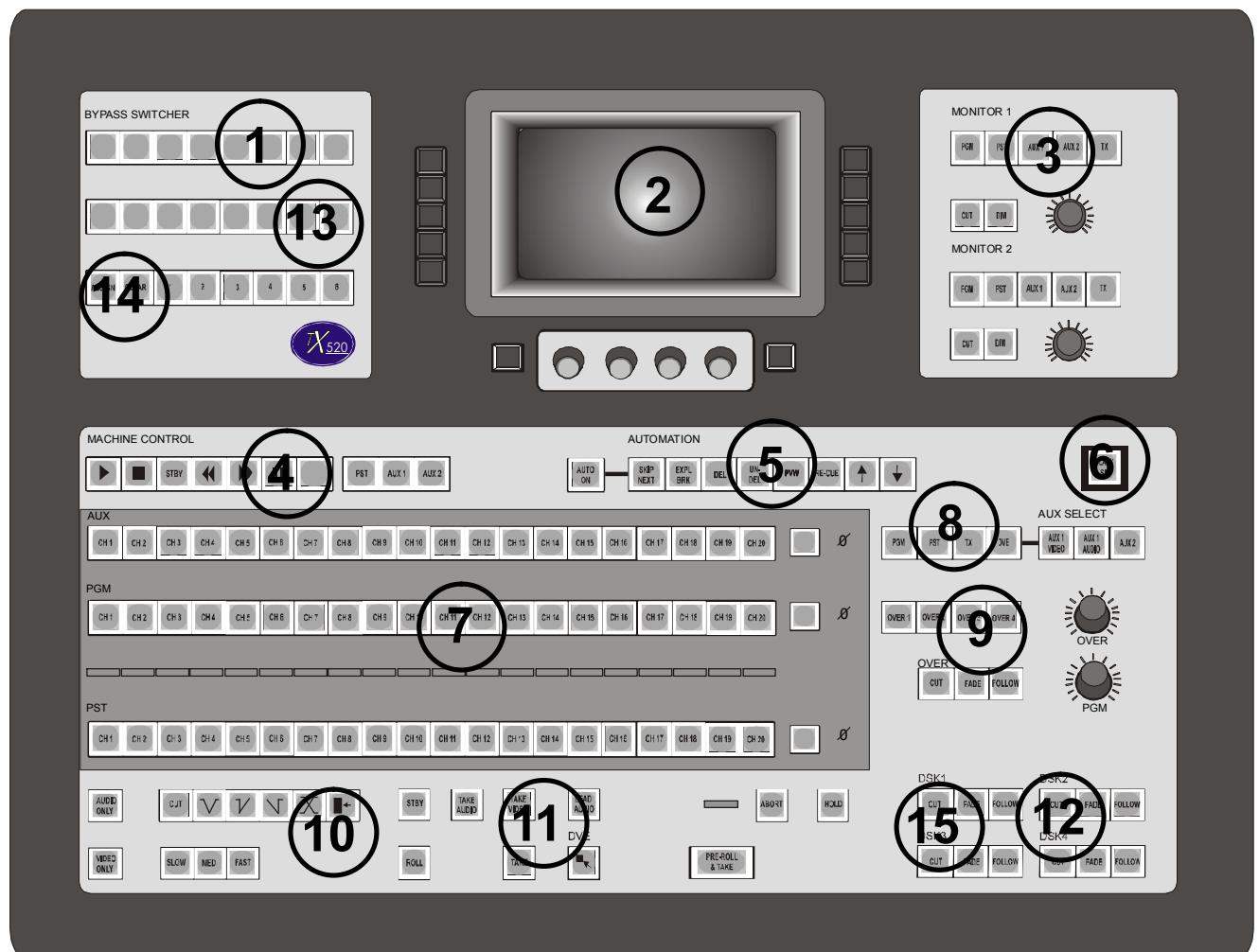
Two auxiliary busses (see chapter 7) allow previewing of sources without affecting the preset or programme selections. Two independent dual channel outputs provide audio monitoring (see chapter 8).

From the TX 520 console, up to three remote machines can be controlled directly (for example, VTRs, laser disks, etc.), or up to 20 sources if the TX 520 is connected to an RS422 router.

The TX 520 can be operated manually or integrated with a station automation system (see chapter 10).

For fail safe operations, an external bypass switcher may be controlled from the TX 520 (see chapter 11).

n 2.1 Layout of the TX 520



The above diagram of the TX 520, shows the buttons and controls that are grouped for various operations. The numbers in the diagram correspond to those included in the following explanations.

The upper console includes:

(1) bypass switcher control and (13) buttons for selecting the audio level to monitor (if the TX 520 is configured for multi-level audio), (14) the buttons for multi-channel control (if connected), (2) the plasma display, and (3) audio monitoring control.

The top row of the lower console includes:

(4) Machine control.

(5) Automation control.

(6) The **<BLACK/SIL>** button, permitting the output to be faded or cut to black/silence.

The centre of the lower console includes:

(7) Source selection busses - AUX, PGM, and PST - and the source name display for all the busses. At the end of each row of source selection buttons, a single small button is used for controlling unity audio gain for that bus.

(8) Buttons for selecting the auxiliary bus (AUX SELECT), either AUX1 or AUX2.

(9) Audio-over control.

The bottom row of the lower console includes buttons for:

(10) selecting a transition type, (11) taking sources to air, to (12) downstream keyers (DSK1 to DSK4) and (15) DVE controls.

n 2.2 Source selection busses

There are four source selection busses, operated through three rows of source buttons, located in the black background on the lower console. The TX 520 can have up to 20 sources accessible to each bus. An additional four sources are available through the auxiliary busses for monitoring independent sources, for example, audio-overs, DSK and DVE previews, etc.

Auxiliary busses

The white keys (AUX) provide access to sources for either of two auxiliary busses (AUX1 or AUX2), depending on which AUX SELECT buttons are lit. The auxiliary busses are used for monitoring sources (see chapter 7).

Programme bus

The red keys (PGM) are the selection buttons for programme, the sources that may be taken to air. Pressing a PGM button takes that source to air immediately.

Preset bus

The yellow keys (PST) are the source selection buttons for the preset. Preset indicates which sources will be on-air when a take is made, lighting up the corresponding sources on PGM (see chapter 3).

n 2.3 Source names

The 4-character alphanumeric name for each source is shown in the row of displays between the red programme (PGM) buttons and the yellow preset (PST) buttons.

The displayed source names can be assigned or changed by using the plasma display (refer to the technical manual). Alternatively, they can be downloaded from:

- A central assignment routing system employing a System 3 controller.
- An external automation system.

n 2.4 Video/audio breakaway

Pressing a single source button on PST or PGM selects married video/audio for that source (provided the **< VIDEO ONLY >** and **< AUDIO ONLY >** buttons are not lit). The button pressed will light at full brightness.

Video/audio breakaway is achieved by using the **<VIDEO ONLY>** or the **<AUDIO ONLY>** buttons. First press the **<VIDEO ONLY>** or the **<AUDIO ONLY>** button followed by a source selection button.

A fully bright source button indicates the selected video source.

A half bright source button indicates the selected audio source.

On AUX1, married or separate video and audio sources are selected using the AUX SELECT buttons (see chapter 7). AUX2 is always married.

n 2.5 The unity gain buttons

To the right of each row of source selection buttons, a single button indicates the status of unity audio gain for the selected source. If the unity gain button is lit, the source is not at unity gain.

The source can be temporarily set to unity audio gain (see chapter 14) by pressing the unity gain button. The button is no longer lit. To permanently correct the source level it is necessary to use a screen on the plasma display to set the values (see chapter 14).

n 2.6 The plasma display

The plasma display, in the middle of the upper console, is used to:

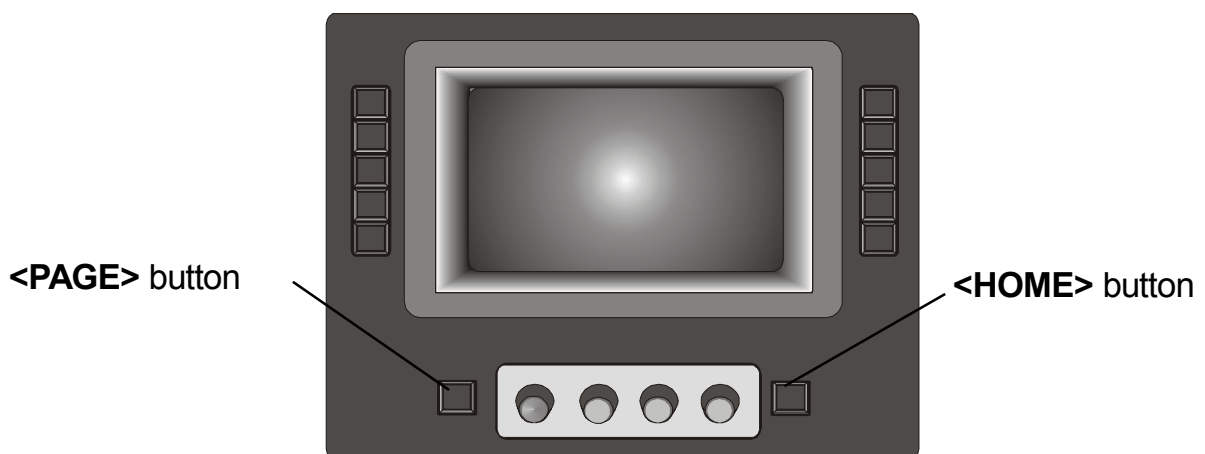
- Monitor audio levels of the source selection busses.
- Define audio, DSK, wipe and DVE setups.
- Configure the TX 520 for the site.

The home screen

The home screen (see chapter 12) is the top level screen. It shows the dual channel audio levels for the busses, a stop watch or timer, and station clock.

It is possible to return directly to the home screen (regardless of the screen currently displayed) by using the **<HOME>** button.

Buttons and controls for the display panel



The row below the plasma display includes, from left to right:

- The **<PAGE>** button. On screens where other pages are available, a small rectangle appears above this button indicating it is active. For multi-level audio systems, pressing the **<PAGE>** button causes the display of audio information (for example, on the home screen) to change from one level to another. For single-level audio systems, this button has no function.
- Four controls, used for selecting values in the various configuration screens. Turning a control clockwise increases the value. Turning it anti-clockwise reduces the value.
- The **<HOME>** button. For operational screens, pressing **<HOME>** once re-displays the home screen.

The square grey buttons in the vertical rows to the left and right of the plasma display change function according to the screen displayed on the panel. Labels for active buttons are shown along the left and right edges of each screen.

For example, on the home screen:

The left vertical column has three buttons for using the stop watch (see chapter 12), and one for accessing the system configuration screens.

The right vertical column includes buttons for moving to other screens: wipe screen (see chapter 13), DSK screen (see chapter 14), and the audio (gain) setup screen (see chapter 15).

n 2.7 Downstream keyers

The TX 520 provides up to four independent downstream keys, DSK1 to DSK4 (see chapter 4). Keys can be cut or faded to air. DSK transitions can also be set to follow the next video or DVE transition.

All DSK's are fully linear and have separate control of clip and gain, as set up using the plasma display.

n 2.8 Optional DVE

An optional DVE is available for the TX 520 (see chapter 5). This provides up to 24 selectable DVE moves for on screen squeeze effects.

n 2.9 Audio-overs

The TX 520 provides powerful audio-over facilities (see chapter 6), using two controls which determine the programme and over levels when the over is cut or faded to air:

- **<OVER>** controls the gain of the over source.
- **<PGM>** sets the level of programme audio to be mixed with the over source.

Any one of four external over sources are available through the TX 520, with each source having its own settings for **<OVER>** and **<PGM>** level.

The over source can be cut or faded to air by pressing a single button. The fade rate is defined through a screen on the plasma display. It can also be set to follow the next video or DVE transition.

n 2.10 Video/audio monitoring

Two auxiliary monitoring busses, AUX1 and AUX2, can be accessed directly from the TX 520 (see chapter 7).

AUX1 can have separate or married video and audio. AUX2 has married video and audio only.

For audio monitoring (see chapter 8), there are two sets of dual channel outputs selecting PGM, PST, AUX1, AUX2, or off-air/external sources. The audio level for each can be cut or dimmed via dedicated buttons, with a variable control for volume

If the TX 520 has been installed to support multi-level audio, eight push buttons allow the selection of the audio level to be heard on the main control system speaker outputs.

The first four buttons allow selection of the stereo audio channel for the monitor 1 speaker. The last four buttons are for selecting those for the monitor 2 speaker.

n 2.11 Machine control

The TX 520 allows control of connected machines (for example, VTRs) either directly through buttons on the control panel console.

Three buttons are used to elect the machine to be operated. The way this works depends on how the TX 520 is installed. The buttons can be dedicated to three directly connected machines or they can be connected to an external router, allowing control of up to 20 machines.

n 2.12 Automation control

If the installation has an automation system (for example, the Pro-Bel Compass System), the following features of the TX 520 can be controlled automatically:

PST source selection.

Transition type and rate.

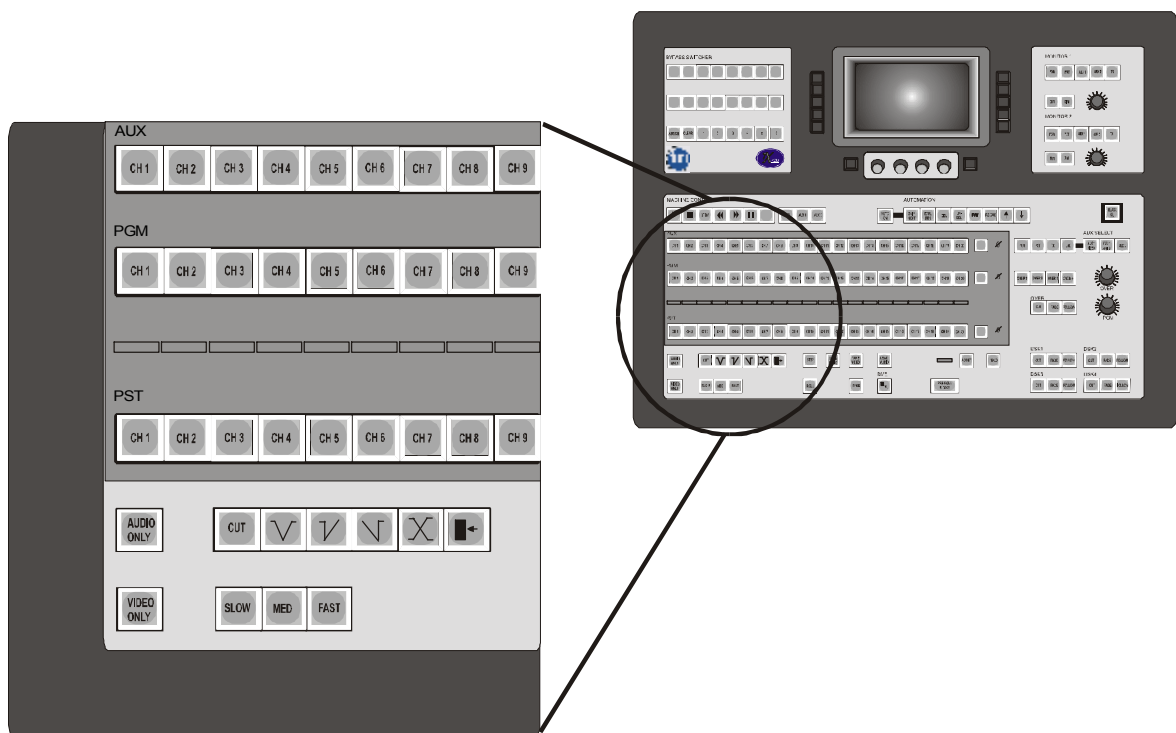
DSK and audio-over.

n 2.13 Bypass switcher control

The TX 520 provides control of an external 8 x 1 bypass switcher independent from the panel and the control system.

3 Making a manual transition

This chapter describes how to set up the next transition manually and take it to air. If the TX 520 is connected to a presentation automation system, for example, Pro-Bel's Compass system, the programme can be setup and taken to air automatically.



In normal operation transitions are made by:

- 1 Selecting the video and audio sources (see chapter 2). These are first selected on the preset (PST) bus.
- 2 Selecting the transition type and speed by pressing white buttons in the bottom row on the lower console.
- 3 If desired, selecting one or both DSKs (see chapter 4) and an audio-over (see chapter 6) to follow the transition.
- 4 Taking the transition by using red buttons in the bottom row on the lower console. A transition can also be held manually.

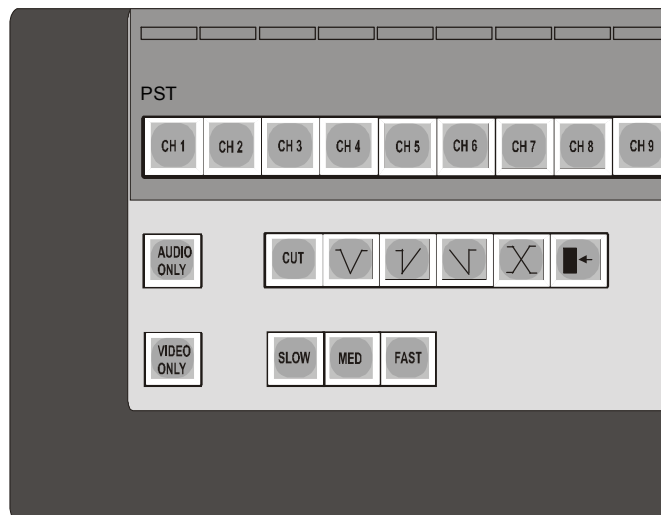
n 3.1 Selecting sources on preset (PST)

It is preferred practice to set up the transition on the preset (PST) bus. The selection can be either select married video/audio from the same source (see Step 1 below), or video and audio from different sources (see Steps 2 and 3).

At the bottom left of the lower console, the **<VIDEO ONLY>** and **<AUDIO ONLY>** buttons are used for setting up video/audio breakaway.

- 1 To select married video/audio, first ensure that neither **<VIDEO ONLY>** nor **<AUDIO ONLY>** is lit. Then press the required source selection button on the PST bus.

The PST source button is lit at full brightness.



- 2 To select only a new video preset, select the video by pressing **<VIDEO ONLY>** to light it, then press the required source button on the PST bus.

The newly selected source button is lit at full brightness indicating video only selection. The original source button is lit at half brightness, indicating audio only.

- 3 To select only a new audio preset, press **<AUDIO ONLY>** to light it and then press the source button on PST from which you want the audio.

The newly selected source button is lit at halfbrightness indicating audio only selection. The original source button is lit at full brightness, indicating video only.

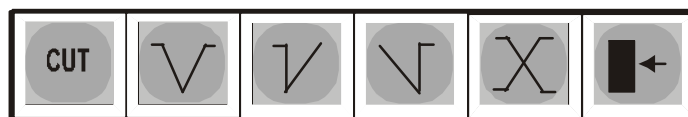
Note: The **<AUDIO ONLY>** and **<VIDEO ONLY>** buttons can be configured to be either manually or automatically cancelled after selection. Refer to the technical manual for details.

3.2 Selecting the transition type and rate

The type and speed of a transition are selected by pressing buttons in the lower console. These buttons are configured using screens on the plasma display. For details refer to the technical manual.

Setting up the transition

The type and speed of transition are selected by pressing the appropriate transition type white button in the bottom row of the lower console.



The available transition types are indicated by the buttons (from left to right):

<CUT> Cut directly to the selected sources without fading or using a wipe.

<V FADE> Fade out the current programme to black and then fade in the new programme.

<TAKE/FADE UP> Cut the current programme and then fade in the new programme.

<FADE DOWN/TAKE> Fade out the current programme and then cut in the new programme.

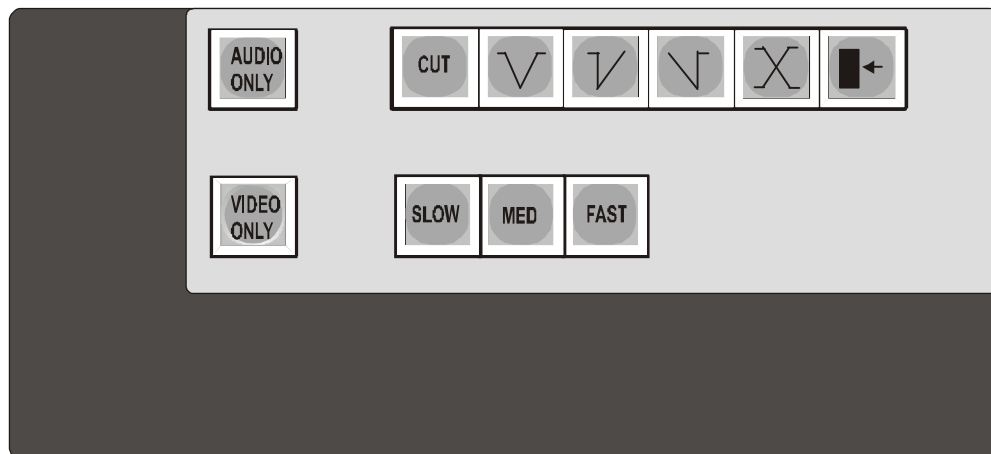
<MIX> Fade out the current programme and at the same time fade in the new programme.

<WIPE> Use the currently set up wipe pattern, direction and softness. The current wipe pattern is shown in the top right of the home screen on the plasma display (see chapter 13).

The audio will perform a mix if **< WIPE >** is pressed for the selected transition.

Note: If a fade transition is selected (either **<V FADE>**, **<TAKE/FADE UP>** or **<FADE DOWN/TAKE>**), and the **<TAKE>** or **<PRE-ROLL&TAKE>** button is pressed and held down, the transition will stay at the intermediate black/silence until the **<TAKE>** or **<PRE-ROLL&TAKE>** button is released.

- 1 Select the type of transition by pressing **<CUT>**, one of the four fade patterns, or **<WIPE>**.



- 2 If **<WIPE>** was selected at step 1, the current wipe pattern shown in the top right-hand corner of the home screen will be used.

To change the wipe pattern, direction or softness, see chapter 13.

- 3 Select the transition rate for a fade or wipe by pressing one of **<SLOW>**, **<MED>** or **<FAST>**.

The selected transition rate button is lit.

Note: The rates in frames per second are displayed on the DSK screen (see chapter 12) To change these rates refer to the technical manual. One or two DSKs (see chapter 4) plus an audio over (see chapter 6) can also be added to the transition.

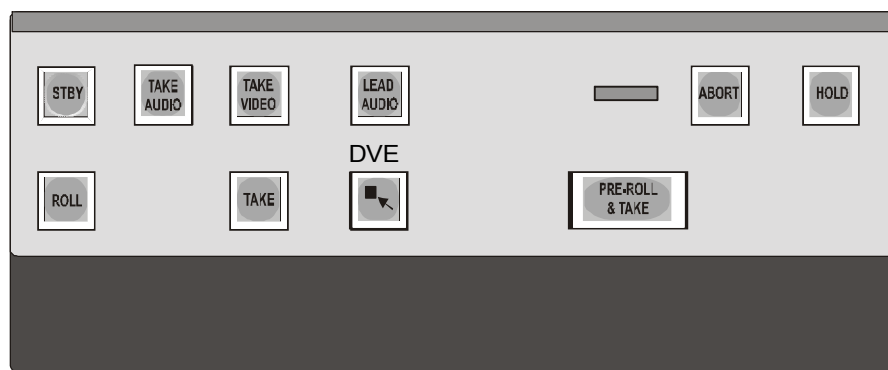
n 3.3 Taking a transition to air

A take replaces the programme on-air with the sources that are preselected on the PST bus. The take uses the transition type and speed that have already been selected.

DSKs (see chapter 4) and an audio-over (see chapter 6) can be set to follow the transition.

Main transition buttons

The red buttons in the centre of the bottom row of the lower console are used to carry out a transition. They are as follows:



<PRE-ROLL & TAKE>

Used to start a machine (for example, a VTR) and take married video/audio to air after a pre-configured delay. The pre-roll countdown timer displays above this button.

When the switcher is automated by Pro-Bel automation, processing the **<PRE-ROLL & TAKE>** button causes the next event to take.

<TAKE>

Used to take video and audio to air at the same time (married).

<TAKE AUDIO>

Used for a take audio operation, performing an audio only transition.

<TAKE VIDEO>

Used for a take video operation, performing a video only transition.

<LEAD AUDIO>

Used to mix the preset audio with the current programme audio, leaving the current video on air until **<TAKE>** is pressed.

Note: When any of the above buttons are pressed, the preselected source button(s) light up on the PGM bus row (red buttons). If flip-flop mode is inactive, the PST source remains lit. If flip-flop mode is active the previous PGM source will light up on the PST row after the transition. To configure flip-flop, refer to the technical manual.

Additional transition buttons

In addition to the red transition buttons there are three white transition buttons in the centre of the bottom row of the lower console. These are as follows:

<ROLL>

Used for manually rolling a machine, for example, a VTR, independently of actually taking the transition to air.

When the switcher is automated by Pro-Bel automation, processing the **<PRE-ROLL & TAKE>** button causes the next event to take..

<ABORT>

Used for aborting a transition after the **<PRE-ROLL & TAKE>** button has been pressed. The pre-roll countdown timer will reset.

(Only when manually controlling VTR's i.e. Auto is OFF)

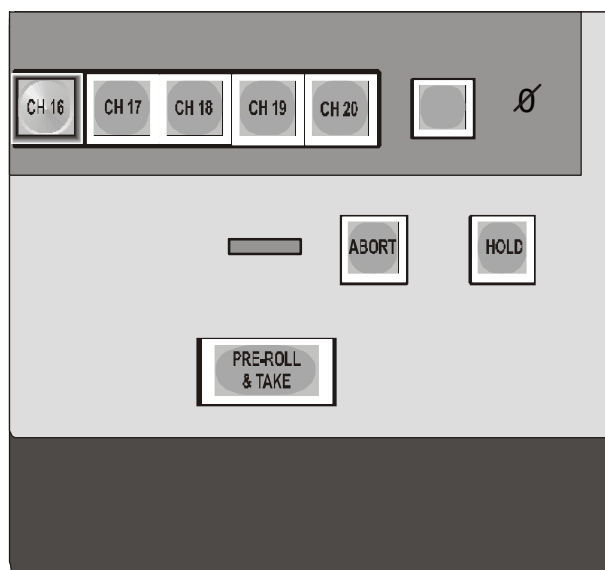
<HOLD>

Used to manually suspend a transition set by an automation system until the **<HOLD>** button is pressed again to release it. For example, if the current on-air programme overruns its scheduled duration it may be necessary to manually control when the next transition will be made.

n 3.4 Taking married video/audio with a pre-rolled machine

- 1 Select the required source to the PST bus. To take the transition in one step, including pre-rolling the machine, press **<PRE-ROLL & TAKE>**.

*The machine is started. The red PGM source buttons light after the pre-configured ROLL time, corresponding to the sources pre-selected on PST. The pre-roll time is displayed in the window above the **<PRE-ROLL & TAKE>** button. The transition is made using the type and speed shown by the lit transition setup buttons.*



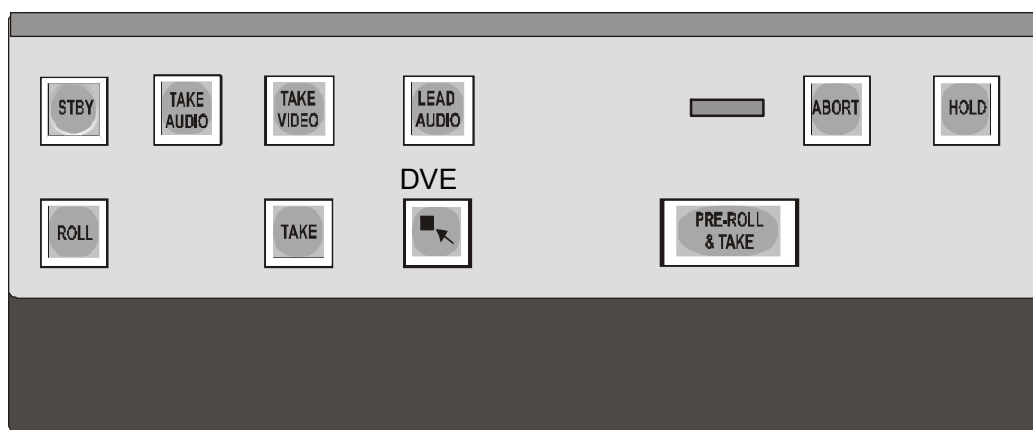
- 2 To abort the transition once a pre-roll has started, press the **<ABORT>** button next to the countdown timer.

The transition is aborted and the pre-roll countdown timer resets. The PGM and PST sources remain unchanged.

n 3.5 Taking married video/audio with a manually rolled machine

- 1 Select the required source to the PST bus. Roll the machine manually by pressing **<ROLL>**.

The machine is started, as shown on the PST monitor.



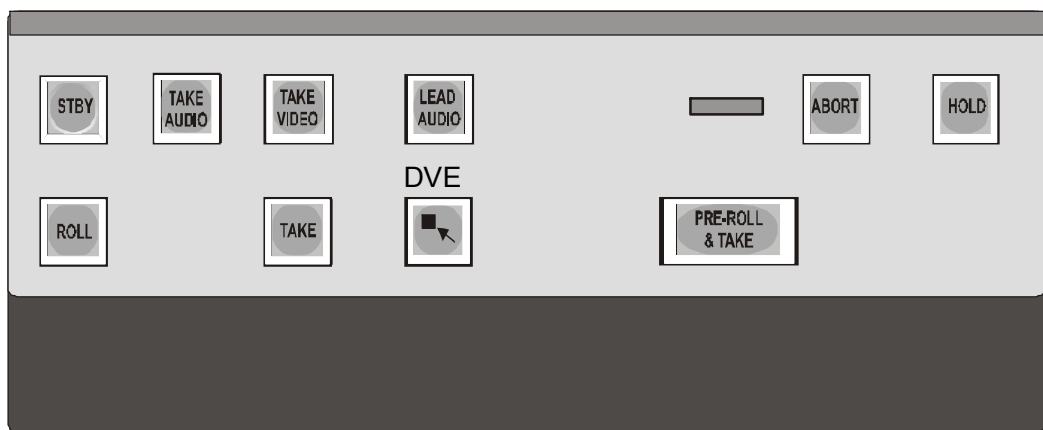
- 2 Press **<TAKE>** to take the married video/audio to air.

The red PGM source buttons light, corresponding to the sources pre-selected on PST. The transition is made using the type and speed shown by the lit transition setup buttons.

n 3.6 Leading in audio before video

- 1 Select the required source to the PST bus. If applicable, roll the machine (for example, a VTR) manually by pressing **<ROLL>**.

The machine is started, as shown on the PST monitor.



- 2 Press **<LEAD AUDIO>** to bring in the new audio source over the current video and audio.

*The new audio will mix with the current audio, instead of replacing it, until the video is taken. The **<LEAD AUDIO>** button will remain lit.*

- 3 When desired, press **<TAKE>** to take the pre-selected video to air.

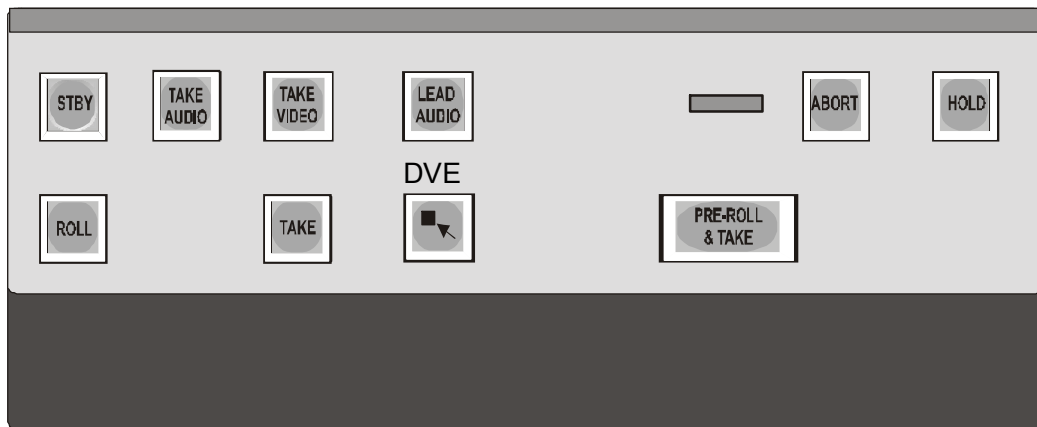
The red PGM source button lights at full brightness, corresponding to the button pre-selected for video on PST. The transition is made using the type and speed shown by the lit transition setup buttons.

Note: The lead audio can, at any time be taken off air by pressing **<LEAD AUDIO>** again.

n 3.7 Manually holding an automated transition

- 1 If necessary, a transition that is scheduled and controlled by an automated presentation system can be delayed by pressing **<HOLD>**.

*The **< HOLD>** button lights. The on-air sources do not change (that is, the next transition is not taken) until **< HOLD>** is pressed again to release it.*



n 3.8 Manually taking an automated transition

- 1 If necessary, a transition that is scheduled and controlled by an automated presentation system can be taken to air early by pressing **<PRE-ROLL & TAKE>**.

The preset source is taken to air.

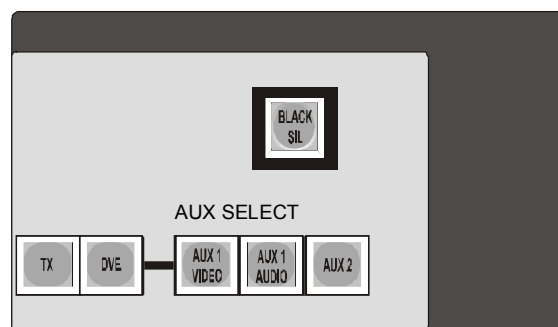
n 3.9 Switching on-air to black/silence

The TX 520 transmission on-air can be replaced with black/silence at any time by pressing a single key.

The black can be positioned before or after DSK 2 and the fade rate can be configured to be between 0 (cut) and 99 frames. Refer to the technical manual.

- 1 Press the **<BLACK/SIL>** button in the top right-hand corner of the lower console.

*The **<BLACK/SIL>** button lights up as the on-air output from the TX 520 fades to black/silence. The **<BLACK/SIL>** button flashes when the fade to black/silence is complete.*



- 2 To return the sources currently selected on the TX 520 to air, press the **<BLACK/SIL>** button.

*The current sources on the PGM bus, the audio setting, and any DSKs and audio-over currently cut in, are faded back in again. The **<BLACK/SIL>** button lights while the transition is in progress and goes out when complete.*

Black/silence remains in effect until it is cancelled by pressing the button again. Black/silence is not cancelled by a transition or by hot cutting a programme to air.

The black/silence transition can be completed early by pressing the button again.

4 Using downstream keyers

A downstream keyer (DSK) enables images such as captions and logos to be displayed on top of the programme. The TX 520 provides two DSKs.

The DSK controls are located at the bottom right of the lower console.

n 4.1 Manually taking a DSK to air

One or both DSKs can be taken to air at any time manually if a transition is not in progress.

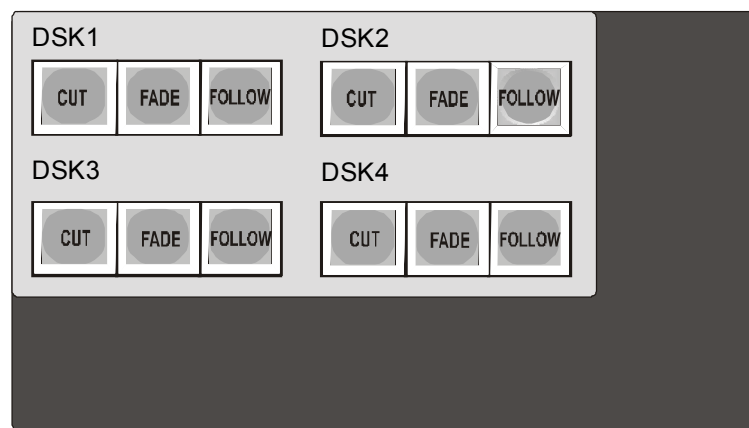
If the **<CUT>** button is lit, the DSK is already on-air.

If the **<FOLLOW>** button is flashing, then the DSK is set to follow the next video or DVE transition. If the DSK is then manually taken to air the button will remain flashing, indicating that it will come off air at the next transition.

1 Press the **<CUT>** or **<FADE>** button for the DSK.

*The **<CUT>** button is lit while the DSK is on-air.*

*The **<FADE>** button is lit while a fade is in progress. The fade can be completed early by pressing **<CUT>**.*



n 4.2 Taking a DSK from air

One or both DSKs can be taken from air at any time manually if a transition is not in progress.

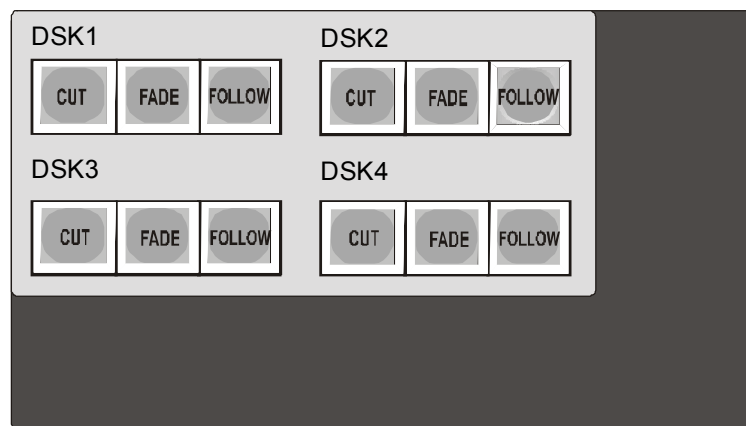
The method of taking a DSK from air is independent of the way it was taken to air.

If the **<CUT>** button is not lit, the DSK is already off-air.

If the **<FOLLOW>** button is flashing the DSK is set to follow the next video or DVE transition. This is cancelled by manually taking the DSK from air.

- 1 Press the **<CUT>** or **<FADE>** button for the DSK.

*The **<FADE>** button is lit while a fade is in progress. The fade can be completed early by pressing **<CUT>**.*

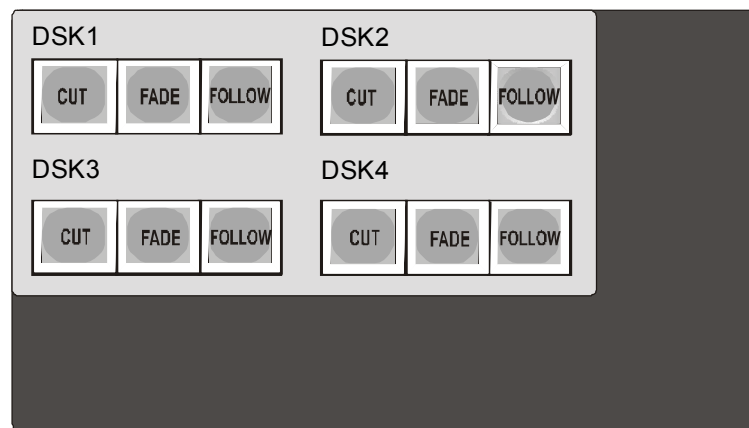


n 4.3 Setting the DSK to follow the next transition

Either or both DSKs can be set to activate at the time of the next video PST/PGM video or DVE transition. If a DSK has been manually taken to air it, it can be 'followed' off. If it has been 'followed' on, it can be manually taken off. The follow function cancels after it has been taken off air.

- 1 Press the **<FOLLOW>** button for the DSK.

*The **<FOLLOW>** button will flash. At the next video or DVE transition the DSK will go on or off depending on its status before the **<FOLLOW>** button was activated. The **<FOLLOW>** button will continue to flash until the DSK is off air.*

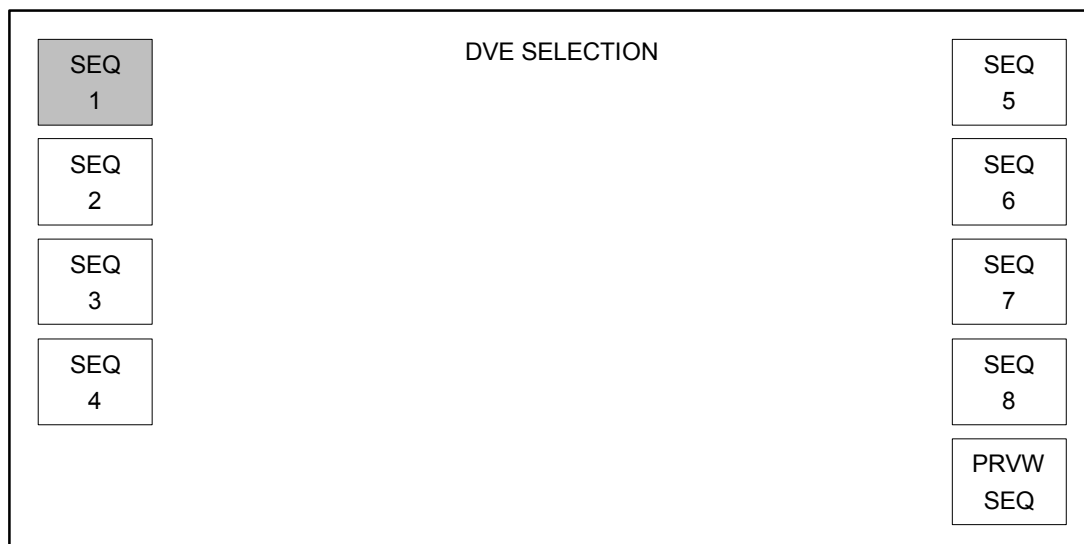


- 2 To cancel the DSK from following the next transition, press the **<FOLLOW>** button for the DSK so that it is unlit.

5 Using the DVE

The DVE screen on the plasma display permits selection of the next DVE sequence to be controlled from the panel. Any changes which may occur from the main control system to the DVE configuration are actively updated on the page when it is visible.

Pressing the **<HOME>** button returns the system to the main audio metering page. Pressing the **<PAGE>** button scrolls through the available DVE selection pages. There are 24 available sequences in total. Page 1 shows sequences 1 - 8, page 2 sequences 9 - 16 and page 3 sequences 17 - 24.



It is possible to set both DSKs (see chapter 4) and an audio-over (see chapter 6) to follow on/off with the DVE move.

n 5.1 Selecting a DVE sequence

Pressing the **<DVE SEQ n>** push button selects the corresponding sequence (numbered 'n') from the DVE. The selected sequence button remains highlighted. It is not possible to change a sequence once activated either on air or previewing. If either the **<DVE>** or **<PRVW SEQ>** button is lit the DVE is in use.

- 1 From the home screen, press the **<DVE SEQ n>** button

The first page of the DVE selection screen is displayed.

- 2 To select a sequence press the **<PAGE>** button until the required sequence number is visible. Select the sequence number.

*The selected sequence will be highlighted. To return to the home page, press **<HOME>**. The newly selected sequence will be shown in the **<DVE SEQ n>** box.*

n 5.2 Previewing a DVE sequence

Pressing the **<PRVW SEQ>** button previews the selected DVE sequence. While the sequence is being previewed the preview push button remains highlighted. It is not possible to preview a sequence whilst another move is activated or if the DVE is currently on air.

- 1 To select the sequence to preview refer to section 5.1.

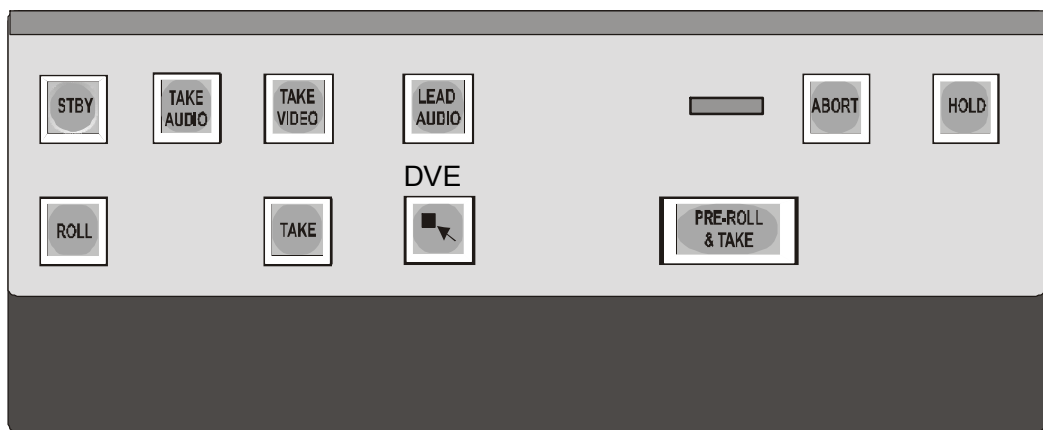
- 2 Press the **<PRVW SEQ>** button

*The **<PRVW SEQ>** button will remain lit until pressed again to cancel the previewing.*

n 5.3 Taking a DVE sequence to air

- 1 To select the sequence to take to air refer to section 9.1.
- 2 Press the red <DVE> button.

The selected DVE move will be activated on air. The <DVE> button lights up as the DVE move is in action. The <DVE> button flashes when the move is complete until the move is taken off air.



n 5.4 Taking a DVE sequence from air

The DVE move can be taken off air by either:

- 1 Press the red <DVE> button whilst lit.

The selected DVE move will be taken off air by completing the reverse move. The <DVE> button lights up as the DVE move is in action and then is extinguished once the move is off air.

- 2 Activating a PST/PGM transition. See chapter 3.

Caution: *The selected DVE move will be cut off air.*

6 Using audio-overs

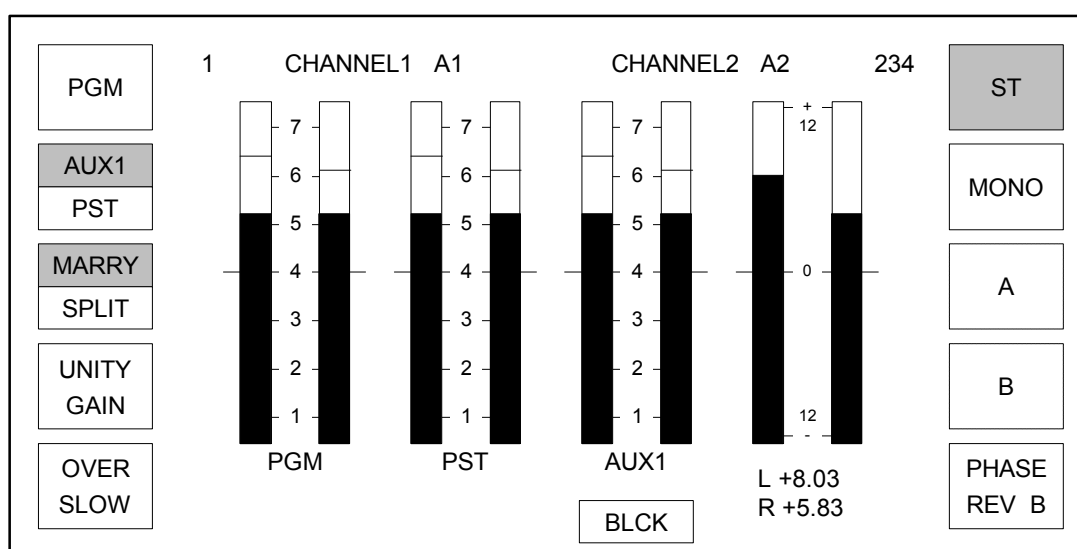
Four audio-overs are provided on the TX 520 enabling sound to be added over the on air programme audio. The audio-over control section is in the lower right hand section of the panel.

An audio-over can be cut or faded to and from air or can be set to follow the next audio or DVE transition. Only one audio-over can be on-air at a time.

To use an audio-over:

- 1 If required, configure the transition rate.
- 2 If required, adjust the level of audio-over to programme, using the OVER and PGM controls in the audio-over panel.
- 3 Preview the audio-over.
- 4 Take the audio-over to air by either cutting, fading or following on.
- 5 Take the audio-over from air by either cutting, fading or following off.

The audio setup screen is accessed from the plasma display home screen (see chapter 12) by pressing the **<AUDIO SETUP>** button on the right. To return to the home screen, press **<HOME>**.



<OVER rate> is used to select the fade rate for the over by pressing the button. The rate toggles between slow, medium and fast.

n 6.1 Setting up audio-overs

The audio setup screen allows the over fade rate to be set.

- 1 From the home screen, press the **<AUDIO SETUP>** button (see chapter 12).

The audio setup screen is displayed.

- 2 To select the over fade rate, press the **<OVER rate>** button until the required speed is displayed.

*The display toggles between **<SLOW>**, **<MED>**, and **<FAST>**.*

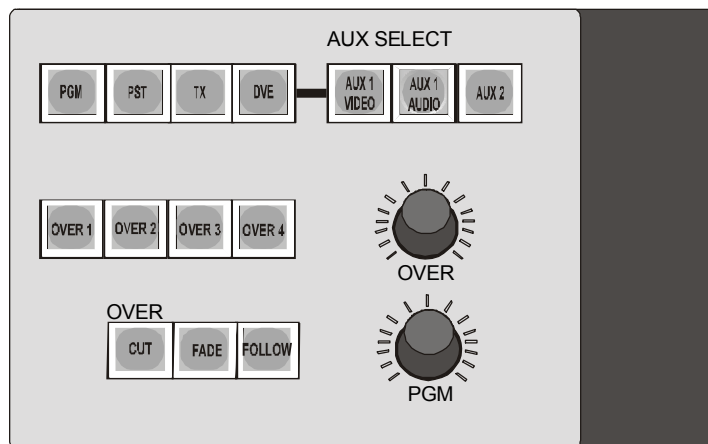
Note: The rates are the same as the main video and audio transition rates. The over adopts the same rate as the audio transition when set to follow.

n 6.2 Adjusting the audio-over levels

Caution: If the <CUT> button is lit, audio-over is on-air and the audio-over level controls will affect the programme audio.

- 1 Select an audio-over source by pressing one of the four white <OVER> buttons.

The selected over button will light.

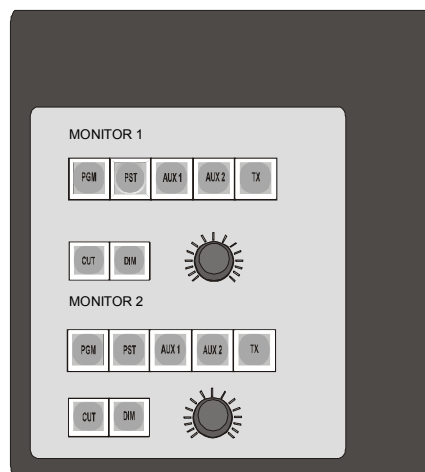


- 2 To adjust the level of audio-over, turn the <OVER> control to the required setting (usually maximum, fully to the right). On maximum setting there is no level reduction of the audio-over level.
- 3 To adjust the programme level, turn the <PGM> control to the setting required.

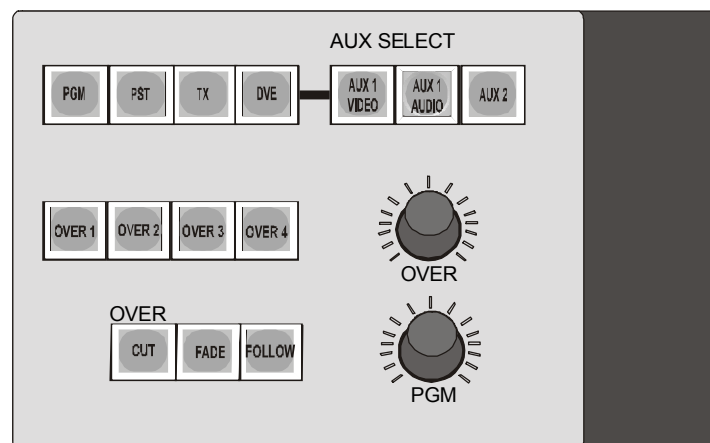
6.3 Previewing an audio-over

It is possible to pre-listen to an audio-over before taking it to air.

- 1 Select **<PST>** to the loudspeakers (see chapter 8).



- 2 Press and hold down the required audio-over source.



- 3 The PST audio monitor will switch to a mix of the audio-over and the source selected on the PST bus. The PPM will display the mix. The **<OVER>** control and the **<PGM>** control can be adjusted to the required setting which will be stored for each over source.

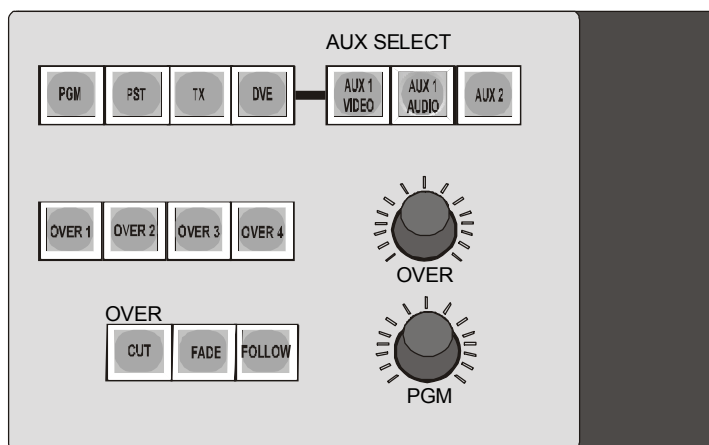
n 6.4 Taking an audio-over to air

It is possible to take an audio-over to air at any time, including when a transition is in progress. The over can be either cut or faded to air or set to follow the next audio or DVE transition, depending on which control is used.

- 1 Press the **<CUT>** or **<FADE>** button in the audio-over control section.

*The **<CUT>** button is lit while the audio-over is on-air.*

*The **<FADE>** button is lit whilst a fade is activated The fade can be completed early by pressing **<CUT>**.*



n 6.5 Taking an audio-over from air

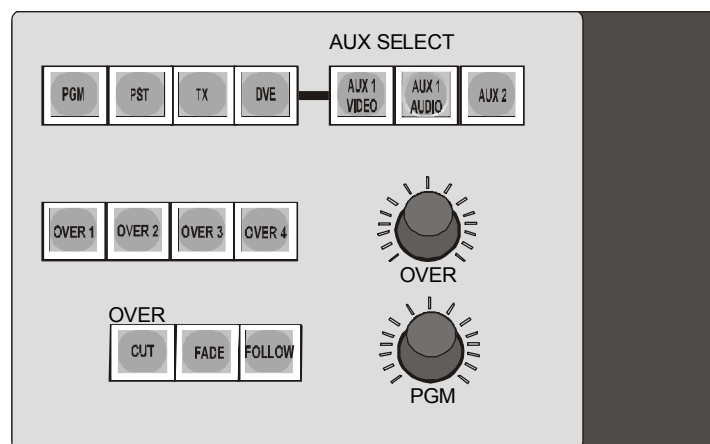
It is possible to take an audio-over from air at any time, including when a transition is in progress.

If the **<CUT>** button is not lit, the audio-over is already off-air.

- 1 Press the **<CUT>** or **<FADE>** button in the audio-over control section.

*The **<CUT>** button goes out when the audio-over is no longer on-air.*

*The **<FADE>** button is lit whilst a fade is activated. The fade can be completed early by pressing **<CUT>**.*

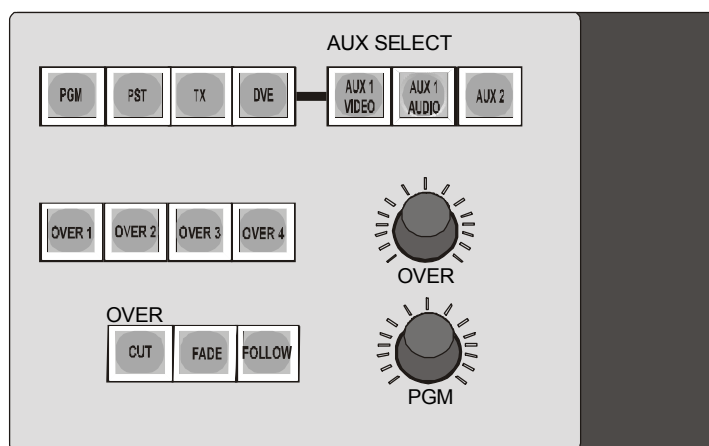


6.6 Setting the audio-over to follow the next transition

An audio-over can be set to follow the next audio PST/PGM transition or DVE move. If an audio-over has been manually taken to air, it can be 'followed' off. If it has been 'followed' on, it can be manually taken off. The follow function cancels after it has been taken off air.

- 1 Press the **<FOLLOW>** button for the audio-over

*The **<FOLLOW>** button will flash whilst active and will continue to flash until the over is off air. At the next transition the audio-over will go on or off depending on its status before the **<FOLLOW>** button was activated.*



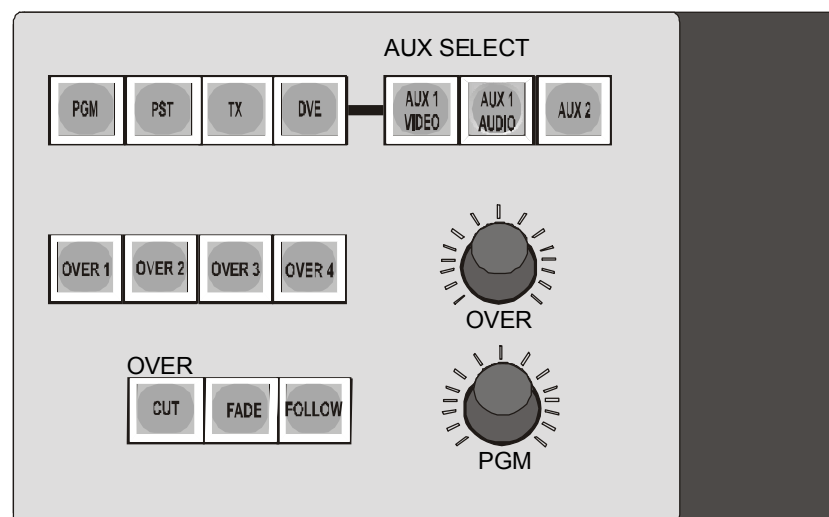
- 2 To cancel the audio-over from following the next transition, press the **<FOLLOW>** button so that it is unlit.

7 Monitoring using the AUX busses

The TX 520 provides two auxiliary busses for monitoring sources without affecting the on-air sources or those that are pre-selected for the next transition.

Sources for the auxiliary busses are selected from the top row of white buttons on the source selection panel in the lower console. The AUX SELECT panel buttons (on the right) let you choose whether sources selected apply to the AUX1 or AUX2 bus.

On AUX1, sources selected can be married or separate audio/video. AUX2 always has married sources.



n 7.1 Monitoring sources via AUX1

- 1 To monitor married sources on the AUX1 bus, ensure that both the **<AUX1 VIDEO>** and **<AUX1 AUDIO>** buttons are lit and then press the white button in the AUX row for the required source.

*The source button is lit at full brightness and the **<AUX1 VIDEO>** and **<AUX1 AUDIO>** buttons remain lit.*

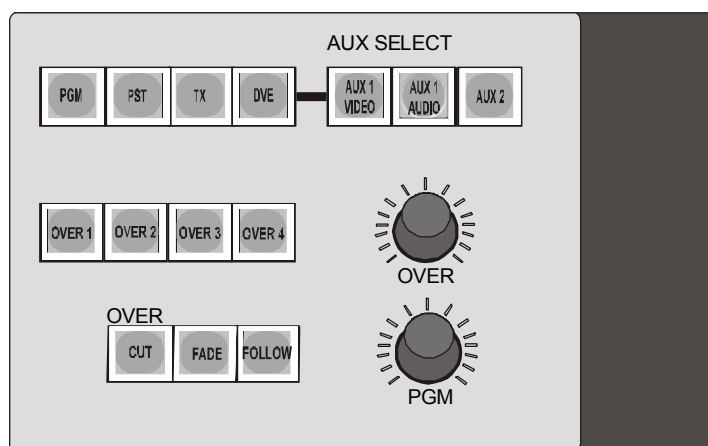
- 2 To monitor video and audio from separate sources on the AUX1 bus:

- a) To select a new video source, ensure that the **<AUX1 AUDIO>** button is OFF (unlit) and then press the source button for video in the AUX row.

*The newly selected source button is lit at full brightness indicating video only selection and the **<AUX1 VIDEO>** is lit. The original source button is lit at half brightness, indicating audio only.*

- b) To select a new audio source, ensure that the **<AUX1 VIDEO>** button is OFF (unlit) and then press the source button for audio in the AUX row.

*The newly selected source button is lit at half brightness indicating audio only selection and the **<AUX1 AUDIO>** is lit. The original source button is lit at full brightness, indicating video only.*

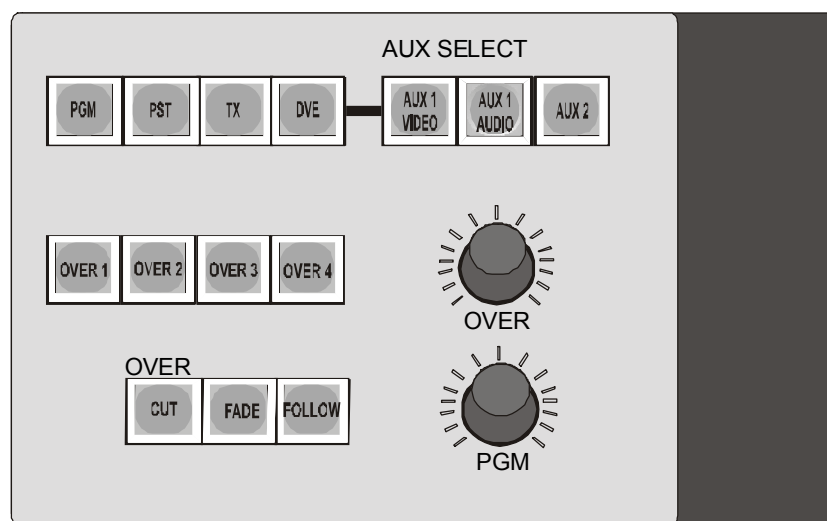


n 7.2 Monitoring sources via AUX2

Only married sources can be monitored via AUX2.

- 1 To monitor married sources on the AUX2 bus, press the **<AUX2>** button in the AUX SELECT panel then press the white button in the AUX row for the required source.

*The source button is lit at full brightness and the **<AUX2>** button is lit.*



8 Using the audio monitoring

The home screen (see chapter 12) on the plasma display dynamically shows the level for the audio source currently selected on PGM, PST, AUX1 and one off-air/external source.

In addition, the TX 520 provides two dual channel audio monitor outputs for use at any time for monitoring a source selected on a bus or listening to the off-air/external input. The audio monitoring buttons and controls are on the right of the upper console.

Any selections made on the audio monitor panel have no effect on the programme on-air. If the source is selected on the PGM, PST or AUX1 bus, the sound heard is modified by selections made on the audio (gain) setup screen on the plasma display (see chapter 15).

MONITOR 1 and MONITOR 2 each have independent volume controls **<CUT>** (no sound) and **<DIM>** (reduced volume) buttons. These buttons can be configured with either the two keys mutually exclusive or **<DIM>** becoming cut right and **<CUT>**, cut left. Refer to the technical manual for details.

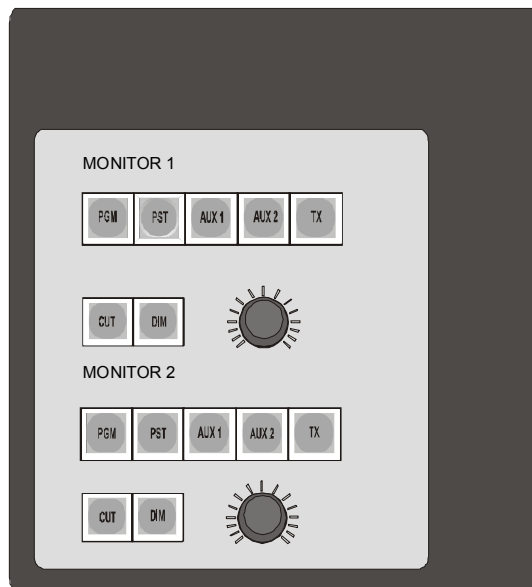
For multi-level systems, the audio level to be heard on the TX 520 speaker outputs can be selected (see chapter 16).

8.1 Monitoring an audio source

To monitor an audio source using either MONITOR 1 or MONITOR 2:

- 1** Press either **<PGM>**, **<PST>**, **<AUX1>** or **<AUX2>** for monitoring a source, or press **<TX>** for return monitoring.
- 2** If the audio for a different source is to be monitored on the selected bus, press a different source button.

Caution: Pressing a **PGM** button changes the programme on-air.



- 3** Adjust the volume of the monitor output by using the control or the **<CUT>** or **<DIM>** buttons.

Turning the control clockwise increases volume.

*Pressing **<CUT>** cuts the volume completely and lights the button.*

Pressing it again brings it back at full volume, as set by the control.

*Pressing **<DIM>** lowers the volume and lights the button.*

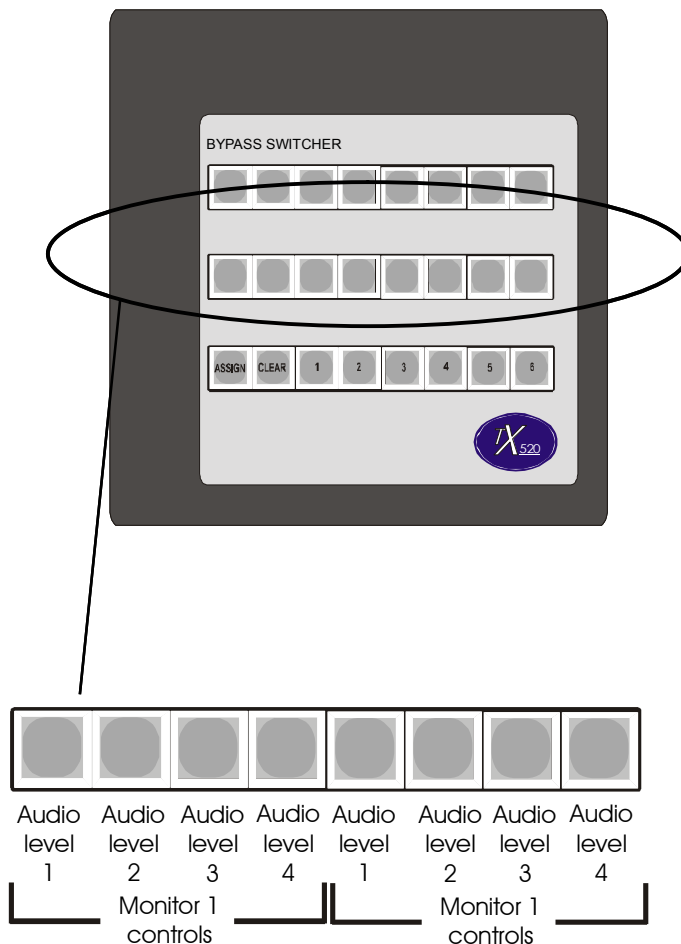
Note: *If the buttons are configured to be cut left and cut right then when **<CUT>** is lit, the left is cut and when **<DIM>** is lit the right is cut. These act independently and one or both can be on/off at any time.*

8.2 Monitoring in multi-level environment

The centre row of push buttons on the left in the upper console allow the selection of the audio level to be heard on the speaker outputs.

- 1 To select the level for monitoring, press one of the first four buttons to select the required audio level to monitor 1 or press one of the last four buttons to select the required audio level to monitor 2.

The selected button for monitor 1 or 2 will illuminate.

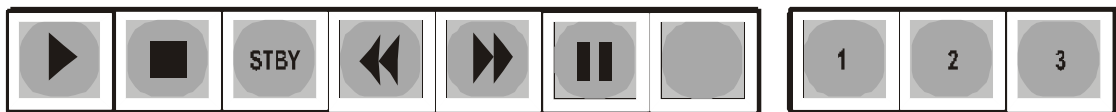


Note: In single level audio systems this function is inactive

9 Using machine control

The TX 520 has a set of buttons for controlling devices, such as VTRs, directly from its console. The machine control panel can be used to preview material before it is taken to air.

The machine control panel is located in the top left row on the lower console.



The first six buttons - which correspond to **<START>**, **<STOP>**, **<STBY>**, **<PREV>**, **<NEXT>**, **<PAUSE>** - are command buttons, used for operating the selected device. They correspond to buttons on the machine itself.

The next three buttons - **<1>**, **<2>**, **<3>** - are used to select the device you wish to operate. This varies according to the installation at your site. The machine control panel can be connected to :

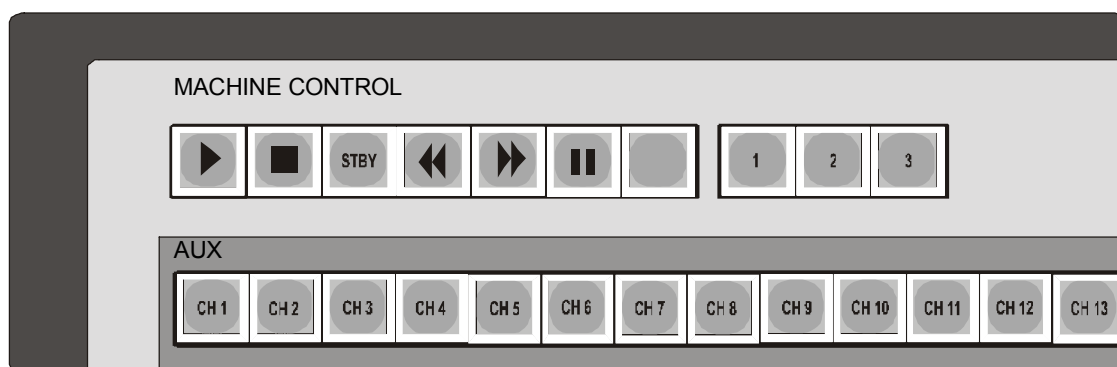
- either three dedicated devices. In this case, the **<1>**, **<2>**, **<3>** buttons each correspond to a different machine (see section 9.1).
- or up to 20 devices, via a router. In this case, the machine to be controlled is connected through one of the source busses, and then the buttons are labelled **<PST>**, **<AUX1>**, and **<AUX2>** (see section 9.2). This is only available when the system is NOT under automation control, or if the AUTO control is OFF.

n 9.1 Controlling a dedicated machine

If the TX 520 is directly connected to devices, the machine to be controlled can be selected by pressing one button.

- 1 Press either <1>, <2>, or <3> on the machine control panel to select the device to be controlled

The button lights up to show which machine you are controlling.

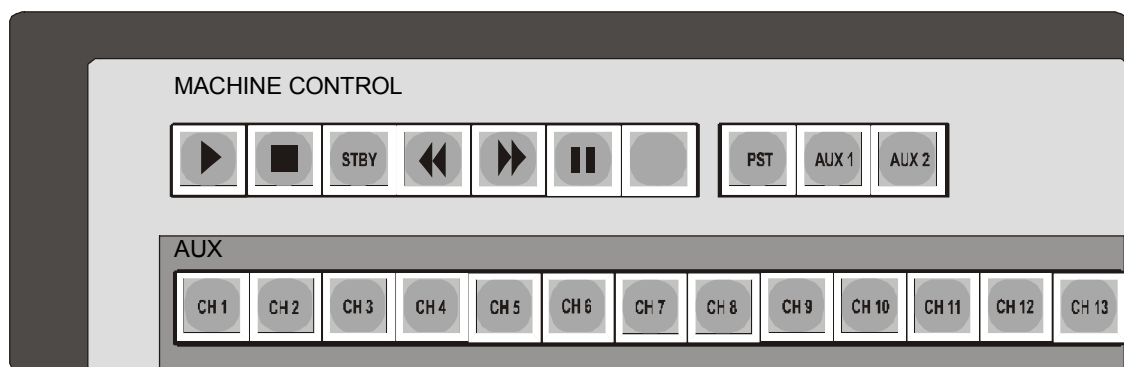


- 2 Use the six command buttons on the machine control panel, as required to control the device.

n 9.2 Controlling a routed machine

If the devices are connected via a router, to select the machine first select an input bus. Then select the source on that bus corresponding to the machine to be controlled

- 1 Select the input bus to control by pressing the **<PST>**, **<AUX1>** or **<AUX2>** button on the machine control panel.



- 2 Select the required source by pressing the button in the row corresponding to the bus selected in Step 1.
- 3 Use the six command buttons on the machine control panel, as required, to control the device.

Note: Machines selected on the can be 'pre-rolled' and 'taken' to air using either the **<ROLL>** then **<TAKE>** button on the **<pre-roll/take>** button.

10 Using the TX 520 under automation

The TX 520 is designed to facilitate simple integration with a wide range of station automation systems, like Pro-Bel's Compass System.

A single button on the TX 520 controls connection to the automation system. The automation control section is located in the top row of the lower providing full manual intervention with the automation system. The <**HOLD**> (see section 3.7) and <**STBY**> buttons (see section 2.12) are also part of this group of buttons..



If there is an automation system connected to the TX 520, it can control these functions:

PST source selection.

Transition type and rate.

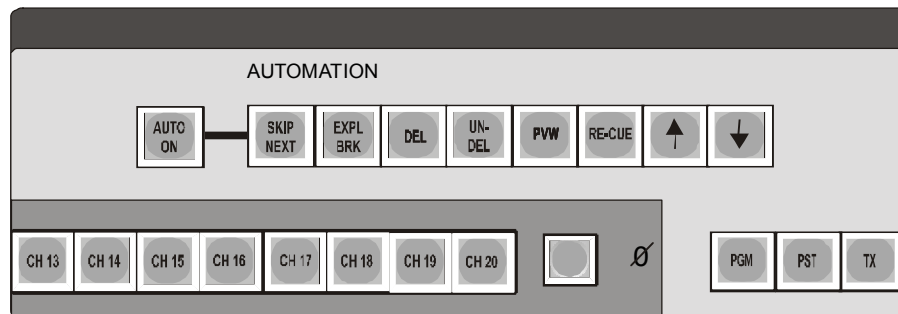
DSK and audio-over.

Note: The above functions are specific to Pro-Bel's Compass or Sextant systems and are not necessarily applicable if the TX 520 is under control from other automation systems.

These buttons are inoperative if not connected to an automation system.

- 1 To turn on automation control of TX 520 functions, press the **<AUTO ON>** button in the automation panel.

*The **<AUTO ON>** button lights up, the automation system is now active.*



- 2 To turn off automation control of TX 520 functions, press the **<AUTO ON>** button in the automation panel when it is lit.

*The **<AUTO ON>** button is extinguished.*

11 Using the bypass switcher control

It is recommended that the TX 520 is connected to an external bypass switcher so that some sources have alternative routes to air that bypass the TX 520.

The bypass switcher panel is located in the upper console on the left.

All inputs to the bypass switcher should be married video/audio.

If a bypass switcher is connected to the bypass switcher control panel, then during normal use the router input fed with the TX 520 programme output should be selected. Pressing one of the other buttons selects an alternative source on the bypass switcher and thus the TX 520 is no longer on-air.

When the TX 520 output is not selected on the bypass switcher, any transitions made by the TX 520 will not affect the output of the bypass switcher.

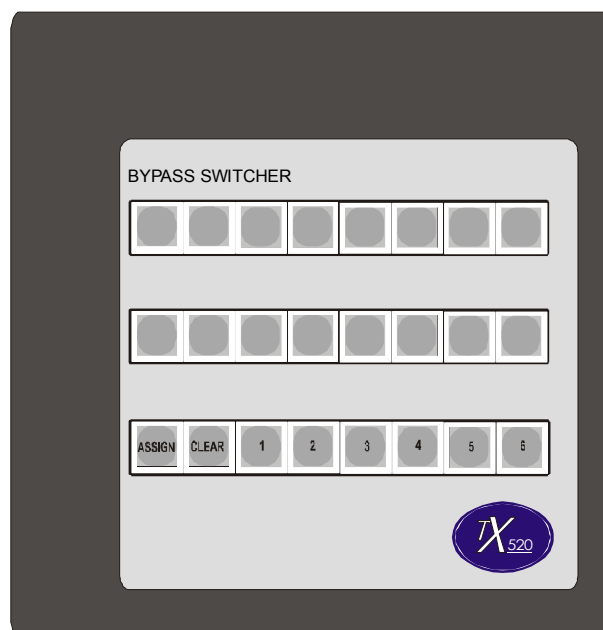
If an external bypass switcher is not used then the bypass switcher control panel can be used to control an independent 8x1 switcher.

11.1 Using the bypass switcher panel

- 1 Press a button on the bypass switcher panel to take that source to air immediately.

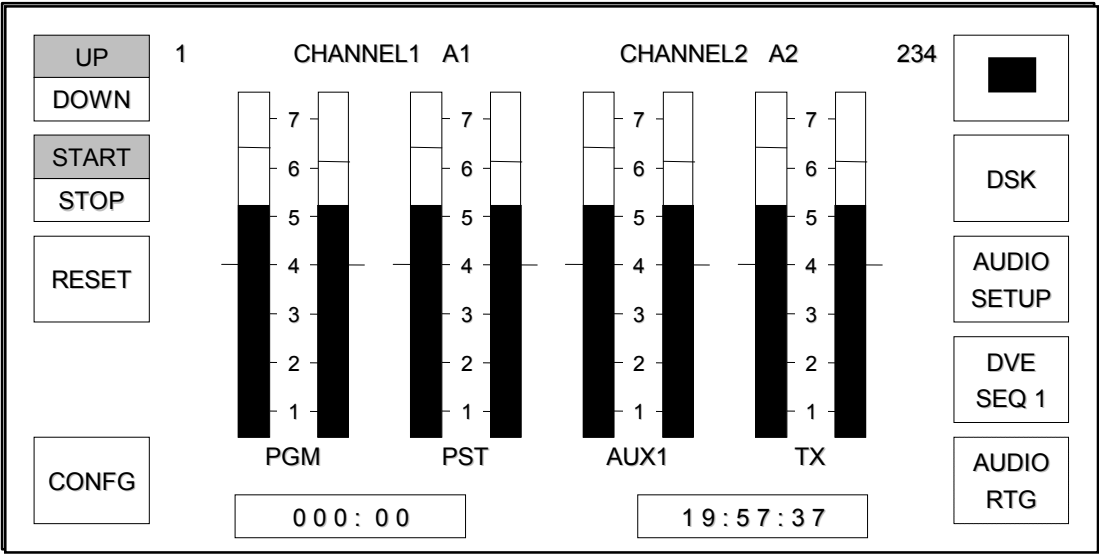
If the old source was the TX 520 output, the TX 520 is switched from air, so any current audio settings, DSKs and audio-over on the TX 520 are no longer transmitted.

If the new source is the TX 520 output then the sources on the PGM bus, the audio setting, and any DSKs and audio-over selected on the TX 520 are cut to air immediately.

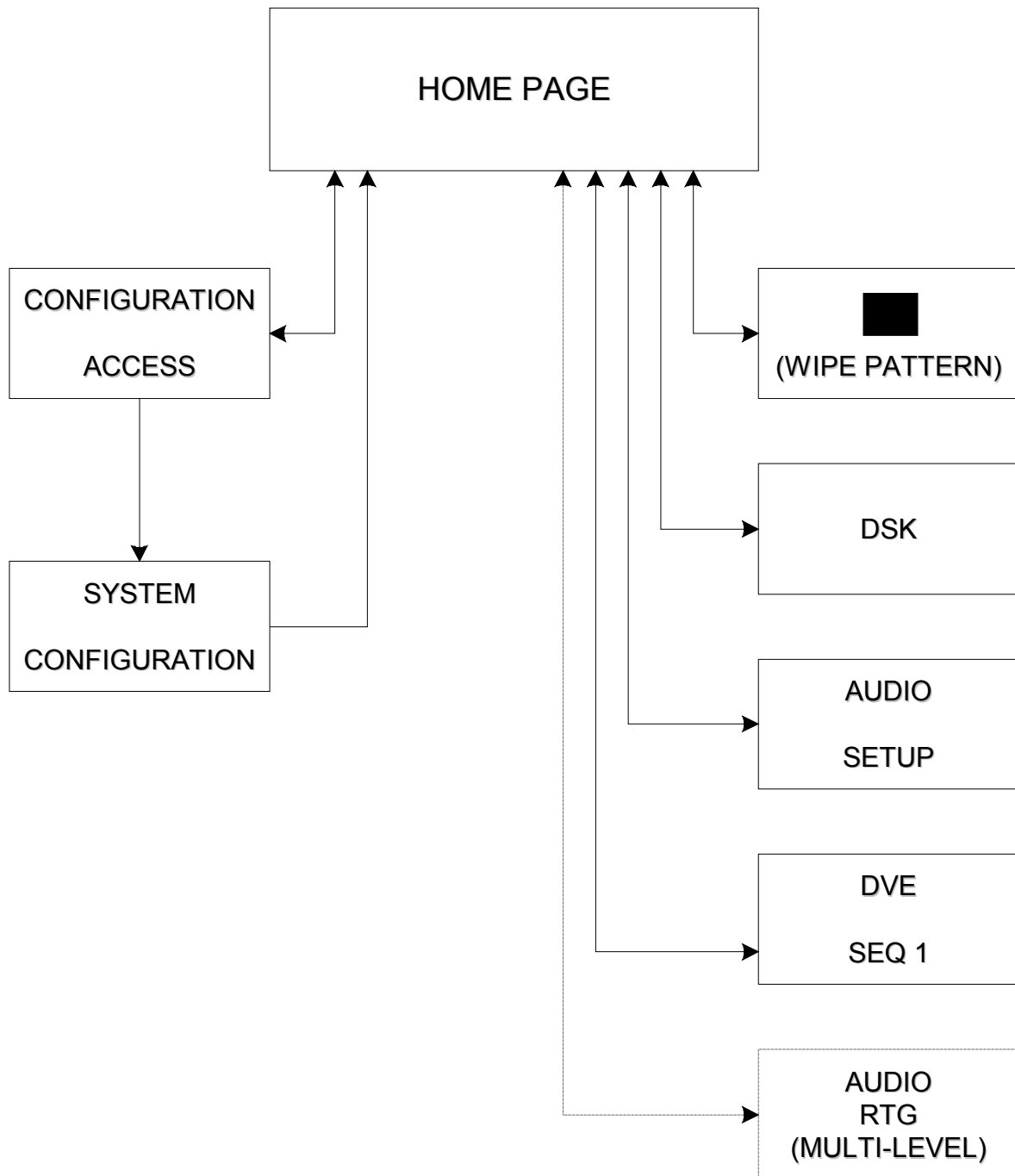


12 Using the plasma display

The home page is the default graphic plasma display screen for the system. The display consists of four stereo meters, real time clock, stop watch facilities and push buttons to select various setup screens. The diagram illustrates a multi-level monitoring screen display.



The diagram on the following page shows the pages which are accessible from the main home page.



HOME PAGE MENU TREE

Page title

In a single level system the page is titled with the first two channel names specified, for example 'CHANNEL1 CHANNEL2'.

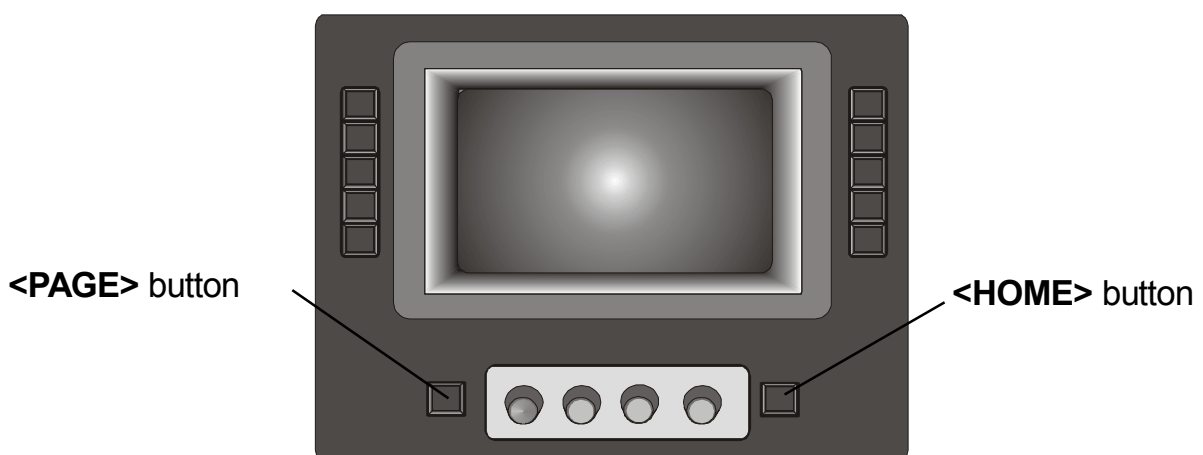
Whilst in a multi-level system the page is titled with the page (level) number, channel names, the channels routed and the other page (level) numbers where these channels are also routed.

Within the diagram the title is '1 CHANNEL1 A1 CHANNEL2 A2 234', where '1' is the page number, 'CHANNEL1' is the channel name, 'A1' is the channel routed, 'CHANNEL2' is the channel name, 'A2' is the channel routed and '234' indicates that either A1 or A2 is also on routed on levels 2, 3 and 4.

If there is no communication with the routing system then the page title is displayed as '1 CHANNEL1 A? CHANNEL2 A? ???' to indicate that the audio inputs may be routed on other levels.

Page and home push buttons

In a single level system the **<PAGE>** button performs no action, whilst in a multi-level system it allows monitoring of the different audio levels to be cycled through. On each page push button press the title of the page changes to reflect the audio levels being monitored. In a single level system the home push button performs no action, whilst in a multi-level system the home push button always returns back to the first page.



Audio metering

Four stereo meters are displayed for the PGM, PST, AUX1 and TX audio channels. Double markers on the sides of each bar indicate the line-up level for the meter.

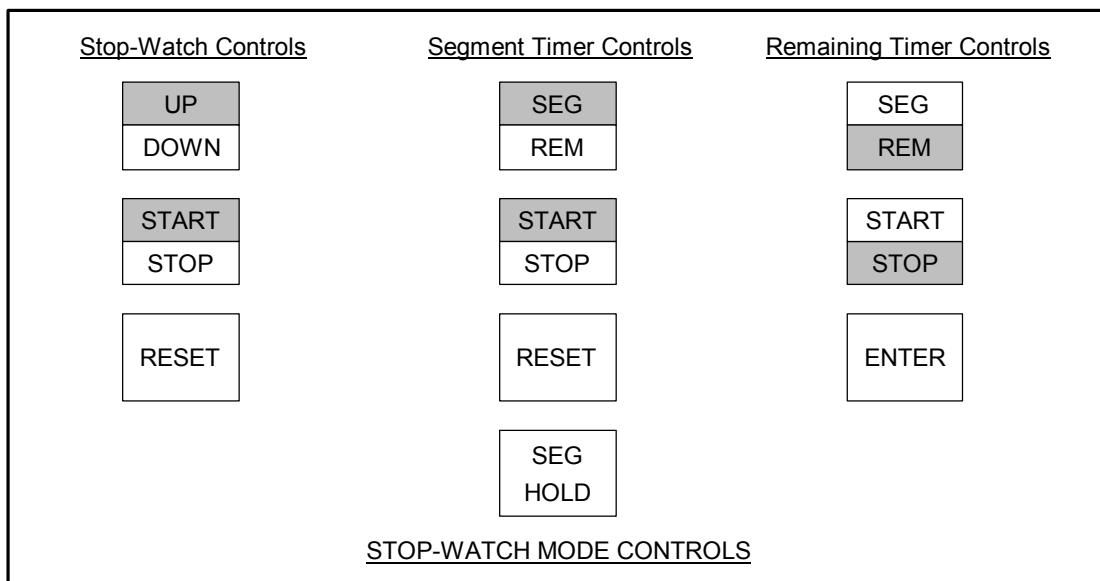
Real time clock

In stop watch mode the time of day display (HH:MM:SS) is provided in 24 hour format, as illustrated. This time is derived by the station TC input. If no input is present, the clock will free run.

n 12.1 Stop watch and timer modes

The timer modes shown on the plasma display are configurable. For details of how to configure them refer to the technical manual. The subsequently available modes are either stop watch or timer mode.

The options selectable on the left hand side of the plasma display in each mode are as follows:



Stop watch mode

If stop watch mode is selected then the current count is displayed along with three push button controls for the stop watch, as illustrated. The stop watch can count up or down (from a preset value) and can be reset. The count down preset value is selected using Shaft Encoder one to set the MMM value. The shaft encoder second from the left is used to set the SS value.

The stop watch is locked to the station TC input. Due to this feature a count started half way through a second will count that half second as a second to keep in step with the station TC.

The stop watch once started counts continually until terminal count , and does not stop once display pages are changed.

- A toggle push button provides **<START/STOP>** indication. On system startup the stop watch is shown as stopped, after which it always displays the current operational state as set by the operator. When the stop watch reaches terminal count (999:59 or 000:00) the count state is changed from start to stop.
- A toggle push button provides **<COUNT UP>** and **<COUNT DOWN>** indication. On system startup the stop watch is shown as **<COUNT UP>**, after which it always displays the current operational state as set by the operator. When the stop watch reaches terminal count (999:59 or 000:00) the count direction indication remains unchanged in it's current state.
- A push button provides stop watch **<RESET>**. If selected whilst counting up the count is reset to zero and the count continues, if selected whilst counting down the preset count down time is reloaded and the count continues.

Timer modes

If timer mode has been configured the display can be switched between segment mode and remaining mode.

Segment timer

In segment mode the timer value is displayed along with four push button controls. The segment mode timer counts independently to the stop watch and the remaining count and is always active, even if timer mode is never selected.

It is always automatically started at the start of each transition and can be manually started and stopped once counting. Once started the timer counts up each second and only can only be stopped manually or when the terminal count of 999:59 is reached.

At the start of each transition the timer always counts up from the zero. The **<SEG HOLD>** push button stops the count from being zeroed at the start of each transition.

The timer is locked to the station TC input. Due to this feature a count started by a transition half way through a second will count that half second as a second to keep in step with the station TC.

The **<RESET>** push button resets the count to zero from where it continues.

Remainder timer

In remainder mode the timer value is displayed along with three push button controls. The remaining mode timer counts independently to the stop watch and the segment count and is always active, even if timer mode is never selected.

It is always automatically started at the start of each transition and can be manually started and stopped once counting. Once started the timer counts down each second and only can only be stopped manually or when the terminal count of -999:59 is reached.

The preset value is selected using the first shaft encoder to set the MMM value. The second shaft encoder is used to set the SS value. At the start of each transition the timer counts down from the preset value, or zero if none has been specified.

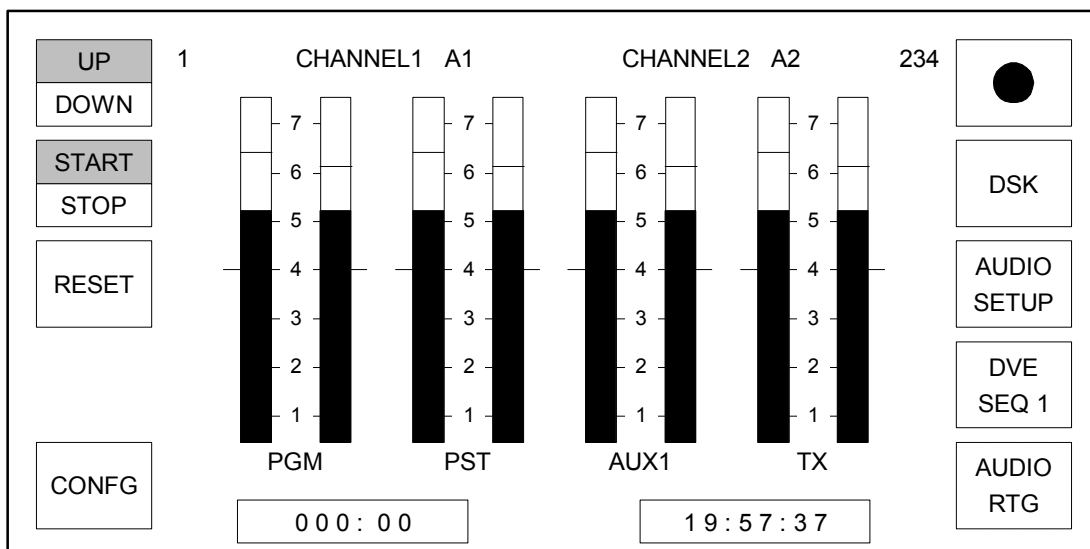
The timer is locked to the station TC input. Due to this feature a count started by a transition half way through a second will count that half second as a second to keep in step with the station TC.

The **<ENTER>** push button only appears if the remaining count has been stopped and a positive remaining time is visible on the display. Selecting this push button calculates the duration of the programme remaining from the last transition by performing the calculation shown. The push button is then removed from the display and the duration is displayed as the remaining count which is automatically started (the **<START/STOP>** push button automatically toggles from stop to start).

Duration = currently remaining count - (time of day - time of transition).

n 12.2 Screens accessible from the home page

The push buttons on the home page change the displayed page to the system and configuration setup pages.



- The **<WIPE PATTERN>** button showing the currently selected wipe pattern graphic allows entry to the wipe pattern selection page. When control is by an automation system (e.g. Pro-Bel Compass) the displayed wipe pattern changes to reflect the currently selected setting by the automation system.

- **<DSK>** allows entry to the down stream keyer (DSK) setup page, from which both of the down stream keyers can be adjusted.
- **<AUDIO SETUP>** allows entry to the audio gain setup page, from which levels to be adjusted for each of the audio sources, and the over fade rate can be set.
- **<DVE SEQ n>** allows entry to the DVE selection page, from which the DVE sequence to be used can be selected and previewed.
- **<AUDIO RTG>** is only available in multi-level audio operation (as illustrated by the non-solid push button) and allows entry to the audio channel routing viewing and editing pages.
- **<CONFIG>** allows entry to the system configuration menu page via the PIN page. For details refer to the technical manual.

13 Selecting wipe patterns

There are ten wipe patterns available which can be selected, along with the softness and direction of the wipe, from the wipe page. This page is accessed by pressing the wipe button on the home page. This button has a graphic of the currently selected wipe pattern. The default settings for the wipe pattern are:

- wipe pattern selection = left to right horizontal wipe
- wipe softness = 0%
- wipe softness = OFF
- wipe direction = normal (forward)

When control is by an automation system (e.g. Pro-Bel Compass) the displayed wipe pattern changes to reflect the currently selected setting by the automation system.

n 13.1 Setting wipe pattern, direction and softness

- 1** From the home screen (see chapter 12), press the **<WIPE PATTERN>** button.

The wipe screen is displayed with the current wipe pattern in the centre of the screen.

- 2** To select a different wipe pattern, press the button that corresponds to the wipe pattern required from the left or right of the screen.

The new wipe pattern selected is shown in the centre of the screen

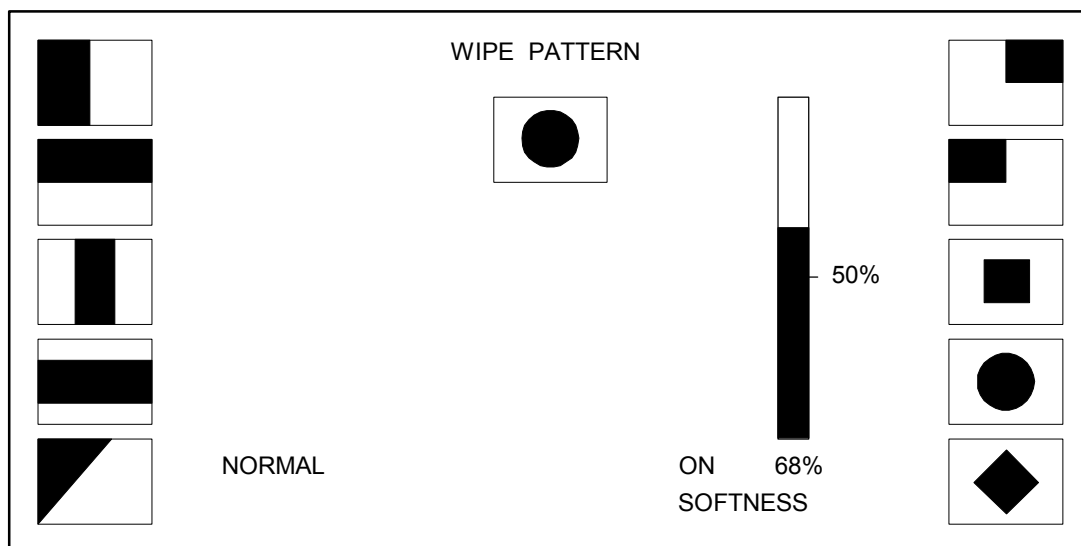
- 3** To set the direction of wipe, turn the leftmost shaft encoder clockwise to select NORMAL or anti-clockwise to select REVERSE for the direction of wipe.

- 4** To set softness state, turn the shaft encoder third from left clockwise to turn softness ON, or anti-clockwise to turn it OFF.

*If OFF is selected the wipe setup is complete. Press **<HOME>** to display the home screen.*

- 5** To change the amount of softness, turn the fourth shaft encoder clockwise to increase softness, or anti-clockwise to decrease softness.

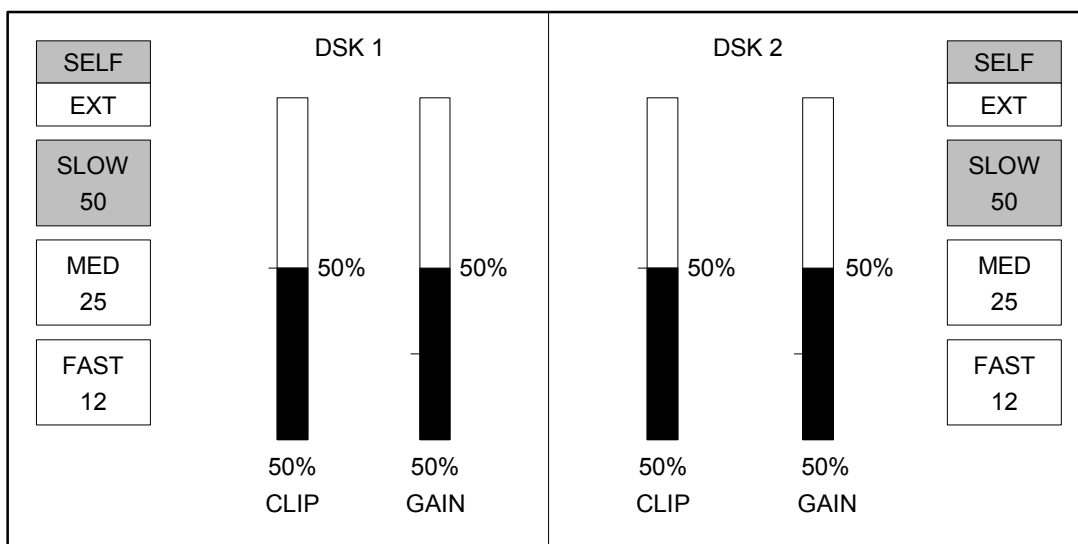
*Softness of 0% has the same effect as turning the softness state to OFF. Press **<HOME>** to display the home screen.*



14 Setting up the DSKs

The individual setup of the DSKs may be modified using the DSK page(s) on the plasma display. To access this from the home page, press the **<DSK>** button. The screen will display the current settings for each DSK. Percentage bars and buttons for setting DSK1 are shown in the left half of the screen. Those for DSK2 are shown on the right. The options are as follows (one set for each DSK): pressing the **<page>** button accesses the screen for DSK3 & 4.

- **<SELF/EXT>** - used to set whether an external key is to be used
- **<SLOW>** - used to set a slow fade rate for manual DSKs in numbers of frames
- **<MED>** - used to set a medium fade rate for manual DSKs
- **<FAST>** - used to set a fast fade rate for manual DSKs
- clip - the bar displays the current clip value as a percentage, changed using a shaft encoder
- gain - the bar displays the current gain value as a percentage, changed using a shaft encoder



DSK keying

The **<SELF/EXT>** push buttons toggle between self or external keying.

Note: 'EXT' gives better quality therefore it is best to use this whenever possible.

DSK rate

The DSK rate selection is provided by pressing one of the three push buttons labelled **<SLOW>**, **<MED>** or **<FAST>**. The value displayed is the current transition rate, in frames, set by the transition rates screen (refer to the technical manual). The buttons act mutually exclusively.

Clip rate

The first and third shaft encoders from the left are used to set the DSK clip value. The first shaft encoder is used for DSK1 (or 3) and the third for DSK2 or 4. Percentage bars give a visual indication of the currently selected clip values.

Gain rate

The shaft encoders second and fourth from the left are used to set the DSK gain value. The second shaft encoder is used for DSK1 or 3 and the fourth is used for DSK2 or 4. Percentage bars give a visual indication of the currently selected gain values.

DSK setup

- 1** From the plasma display home screen, press the **<DSK>** button (see chapter 12).

The DSK screen is displayed. Use the left half for setting DSK1 or 3, the right half for setting DSK2, or 4.

- 2** Check that EXT is highlighted in the label for the **<SELF/EXT>** button. If no external key for the DSK is available, press **<SELF/EXT>** to highlight SELF.

- 3 While viewing the DSK preview monitor, turn the controls beneath the Clip and Gain bars for the DSK until you obtain the desired effect.
- 4 If the DSK is to be controlled manually, press either **<SLOW>**, **<MED>**, or **<FAST>** to select the DSK fade rate.

*If the **<FOLLOW>** function has been selected on the panel (see chapter 4), the TX 520 ignores the DSK fade rate and uses the main transition rate.*

15 Adjusting audio levels

The audio (gain) setup screen is used to specify the gains for audio sources on the PGM, PST, and AUX1 busses. For single level audio setups, mono or stereo source selection can be specified, with phase reversal on channel B. Unity gain can be set for each source, either as married or split.

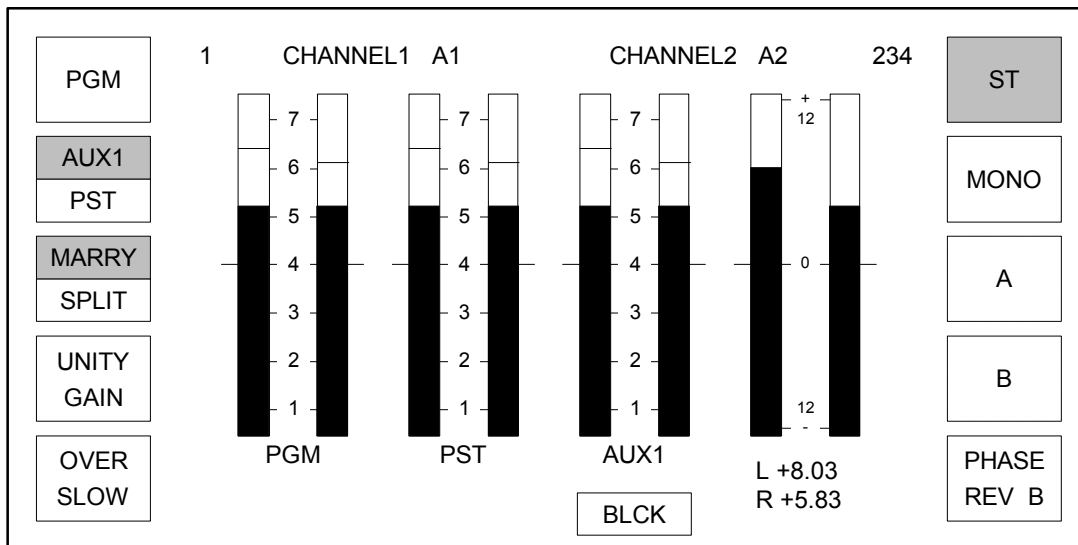
If the TX 520 is set up for multi-level audio, similar adjustments can be made for each level. The top line of the screen displays the current page number (i.e., level) on the left, the channel and input source names above the audio meters, and the number of any other levels to which the channels are also routed.

Display features of the audio (gain) setup screen, such as whether or not peak bars show, are determined by the system configuration. Refer to the technical manual for details.

The audio (gain) setup screen is accessed from the home screen (see chapter 12) by pressing the **<AUDIO SETUP>** button on the right. It displays the following:

- Bus selection button labels.
- Dual channel audio meters for the PGM, PST, and AUX1 busses.
- The name of the source currently selected on the bus.
- Audio gain meter showing the audio gain setting for the currently selected source.

To return to the home screen, press **<HOME>**. The **<PAGE>** button changes the display from one level to another in a multi-level system.



Audio (gain) setup screen buttons and controls

Buttons on the audio (gain) setup screen include:

<PGM>, **<AUX1/PST>** - used to select the bus to be adjusted

<MARRY/SPLIT> - used to select either married control of the gain for both channels, or individual control of each channel.

<UNITY GAIN> - used to set the audio gain for the currently selected source to unity. This can be selected for all twenty main sources (those on all three busses).

<ST>, **<MONO>**, **<A>**, ****, **<PHASE REV B>** - used to select either stereo, mono, channel A to both, channel B to both, or phase reversal on channel B. The buttons for channels A and B only appear for single level audio setup since audio routing is used within multi-level systems (see chapter 16).

Note: If a phase reversal has been performed on a source, the red indicator will light at the end of bus that the source is selected on.

Shaft encoders three and four (the third and fourth from the left) are used to adjust the gain for the selected source. The effect of turning these controls is shown on the audio gain meter.

n 15.1 Setting up the audio gain for a source

When using the audio (gain) setup screen, select a bus by pressing one of the bus select buttons to the left of the screen. To select a source on that bus, press the source button in that bus row on the lower console.

- 1 From the home screen, press the **<AUDIO SETUP>** button.

The audio setup screen is displayed, with the AUX1 bus selected as the default condition. The name of the current AUX1 source is shown in a box beneath the AUX1 audio meter bars.

- 2 To set audio gain for a source on a different bus, press either **<AUX1/PST >** or **<PGM>**, as required.

The name of the currently selected source is shown in a box beneath the PST or PGM audio meter bars.

- 3 To set the audio for a source other than the one shown, press the appropriate source selection button in the row on the lower console.

- 4 To select the type of control for adjusting audio gain, press **<MARRY/SPLIT>** until the type wanted is highlighted.

<MARRY> uses either the third shaft encoder or the fourth shaft encoder to adjust both gain values. <SPLIT> uses the third shaft encoder to adjust the left gain, the fourth shaft encoder to adjust the right gain.

- 5 To adjust the gain for the selected source, turn the third shaft encoder or the fourth shaft encoder as required, or press **<UNITY GAIN>** to set unity gain.

Caution: *If the source you are adjusting is also selected on the PGM bus, the level will be altered on-air.*

- 6** To change the stereo/mono selection for the source, press **<ST>** (stereo), **<MONO>** (mono), **<A>**, or ****.

A routes audio channel A to both outputs. B routes audio channel B to both outputs.

- 7** If **<ST>** for stereo or **<MONO>** for mono has been selected, **<PHASE REV B >** can also be added to reverse the phase of audio channel B.

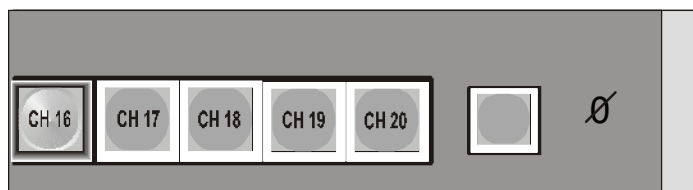
*Press **<HOME>** to display the home screen.*

n 15.2 Temporarily restoring unity gain

If the audio level of a source has previously been adjusted away from unity gain, that adjustment is stored and will be recalled when the source is selected again. If the selected audio source is not at unity gain, the small, unmarked button at the right-hand end of the bus row will be illuminated.

- 1** Press the small button at the right hand end of the bus row on which the source is selected.

The button light goes out and the source is at unity gain.



NOTE: Once a source has been temporarily restored to unity gain, it will remain at unity until the source is reselected. Any changes on the audio (gain) setup screen will not affect the source once it has been temporarily set to unity until it is reselected.

Performing this action on a source via the preset row will carry the temporary unity selection to the PGM bus after a PST/PGM transition.

16 Setting up multi-level audio routing

If the TX 520 system has been set up for multi-level audio, the **<AUDIO RTG>** button appears on the home screen for displaying screens which allow viewing and editing of the audio routing.

n 16.1 Viewing the current audio routing

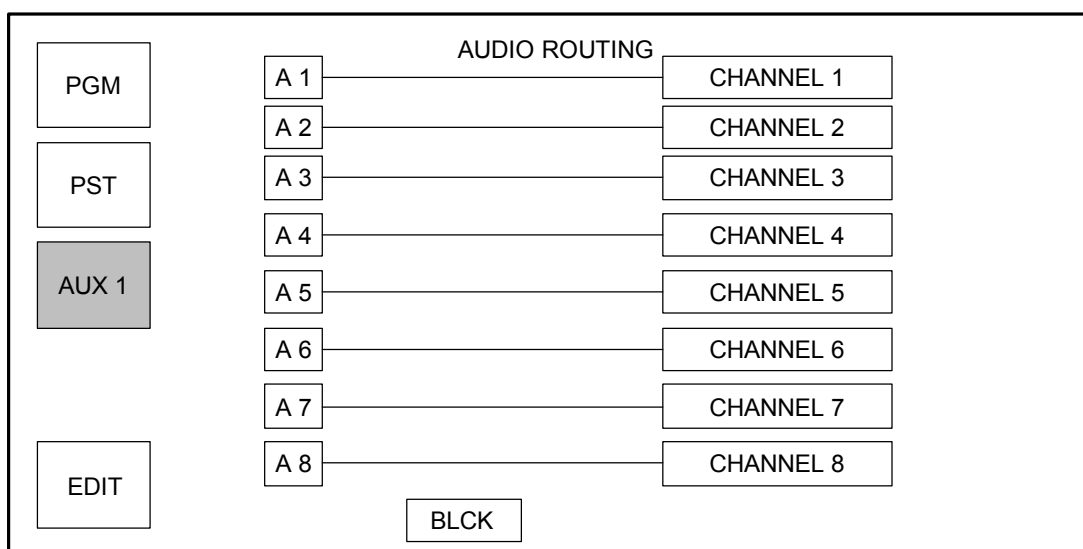
The view audio routing screen is accessed from the home screen (see chapter 12) by pressing the **<AUDIO RTG>** button. It displays the following:

- Bus selection button labels.
- A diagram of the current routing for the selected bus and source, showing inputs (tracks) on the left, routed to outputs (channels) on the right. Each channel can receive only one input at a time.
- The name of the input currently selected on the bus (shown below the routing diagram).

Buttons on the view audio routing screen include:

<PGM>, **<PST>**, **<AUX1>** - used to select the bus.

<EDIT> - used to display the edit audio routing screen (see chapter 16).



- 1 From the home screen, press the **<AUDIO RTG>** button.

The view audio routing screen is displayed, with the AUX1 bus selected. The name of the currently selected source is shown in a box beneath the routing diagram.

- 2** To view audio routing for a source on a different bus, press either **<PST>** or **<PGM>**, as required.

The source name for the bus is shown in the box

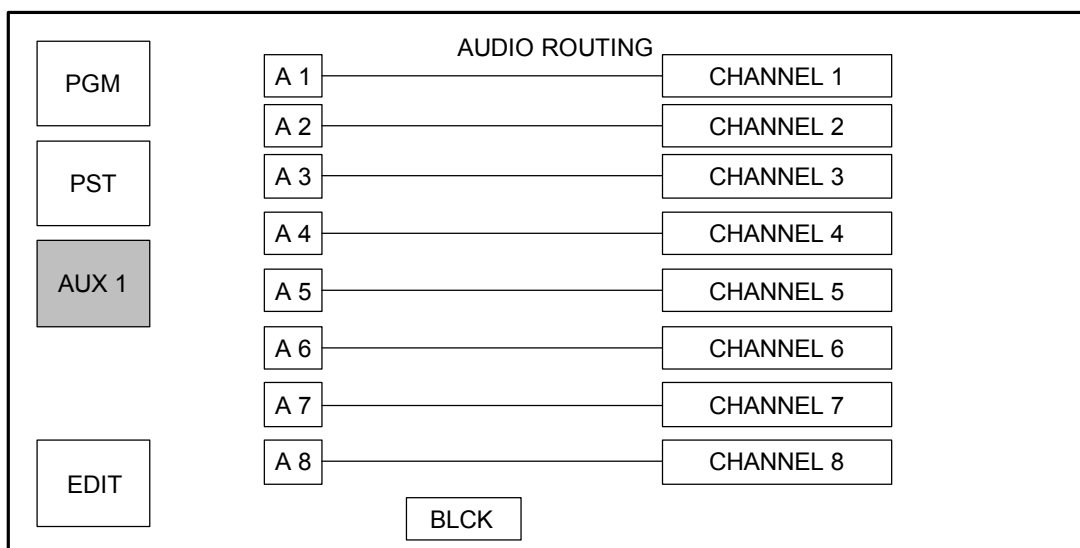
- 3** To view the audio routing for a source other than the one shown, press the appropriate source selection button in the selected row on the lower console.

The source name in the box will reflect the new selection.

Caution: Selecting sources on the PGM bus will affect the programme output.

- 4** To modify the audio routing for the selected source, press **<EDIT>** to move to the edit audio routing screen (see section 15.2).

*Press **<HOME>** to display the home screen.*



n 16.2 Editing the audio routing

The edit audio routing screen is accessed from the view audio routing screen (see section 16.1) by pressing the **<EDIT>** button. It displays the following:

- Bus selection button labels.
- A diagram of the current routing for the selected bus and source. Inputs (tracks), listed on the left, are routed to outputs (channels), shown on the right. Each channel can receive only one input at a time, although a given input can be routed to several channels.
- The name of the source currently selected on the bus is shown below the routing diagram.

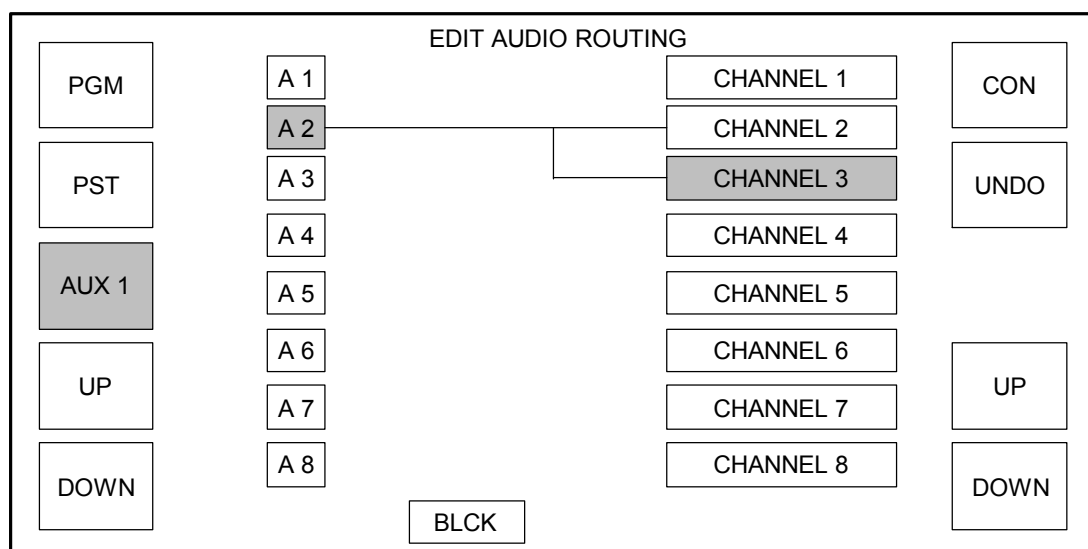
Buttons on the edit audio routing screen include:

<PGM>, **<PST>**, **<AUX1>** - used to select the bus.

<UP>, **<DOWN>** - used to move the highlighted selection of source or channel from one to another in the routing diagram.

<CON> - used to connect a new source/channel combination, replacing the previous routing. The diagram then shows the new connection.

<UNDO> - used to reverse the last connection, returning the routing to the previous one updating the display accordingly.



- 1 From the view audio routing screen, press the **<EDIT>** button (see section 15.1).

*The edit audio routing screen is displayed with the AUX1 bus selected.
The name of the currently selected source is shown in a box beneath the routing diagram.*

- 2 To view and change the audio routing for a different bus, press either **<PST>** or **<PGM>**, as required.

The source name for the bus shows in the box.

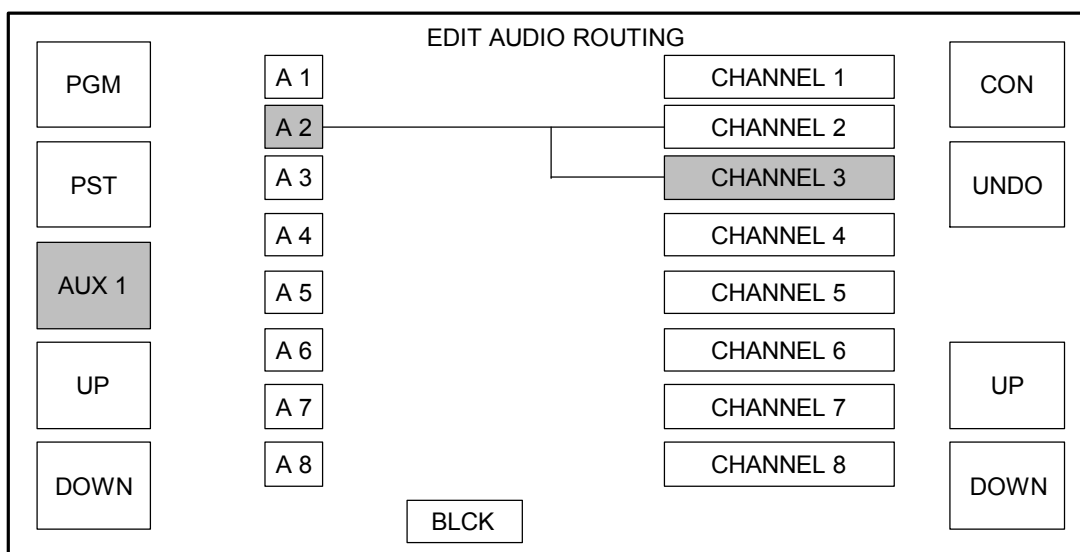
- 3 To view and edit the audio routing for a source other than the one shown, press the appropriate source selection button in the row on the lower console.

- 4 To change the selected inputs and channels, use the **<UP>** and **<DOWN>** buttons, as required. When the input/channel combination that you require is highlighted, press **<CON>** to connect them.

The diagram shows the new connection.

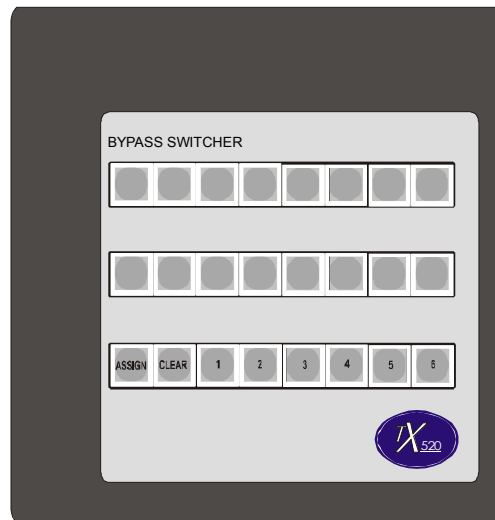
- 5 To reverse the last connection made in this editing session, press **<UNDO>** immediately after pressing **<CON>**.

<UNDO> will only work if the last button pressed was the **<CON>** button.
Press **<HOME>** once to display the view audio routing screen. Press **<HOME>** twice to return to the home screen.



17 Using multi-channel control

The TX 520 has the ability to control up to six channels if required. This is achieved from one panel using the bottom row of buttons in the top left of the panel.



The **<ASSIGN>** button on the left is used to enable/disable channel selection buttons 1 to 6. The **<ASSIGN>** button is lit when active.

The channel push buttons are only active when the **<ASSIGN>** button is active. Pressing any channel button will assign the panel to control the corresponding channel, if not already being controlled then that channel button will light. If however the panel is already controlling the selected channel, then it will stop controlling it and the channel button will be extinguished.

Pressing any channel button while the **<ASSIGN>** button is off will have no effect on channel assignment and channel button lamps will stay in their previous states.

Note: Once selected, the channel button will remain lit if the communications with selected channel is valid, otherwise it will flash indicating that communications have been lost. If only one channel is being controlled, the panel will go into reset mode until communications are restored or the channel is deselected.

CAUTION: If the flashing channel button is pressed, the light will be extinguished even if communications with the controller have not been restored. It will not be possible to select this channel again until communications have been restored.

n 17.1 Selecting multiple channels

- 1** Press **<ASSIGN>** to activate the selection controls.

*The **<ASSIGN>** button lights. Channel buttons **<1>** to **<6>** are now active.*

- 2** Press required channel button **<1>** to **<6>**.

*Pressing an unlit channel button, **<1>** to **<6>** causes the button to light and connects the panel to the corresponding TX Series system (chassis).*

*Pressing an illuminated channel button, **<1>** to **<6>** causes the button to be extinguished and disconnects the panel to the corresponding TX Series system (chassis).*

- 2** Repeat step 2 until the channel buttons lit correspond to those to be controlled.

- 3** Press **<ASSIGN>** to de-activate the selection controls.

*Pressing **<ASSIGN>** after chassis selection extinguishes the button and prevents further selection of buttons **<1>** to **<6>**.*

Note: It is possible to have the panel connected to all sets of electronics (i.e. All buttons **<1>** to **<6>** are lit).

The plasma display, source assign displays and all lamp tallies reflect the settings for the leftmost selected system (i.e. the lowest number channel button lit).

n 17.2 Controlling multiple channels

Linked operation of any number of systems from 2 to 6 is possible from the panel.

After selecting multiple chassis (see section 17.1), it is possible to select crosspoints on the PST, PGM and AUX busses, audio-overs, turn keyers on and

off, operate the DVE and fade to black. These are all functions available in normal operation and are detailed in the previous chapters.

Selecting the wipe pattern and DVE sequence via the plasma display is only active on the first 'active' chassis connected to the panel (i.e. the lowest number channel button lit).

To select wipe patterns or DVE sequences for other channels, it is necessary to do so before linking the channels together.

It is possible to set all panels with different sources on PST bus, different follows for DSKs and audio-overs, link them together and then use **<TAKE>** or **<PRE-ROLL & TAKE>** to activate all transitions simultaneously.