Arria

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About This Manual

It is recommended that this manual be read through *at least once* from cover to cover to gain the proper perspective of all mixer operations.

Where practical, most information is presented in a format that should allow even the novice to quickly locate and understand the various keys and menus that make up this leading-edge digital audo mixer.

As technology – and hence this manual – is constantly evolving, your feedback is welcome and appreciated.

Synonymous Terms

The following terms are used synonymously throughout this manual:

- AESEBU, Digital
- Bus, Output Bus, Mix Bus, Program Bus
- Monitor Bus, Mon Bus
- LCD Screen, LCD Display, Display
- Channel, Input, Input Source, Play Source, Source
- Arria, Console, Audio Mixer, Mixer
- Edit Mode, Timeline
- Function Key, Softkey
- Logical Vtr, Logical Name
- Operator, User
- Editor, Editing System
- Rec, Recorder, Record Vtr, Rvtr

Introduction to Arria

Arria is a compact, full-featured digital audio mixer designed to suit a wide variety of live and post-production applications. In addition to unrivaled sonic accuracy, a wide variety of software and hardware options allows the user to tailor the standard Arria to exactly match the needs of the particular application.

Arria provides state-of-the-art digital audio processing and effects, including:

> Multiple-band EQ
> Automatic Gain Control (AGC)
> Compression / Limiting
> Gating
> Standard Left/Right Panning
> 5.1 (Dolby AC3) Surround Panning
> Delay
> Sample rate conversion
> Phase Inversion
> Reverb (option)

Each of the above may be applied to any input channel, or combination of input channels, all independent of each other.

Incorporating virtually every function found on large production and audio post-production consoles, Arria also offers a unique **Timeline** approach to changes in mixer setups.

A flexible input section accepts up to 22 2-channel digital sources (11 AES inputs per Audio Processor Unit (APU), two APUs maximum. The standard Arria has a single APU.) Each Arria APU may also be equipped with a maximum of 4 internal 2-channel analog-to-digital converters. For applications requiring more analog inputs, outboard converters may be easily incorporated.

On the output side, eight independent **Mix Busses** and six **Monitor Busses** provide simultaneous analog and digital feeds (standard on all systems).

Arria offers a powerful extended editor interface built upon the industry-standard ESAM II protocol. Besides permitting editor control over Transition Start, Transition Rate, Crosspoint Selection, Memory Upload/Download, and Preview Switching, the interface also allows remote control of the following:

> Monitor Level
> APV Levels
> APV Channel On/Off
> Monitor Preset Selection
> Live/Edit Mode Selection
> Fader Levels
> Delay

Please consult with your edit system manufacturer for a list of supported features.

An internal 6 channel audio preview switcher handles all audio previewing operations without the need for an external audio switcher.

An optional router interface provides complete automation of mixer setups in conjunction with external routing switchers.

The Arria consists of an expandable desktop or console-mountable **Control Head** and a 4ru **Audio Processor Unit (APU)**. The interconnect between the two system assemblies is an RS422 data cable. All user interface software and data resides in the control panel, while the APU performs all of the "physical" tasks of mixing.

The Arria **Control Head** provides connections for the APU, editor interface, GPI interface, router, and other interfaces. All connections are via DB9 and DB25 female connectors.

External memory storage is provided via a PCMCIA memory card interface located on the top left corner of the control surface.

By nature, the online editing suite is a dynamic environment, where equipment complements change at a moment's notice. The impact to the mixer may be the replacement of a 2-channel analog VTR with a 4-channel digital VTR. Perhaps only 3 channels are necessary from a 4-channel VTR. Swap the AVTR with the CVTR? The permutations are endless.

While Arria is designed to facilitate quick response to changes in the editing environment, a thorough understanding of its input architecture will make its setup and manipulation go much faster.

The standard Arria mixes up to 22 audio input channels into 14 audio outputs. For some functions, these are grouped into stereo pairs (11 inputs x 7 outputs).

The **Outputs** are provided in both digital and analog form simultaneously. The 7 pairs are used for:

1) Mix 1, 2

2) MIX 3, 4

3) MIX 5, 6

4) MIX 7, 8

5) Monitor 1, 2

6) Monitor 3, 4

7) Monitor 5, 6

The input section on the rear of the APU incorporates eleven (11) 75 Ohm BNC jacks to accommodate twenty-two (22) input channels. These jacks conform to the AES balun standard, providing two channels on a single connection.

If you have purchased the optional **Analog Input Module**, then the first four input pairs (Channels 1-8, AES inputs 1-4) will have three possible connections:

1) AES Digital input

2) Mic (Mic-level analog, w/ phantom power)

3) Line (Line-level analog)

For each of these first four input pairs, you will be able to switch between the three input connectors at any time through a software selection on the control surface. But...

☞ **Remember...even if you are using mono sources, switching the input mode of any channel between digital and analog will also switch the input mode of the other channel in that pair. However, the two channels of a pair can be switched between Mic and Line modes separately. The input modes of the first four channels are selected on the Setup screen, described later in this manual.**

Channel Modifiers

Any input may be assigned to any combination of **Mix Busses**, with the following features assignable on an input-by-input basis:

- Compression and Limiting
- Equalization
- Fader position Limiting
- Gating
- Panning
- Unique Monitor Mixing
- Input Gain Adjust (analog inputs only)
- Delay
- Phase Inversion

There is no restriction on the number of effects that may be assigned to any one channel, or the number of effects that may be assigned at any one time throughout the mixer.

All signal routing and processing is performed in the digital domain. Internal analog-to-digital converters convert incoming analog sources to digital prior to mixing. Simultaneous analog and digital outputs for both the mix busses and monitor speakers permit flexible integration into hybrid installations.

Unlike traditional Program/Preset configurations, the Arria performs transitions by keyframes on a **Timeline**. The mixer automatically calculates all of the "inbetweening" to perform smooth, field accurate transitions. While a simple dissolve between two VTRs utilizes just Beginning and Ending points, a complex event with multiple audio sources changing levels at specific intervals and rates may contain up to 20 points along the Timeline. The most simple event contains both a **Begin** and an **End** point, which the mixer generates automatically.

At first glance, the 10 faders on the standard Arria control panel may lead one to believe that mixing flexibility is extremely limited. Not true! The faders are assignable to 4 **Banks** for a total control of up to **40** sources. The banks may be arranged in any way the user sees fit. In fact, *the same source may appear on multiple banks simultaneously*. As the user swithes Banks, all indicators associated with the Faders update accordingly.

The Arria control panel is largely software-based. The vast array of switches and knobs found on most traditional mixers has been replaced with a system of intuitive menus. Functions such as **Compression**, **Delay**, **Eq**, **Gate**, **Pan**, etc. are all altered via these menus, which appear on the built-in LCD Screen.

The menus are accessed by pressing the appropriate keys on the **Aux Select, Function Select**, or **F/X Select** sections. Whenever a menu is "open" on the display, pressing a Fader's **CH** delegates the menu to that fader. In most cases, the selected Fader's number and audio source is displayed at the top of the LCD Screen.

There is no keystroke sequence restriction for delegating a menu. The user is free to select a **CH** key before or after selecting a function.

Shortcuts and Tips

Below are a few shortcuts to make Arria operations as fast and intuitive as possible:

Certain menu-based adjustments require the use of the **SHIFT** key (for example: **APV4** in the **Home** menu. For single-handed operation, the function key beside the Adjustment Knob will also function as the shift key.

1) Certain knob-based menu adjustments (like **Virtual Source** in the **Router** menu) may also be accomplished by direct keypad entry. To access this feature, press the **ENTER** key in the **Function Select** section. The numeric keys will illuminate, and the LCD Screen will prompt for an entry. Complete the operation by pressing the softkey associated with the numeric entry.

2) Certain operations may be applied to multiple faders at one time (like **FullTime Live**). For any given feature, try selecting (illuminating) multiple **CH** keys before making changes. Fetaures that do not permit multichannel adjustment (like **Delay**) will inhibit the selection of more than one **CH** key.

3) Use the **UNITY** key in the **Aux Select** section to set most menu values back to either their default or Unity state.

4) You are not locked-into the logical fader order that the **Router** menu picks for you. Use the **Assign** menu to put channels where you want them.

5) A source may appear on any *or all* banks simultaneously. For example: placing the RVTR on all Banks may make it easier to perform manually-controlled PreRead edits.

6) When creating a group, if possible, leave the individul channels of the group on faders, as opposed to creating only a group. Maintaining the individual faders means instant access to individual levels and EFX processing.

7) Save both a **Router** and standard **Setup** file to a PCMCIA Memory Card.

Modes of Operation

There are two principle modes of operation for Arria: **Live** and **Edit**.

<u>**Live Mode**</u> is used for "live" mixing of sources – providing the user with constant manual interaction with the Arria faders. This mode is distinguished by:

- All hardware faders are active at all times.

- All **Channel Label** displays above the faders are at maximum brightness.

- The edit system *will not control* the faders or transitions.

- The edit system *will control* the Arria **Monitor** section, if **Monitor** is enabled in the Arria **EDITOR** menu.

- Mixer setups are storable to RAM and/or PCMCIA card (via the **MEM** and **CARD** menus).

<u>**Edit Mode**</u> is used for creating, editing, recalling, storing and running **Timeline Events**. Similar in function to the "run" mode found on most digital video effects devices, **Edit Mode** combines **Event Creation** and **Event Execution** into a single mode of operation. This mode is distinguished by:

- Controlled hardware faders are *not* active while an **Event** is **Running** or parked between **Midpoints**.

- All hardware faders are active at the **Beginning**, **Mid**, and **End** points in the **Timeline**.

- **Channel Label** displays for controlled faders are at half brightness.

- **Full** edit system control over the faders, transitions, and monitoring is possible, provided all components of the Arria **EDITOR** menu are enabled.

- If assigned, a **Timeline Fader** may be used to step through the current **Event**.

- Mixer setups are storable to RAM and/or PCMCIA card (via the **MEMORY** and **CARD** menus).

The Arria also offers a hybrid **Live/Edit Mode**. Invoked by specifying channels as being **FullTime Live (FTL)**, the faders of channels set to **Fulltime Live** are distinguished by:

- **FTL** faders are active at any point in an **Event**.

- **Channel Label** displays for **FTL** faders are always at maximum brightness.

- **FTL** faders are *not* controlled by an edit system.

- *Current* **FTL** fader levels are stored as part of an **EVENT**.

One example of using **FullTime Live** mode is when you want the edit system to perform a field accurate fade on one source while the operator rides the level on another. The source to be faded would be set for **Edit Mode**, while the source to be ridden would be set to **FullTime Live** mode so that the edit system would not affect its contribution to the mix.

Hardware Installation

The Basics

This section describes the physical aspects of setting up your Zaxcom Arria audio mixer. Not all of the accessories are described here. Documentation on **optional accessories** will be provided in supplemental pages that you will receive with the accessory.

Selecting a location for the Arria Control Head and Audio Processor Unit is a straight-forward process. The control and audio sections are split into two separate sections — place the rack-mountable Audio Processor Unit (APU) near the audio sources and place the Control Head in an appropriate, convenient operating position. The cable(s) provided to run between the two pieces are normally 25 feet long, but lengths up to 200 feet on quality cable should pose no problem.

About Cables

All digital audio connections to and from the Arria are 75Ω BNC connections (unbalanced), and should be connected to other equipment with standard 75Ω coax cable (for example: Belden 8281 or 1694).

When converting to/from 110Ω AES format (balanced), it is recommended that the conversion be done as close as is practical to the 110Ω end, making most of the run on 75Ω coax.

☞ *VERY IMPORTANT*: **Always install your Arria with high-quality cable designed specifically to carry digital audio signals. For example: for 110Ω (balanced) digital audio, <u>DO NOT USE CABLE DESIGNED FOR ANALOG AUDIO!</u> Similarly, for 75Ω (unbalanced) digital audio, <u>DO NOT USE 50Ω (computer network, RG-58) COAX CABLE</u>! Although use of these cable types may initially yield a working system, the likelihood of future intermittencies and unexplained distortions is virtually guaranteed.**

There are only two absolutely essential connections to make to the Control Head for basic operation: the APU connection and the Power connection. Most installations will also require GPI and/or serial control data connections. Emotional connection optional. This section gives functional and physical descriptions of each connector.
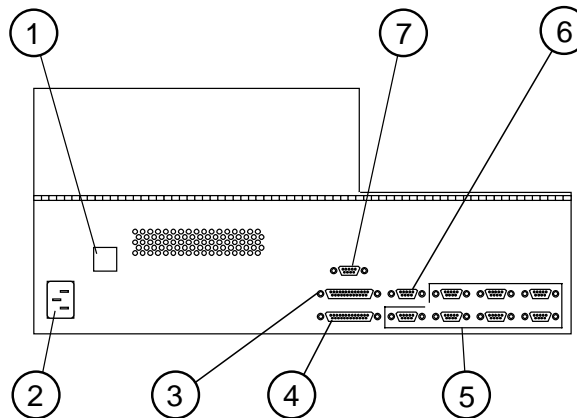
① Backup Power Connection

This is the connection for the optional external Redundant Power Supply Unit. The external supply connects to both the APU and the Control Head, and works in parallel with the internal supplies of each unit, taking the full load of either one, should its internal supply fail. Cables and installation instructions are provided with the supply.

② Power Connection

(IEC type)

This is a standard connection for the internal power supply. A cable is provided. The power supply is 120/240 VAC auto-switching. (Note that the power supply on the APU is NOT auto-switching.)

☞ **NOTE: It is very important that the APU, Control Head, and Redundant Power Supply (if used) be powered through a UPS (Uninterruptable Power Supply) which includes sag and surge protection. Damage caused by power spikes or other power problems are not be covered by the warranty.**

③ GPI OUT Connection

Pin	Function	Pin	Function
1	OUT 13	14	OUT 20
2	OUT 12	15	OUT 19
3	OUT 11	16	OUT 18
4	OUT 10	17	OUT 17
5	OUT 9	18	OUT 16
6	OUT 8	19	OUT 15
7	OUT 7	20	OUT 14
8	OUT 6	21	Shield
9	OUT 5	22	Shield
10	OUT 4	23	Shield
11	OUT 3	24	Shield
12	OUT 2	25	Shield
13	OUT 1		

(DB25 female)

This is the output connector for "General Purpose Interface" (a.k.a. Open Collector, Parallel; Machine Control) connections. This is used to send control signals to other equipment in the studio, most commonly start and stop commands, "on-air" light tallies, etc. See the "Setup" screen in the Software Setup section of this manual for more details.

GPI Out connections are Open Collector type, 40 Volt Max. 150 Milliamps at Peak.

④ GPI IN Connection

Pin	Function	Pin	Function
1	IN 15	14	IN 16
2	IN 13	15	IN 14
3	IN 11	16	IN 12
4	IN 9	17	Shield
5	IN 7	18	Shield
6	IN 5	19	Shield
7	IN 3	20	Shield
8	IN 1	21	Shield
9	IN 10	22	Shield
10	IN 8	23	Shield
11	IN 6	24	Shield
12	IN 4	25	Shield
13	IN 2		

(DB25 female)

This is the input connector for "General Purpose Interface" (a.k.a. TTL; Parallel; Machine Control; Contact Closure) connections. This is used to accept control signals from other equipment in the studio to do such things as beginning a Timeline transition. See the "Setup" screen in the Software Setup section of this manual for more details.

GPI input connections are TTL compatible, 30 Volt Max.

⑤ PORT1 -- PORT7 Connections

Pin	Function	Pin	Function
1	n/c	6	n/c
2	RX -	7	RX +
3	TX +	8	TX -
4	Shield	9	SYNC -
5	SYNC +		

(DB9 female)

These are RS-422 serial data ports. PORT1 is used for the editor interface, which is an enhanced version of the ESAM II protocol. The rest of the ports are for other interfaces and future expansion.

⑥ APU Connection

(DB9 female)

This is an RS-422 data connection between the Control Head and the APU. It is highly recommended that you use the cable supplied with the unit.

Pin	Function	Pin	Function
1	n/c	6	n/c
2	RX -	7	RX +
3	TX +	8	TX -
4	Shield	9	SYNC -
5	SYNC +		

Note that the matching RS-422 connector on the APU has the TX and RX in opposite positions, so the cable should have all pins connected straight through.

⑦ Headphone Connection

(DB9 female)

This is an analog audio connection to the "Headphone" connector on the APU. Audio connected here will be routed to the headphone jack on the front of the Control Panel.

Pin	Function	Pin	Function
1	n/c	6	Ground
2	n/c	7	n/c
3	n/c	8	Right
4	n/c	9	Left
5	n/c		

The APU has all connections for audio (analog and digital), as well as connections for control from the Control Head, Sync / external Timing Reference inputs and outputs, and power .

❶ Power

(IEC type)

This is a standard connection for the internal power supply. A cable is provided. Note that this power supply has a switch and a fuse. The fuse is 1.5 amp, 250 volt (*Littelfuse* miniature P/N H31301.5 or equivalent). This supply must be internally set for 110 or 220 volt operation. Always power the system through a UPS.

❷ Backup Power

This is the connection for the optional external Redundant Power Supply Unit. The external supply connects to both the APU and the control head, and works in parallel with the internal supplies of each unit, taking the full load of either one, should its internal supply fail. Cables and installation information are provided with the supply. Remember that this supply, if used, should also be powered through a UPS.

❸ Control Head Connection

Pin	Function	Pin	Function
1	n/c	6	n/c
2	TX -	7	TX +
3	RX +	8	RX -
4	Shield	9	SYNC -
5	SYNC +		

(DB9 female)

This is an RS-422 data connection between the Control Head and the APU. It is highly recommended that you use the cable supplied with the unit.

Note that the matching RS-422 connector on the Control Head has the TX and RX in opposite positions, so the cable should have all pins connected straight through.

❹ **RS-422**

Pin	Function	Pin	Function
1	n/c	6	n/c
2	TX -	7	TX +
3	RX +	8	RX -
4	Shield	9	SYNC -
5	SYNC +		

(DB9 female)

This is an auxiliary RS-422 serial data port for future use.

❺ **Mic 1-2 through Mic 7-8**

Pin	Function	Pin	Function
1	Shield	6	Mic 2 +
2	Mic 2 -	7	n/c
3	n/c	8	n/c
4	Shield	9	Mic 1 +
5	Mic 1 -		

(DB9 female)

Note that these connections are only active if you have the optional **Analog Input Module**.

All Mic inputs are phantom powered and at Mic level.

❻ Talk-Back 1-2

Pin	Function	Pin	Function
1	Ch 8 +	14	Ch 8 -
2	Shield	15	Ch 7 +
3	Ch 7 -	16	Shield
4	Ch 6 +	17	Ch 6 -
5	Shield	18	Ch 5 +
6	Ch 5 -	19	Shield
7	Ch 4 +	20	Ch 4 -
8	Shield	21	Ch 3 +
9	Ch 3 -	22	Shield
10	Ch 2 +	23	Ch 2 -
11	Shield	24	Ch 1 +
12	Ch 1 -	25	Shield
13	n/c		

(DB9 female)

<u>This connector is not used</u>. The system now allows you to assign any standard input(s) and output(s) of the mixer (e.g. studio mic, and the cue output) for use with the talkback functions. This function is described in the operation section of the manual, below.

❼ Line In 1-8 (Analog Input)

(DB25 female)

Note that these connections are only active if you have the optional **Analog Input Module**.

All Line Inputs are balanced, 10kΩ.

❽ Line Out 1-8 (Analog Output)

Pin	Function	Pin	Function
1	Ch 8 +	14	Ch 8 -
2	Shield	15	Ch 7 +
3	Ch 7 -	16	Shield
4	Ch 6 +	17	Ch 6 -
5	Shield	18	Ch 5 +
6	Ch 5 -	19	Shield
7	Ch 4 +	20	Ch 4 -
8	Shield	21	Ch 3 +
9	Ch 3 -	22	Shield
10	Ch 2 +	23	Ch 2 -
11	Shield	24	Ch 1 +
12	Ch 1 -	25	Shield
13	n/c		

(DB25 female)

The analog outputs are standard on all units. The analog outputs always output the same audio as their corresponding digital outputs. That is, they are not separate busses, but secondary outputs for the same 14 (7 stereo) busses of the system. They are numbered in the diagram from 1 to 14, as mono channels, although in other places they may be referred to as stereo channels 1 to 7.

All Line Outputs are actively balanced, 600Ω, nominal +4 dBm.

❾ Line Out 9-14, Phones

Pin	Function	Pin	Function
1	Phones R	14	Phones L
2	Shield	15	n/c
3	n/c	16	Shield
4	Ch 14 +	17	Ch 14 -
5	Shield	18	Ch 13 +
6	Ch 13 -	19	Shield
7	Ch 12 +	20	Ch 12 -
8	Shield	21	Ch 11 +
9	Ch 11 -	22	Shield
10	Ch 10 +	23	Ch 10 -
11	Shield	24	Ch 9 +
12	Ch 9 -	25	Shield
13	n/c		

(DB25 female)

See description of Line Outs 1-8 above. This connector also has a headphone-level, unbalanced output pair. This is a copy of channels 13 and 14, but in a proper (unbalanced) format for headphones. This is where the "headphone" connector on the **Control Head** should be connected.

☞ **Remember, the uses of the 14 mono outputs are as follows (in both digital and analog):**

Output	Function	Output	Function
1	MIX 1	8	MIX 8
2	MIX 2	9	MON 1
3	MIX 3	10	MON 2
4	MIX 4	11	MON 3
5	MIX 5	12	MON 4
6	MIX 6	13	MON 5
7	MIX 7	14	MON 6

❿ Word Sync Output

(BNC)

This is a 48 volt square wave reference output. This format is used by Tascam DA-88 machines, and possibly others. THIS IS NOT A STANDARD AES REFERENCE OUTPUT. To synchronize another device to the mixer using AES reference, simply connect any available Digital Audio Output on the mixer to the AES reference input on the other device.

☞ **NOTE: All BNC connections (unless otherwise noted) are 75Ω, AES/EBU digital audio connections, with the following configuration:**
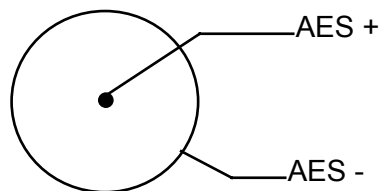
⓫ AUX 1 and AUX 2

(2 BNC)

Future.

⓬ TDIF

(DB25 female)

Future.

⓭ Digital Audio Inputs (1-11)

(11 BNC)

These are the input connectors for the 11 stereo (22 mono) inputs of the system. Note that the first four stereo channels may also have analog Line and Mic inputs (optional). The operator selects among the three input types via the **Setup** menu).

⓮ Digital Audio Outputs (1-7)

(7 BNC)

These are the connectors for the 7 stereo (14 mono) digital audio outputs of the system. Remember that the 7 stereo channels are also output in analog form (See "Line Out" connectors, described above).

☞ **Remember, the _uses_ of the 7 stereo outputs are as follows (in both digital and analog).**

Output	Function
1	MIX 1/2
2	MIX 3/4
3	MIX 5/6
4	MIX 7/8
5	MON 1/2
6	MON 3/4
7	MON 5/6

❶❺ Black-Burst Video Timing Ref Input

(2 BNC)
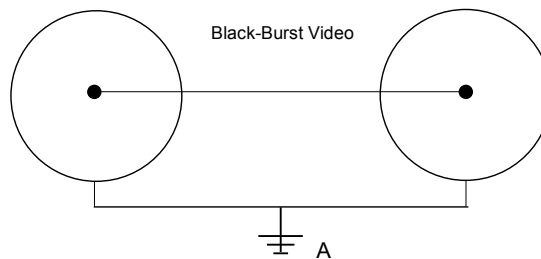
This is a pass-through connection for Black-Burst Timing Reference. Either BNC connector can be used for input, and the signal will be output on the other connector. This makes it easy to "daisy-chain" multiple devices on the same timing reference. Note that this is one of multiple timing options on the Arria, and the reference you choose must be selected on the SETUP screen. See the SETUP section of this manual for more information.

❶❻ Link 1 through Link 3

(3 15-pin D female)

Future. These connections will be used to connect multiple Audio Processor Units together, to allow sharing of resources.

❶❼ System Timing Ref

(2 DB25 female)

Future.

❶❽ Digital Audio Timing Reference Input

(BNC)

This is another timing reference option, designed to accept AES digital audio reference. Remember that the timing method you choose must be selected in the **Setup** menu, once your system is connected and powered up.

Menus, Keys and Softknobs

Mix Bus indicators
Illuminate to show state of **Mix Bus Assignments**. "BusX" illuminates when Mix Busses 5-8 are assigned.

Signal Present/Clip LED.
Glows green when signal is present. Glows red when input signal reaches clipping level.

8-character **Label** used to identify the audio source.

High Limit Indicator
When illuminated, indicates that an electrical High Limit is set.

LED indicators for stated features. When LED is illuminated, the feature is **On**.

LED Bargraph
Shows the current electrical level of the fader, which may be different from the physical position under some circumstances.

Fader **On/Off** key. When key is illuminated, the Fader (and all channels assigned to it) is **On**.

Channel delegation key..
When key is illuminated, the Fader is delegated to the current menu function.

PreFade Listen On/Off.
Not used in the current software.

Low Limit Indicator
When illuminated, indicates that an electrical Low Limit is set.

EFX On/Off.
Press this key to toggle the **On/Off** state of the current **Effect Type**.

SOLO enable/disable.
Press this key to **SOLO** the Fader on the Monitor Bus. This feature overrides all other monitoring modes.

Panel labels:
BUS1, BUS2, BUS3, BUS4, BUSX, S/CLP

VTR6 A1

Ø
EQ
C/L
AGC
N-R
GATE
DELAY
MAGIC

HLIM

LLIM

ON
CH
PFL
EFX
SOLO

LED Bargraph Indicators

<u>Level Indication</u>

The LED Bargraph beside each fader is primarily designed to give the operator an accurate indication of the current electrical level of channel/fader combination. With 4 software **Banks** and 10 standard hardware **Faders**, the likelihood is that the *mechanical* position of any given fader will not match the *electrical* level of a source as you switch from Bank to Bank. Hence, the LED Bargraphs provide a simple, accurate indication of the actual gain structure of the channel.

For example, in the diagrams below **Fader #1** on **Bank #1** is assigned as the **AVTR Channel** 1, while **Fader #1** on **Bank #2** is assigned as the **CVTR Channel 1**. These two sources, while *completely independent,* share the same hardware fader (they don't have to, but that is described later-on).
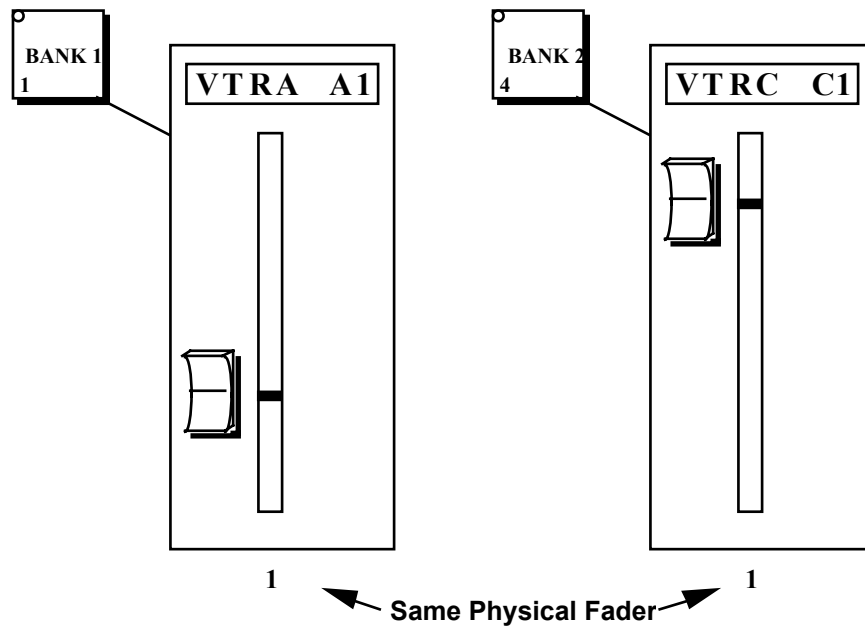
Let's say that you start-off on **Bank 1**, and set a level on the AVTR as depicted above.

Then you select **Bank 2** and set a level for the CVTR.

Now you return to **Bank 1**. This is what you'll see:
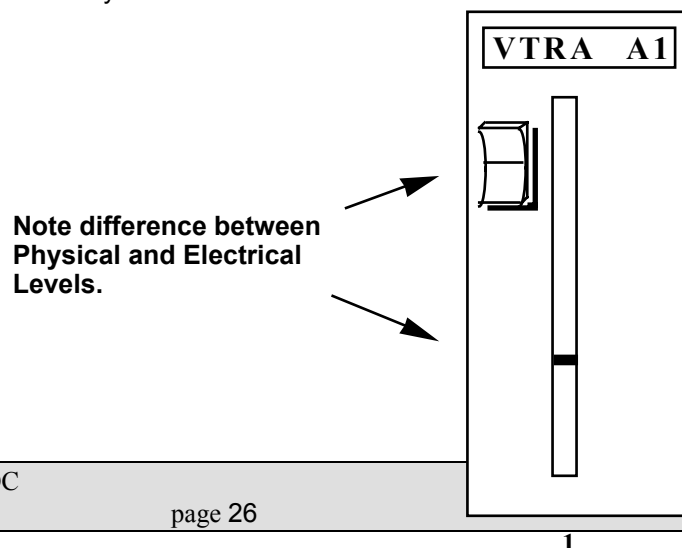
Note that the indicator on the LED Bargraph returns to the previously-set electrical level for the AVTR.

If necessary, the operator may now synchronize the physical and electrical levels by moving the fader down to match the position of the indicator. When the two levels are identical, the indicator locks to the fader once again.

Note: Movements made to Faders that are not synchronized with the LED level indicators DO NOT alter the electrical levels of the channel(s). In other words: If the two aren't locked together, no level adjustments will occur.

Group Indication

A Grouped fader is a fader that has more than one channel assigned to it. Besides the automatic addition of an asterisk (*) into the **Label** displayed at the top of each fader, the Arria also helps the operator quickly differentiate between single-channel faders and **Grouped Faders** through a modification to the LED Bargraph.

Grouped faders are differentiated from single-channel faders by the tripling of the level indicator. Compare the diagrams below. Note that the single-channel fader for **VTRA A1** has only a single LED, while the grouped fader for **VTRC*** has three adjacent segments illuminated, with the segment in the center indicationg the current electrical level of the fader.
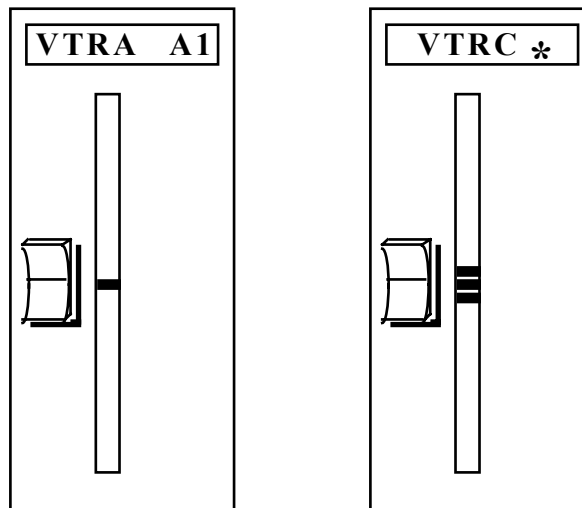
Monitor Indication

Besides the **Home** and **Monitor** menus, the faders may also be used to report the audio source currently selected on the **Monitor Bus**.

In the second level of the **Monitor Menu** (press the **Monitor** key, followed by the **More** key), *F1* is used to select the Monitoring Source. The choices are: VTR, MIX2, and MIX4. The selection is used by the mixer to decide what to do when an edit system requests a specific source.

When set to **VTR**, if the edit system requests a specific VTR, the Arria switches to that source on the Monitor Bus. For example: When the edit system requests VTRC, the Arria switches to VTRC.

When set to **MIX2**, if the edit system requests a specific VTR, the Arria switches to the **MIX BUS** in a 2-speaker configuration such that Mix Bus Channels 1 and 3 will be sent to Monitor Bus Channel 1 and Mix Bus Channels 2 and 4 will be sent to Monitor Bus Channel 2.

When set to **MIX4**, if the edit system requests a specific VTR, the Arria switches to the **MIX BUS** in a 4-speaker configuration such that Mix Bus Channel 1 will be sent to Monitor Bus Channel 1, Mix Bus Channel 2 will be sent to Monitor Bus Channel 2, Mix Bus Channel 3 will be sent to Monitor Bus Channel 3, and Mix Bus Channel 4 will be sent to Monitor Bus Channel 4.

Whenever the **Monitoring Source** is set to **VTR**, the LED Bargraph for the source currently selected on the Monitor Bus will look like the diagram below. Note that this display is unique from the **Grouped** Fader array in that here the three illuminated LEDs are separated from one another by an unlit LED, making the array much longer.
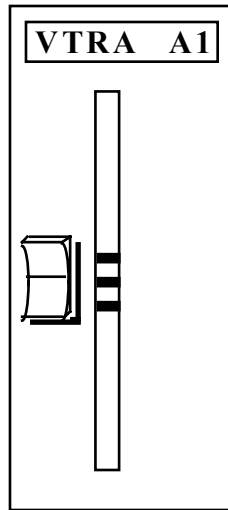
Timeline Fader

The **Timeline Fader** is a special fader used to transition through the current **Event**.
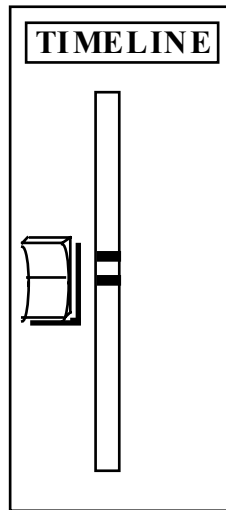
The system default is for the Timeline fader to appear on **Fader #10** of Banks 1 and 2, but may be assigned at the user's discretion via the **Assign** menu.

With the system set in **Edit Mode**, placing the Timeline Fader at the bottom (inifinity) location parks the current event at the Beginning. As the fader is raised, the mixer smothly transitions through all keyframes until the End is reached at the top of the fader's travel.

Note the LEDs on the **Begin** and **End** keys of the Function Select section, which match the current location of the Timeline Fader.

Home Screen

A single press of the HOME key selects the Home Screen on the LED Display. However, some Arria menus require multiple presses of the **HOME** key to get all the way back to the Home Screen.
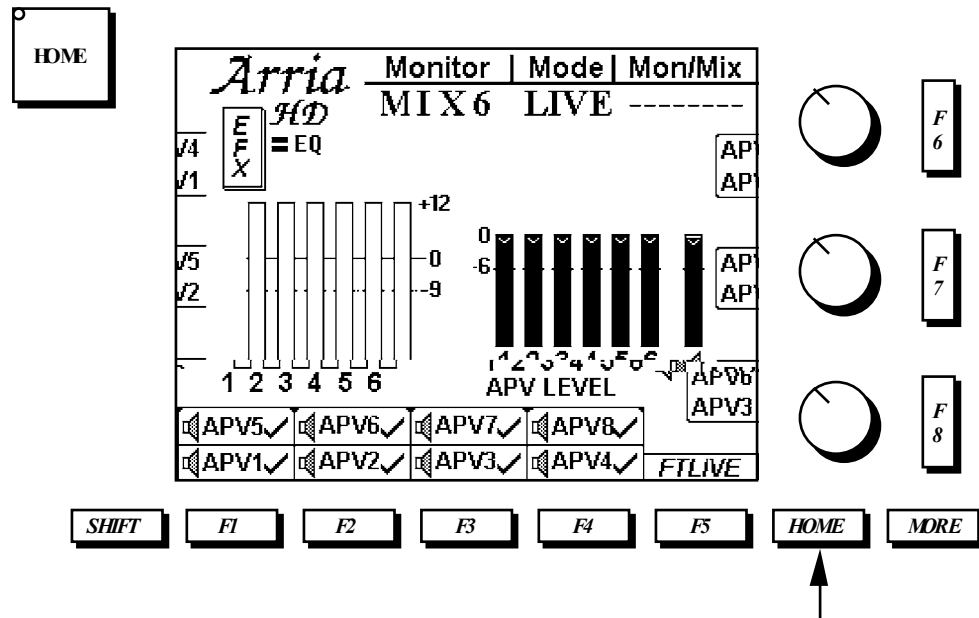
The **HOME** menu tells you a great deal about what you the audio the is coming out of the mixer's Mix and Monitor Busses. Included on this screen are:

- Overall Studio Level (Volume)
- Monitor Bus Meters (6 channels)
- APV Level Meters (6 channels)
- APV Level adjustment
- APV Channel Enables (8 channels)
- Fulltime Live Enable/Disable
- Visual display of Monitoring Source/Mode/Preview Switching state
- Visual display of current **EFX** key delegation

The **HOME** key may also be used to exit from any menu or function on the Arria.

NOTE: The first time HOME is pressed from within a menu branch, the LED Display will return to the top menu of that function. A subsequent press of the HOME key will then display the HOME menu.

Home softkeys at-a-glance

Key	Name	Function
F1	APV1 On/Off	Press this key to toggle the on/off state of **APV1**. **On** is indicated by a checkmark. When enabled, Mix Bus 1 *and* the Channel 1 return from the RVTR are fed to the

		mixer's monitor outputs. When disabled (no check-mark), monitoring for that channel is muted.
F2	APV2 On/Off	Press this key to toggle the on/off state of **APV2**. **On** is indicated by a checkmark. When enabled, Mix Bus 2 *and* the Channel 2 return from the RVTR are fed to the mixer's monitor outputs. When disabled (no check-mark), monitoring for that channel is muted.
F3	APV3 On/Off	Press this key to toggle the on/off state of **APV3**. **On** is indicated by a checkmark. When enabled, Mix Bus 3 *and* the Channel 3 return from the RVTR are fed to the mixer's monitor outputs. When disabled (no check-mark), monitoring for that channel is muted.
F4	APV4 On/Off	Press this key to toggle the on/off state of **APV4**. **On** is indicated by a checkmark. When enabled, Mix Bus 4 *and* the Channel 4 return from the RVTR are fed to the mixer's monitor outputs. When disabled (no check-mark), monitoring for that channel is muted.
F5	FTLIVE	Pressing this key toggles the on/off state of Arria's **Full-Time Live (FTLIVE)** feature for the selected channels. When enabled, **FTLIVE** inhibits control of a fader during **Timeline** (**EDIT MODE**) operation. Faders set to **FTLIVE** are distinguished from "normal" faders by the brightness of the **Channel Label** display above each fader. **FTLIVE** channel labels stay at full brightness during **EDIT MODE**, while the other fader's **Labels** are dimmed. To enable or disable **FTLIVE**, first press (illuminate) the **CH** key on the fader(s) you wish to toggle into or out of **FTLIVE**. Then press the **FTLIVE** softkey.
(F1)	APV5 On/Off	Press this key to toggle the on/off state of **APV5**. **On** is indicated by a checkmark. When enabled, Mix Bus 5*and* the Channel 5 return from the RVTR are fed to the mixer's monitor outputs. When disabled (no check-mark), monitoring for that channel is muted.
(F2)	APV6 On/Off	Press this key to toggle the on/off state of **APV6**. **On** is indicated by a checkmark. When enabled, Mix Bus 6 *and* the Channel 6 return from the RVTR are fed to the mixer's monitor outputs. When disabled (no check-mark), monitoring for that channel is muted.
(F3)	APV7 On/Off	Press this key to toggle the on/off state of **APV7**. **On** is indicated by a checkmark. When enabled, Mix Bus 7 *and* the Channel 7 return from the RVTR are fed to the mixer's monitor outputs. When disabled (no check-mark), monitoring for that channel is muted.
(F4)	APV8 On/Off	Press this key to toggle the on/off state of **APV8**. **On** is indicated by a checkmark. When enabled, Mix Bus 8 *and* the Channel 8 return from the RVTR are fed to the mixer's monitor outputs. When disabled (no check-mark), monitoring for that channel is muted.

Home knob adjustments at-a-glance

Knob	Name	Function
F6	APV1 Level	Rotating this knob adjusts the level of **Monitor Bus 1**.
F7	APV2 Level	Rotating this knob adjusts the level of **Monitor Bus 2**.
F8	APV3 Level	Rotating this knob adjusts the level of **Monitor Bus 2**.
(F6)	APV4 Level	Pressing either the **SHIFT** key or **F6** while rotating this knob adjusts the level of **Monitor Bus 4**.
(F7)	APV5 Level	Pressing either the **SHIFT** key or **F7** while rotating this knob adjusts the level of **Monitor Bus 5**.
(F8)	APV6 Level	Pressing either the **SHIFT** key or **F8** while rotating this knob adjusts the level of **Monitor Bus 6**.

So what's an APV?

APV is short for **A**udio **P**re**V**iew. The Arria's APV settings provide the operator with flexible control over Monitor Mixing and editor-controlled preview switching between the Mix Busses and the RVTR.

While other mixers may give the user the ability to create a custom monitor mix, Zaxcom products preserve the customized levels during a preview switch.

Below is a simplified block diagram of the APV architecture:
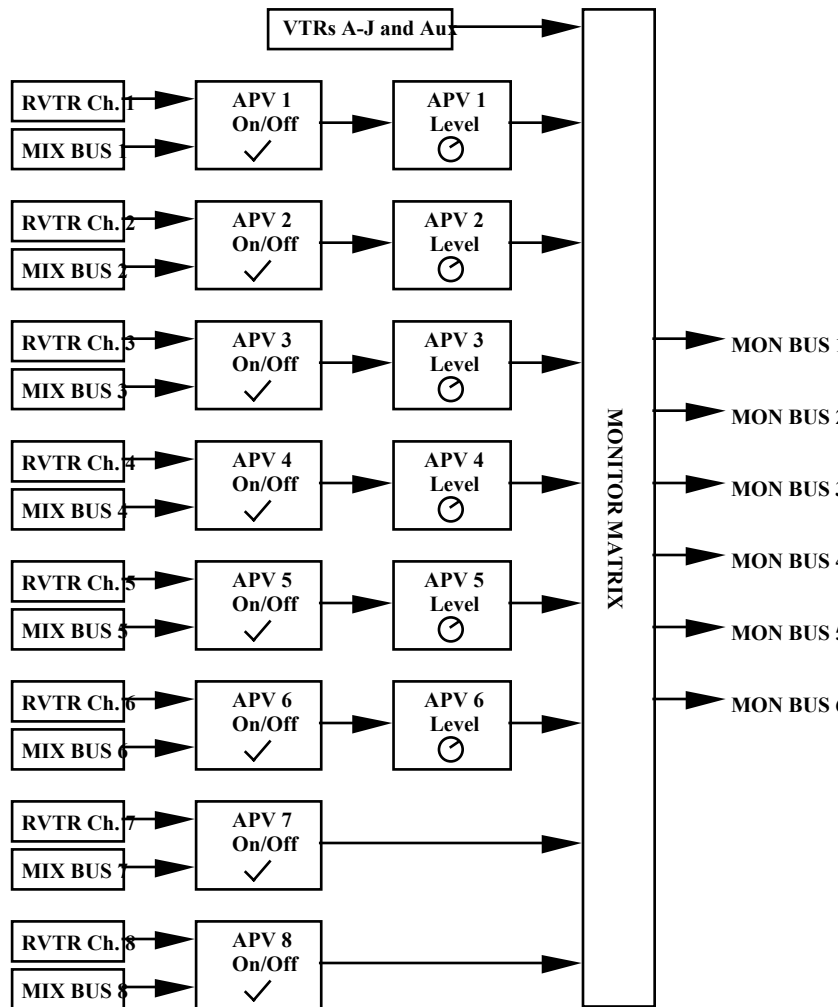
Note the following:

- If an APV is turned off (no check-mark), the Level Setting is meaningless.

- Mix Busses and RVTR Channels are affected equally by a common APV setting.

- Only the Mix Bus and RVTR channels are affected by the APV Enables and Level Controls. Therefore, if the current **Monitor Source** is Logical VTR A-J or Aux, the APV settings will have no effect.

- Mix Bus 7/8 and RVTR channels 7/8 only have On/Off APV control.

APV setup examples

Example 1: If RVTR channel 1 is currently being fed to monitor busses 1 and 2, disabling APV1 will mute the RVTR's channel 1 signal on both monitor busses.

Example 2: You are doing a mix to the RVTR whereby Mixer Channels 1 and 2 are designated as a full stereo mix and Mixer Channels 3 and 4 are designated as a Mix Minus mix. During the edit you may only want to monitor the full mix on Channels 1 and 2. In that case, disabling APV3 and APV4 will let you achieve that result. Similarly, when you want to monitor only the MIX Minus tracks, disabling APV1 and APV2 while enabling APV3 and APV4 will provide that result.

Example 3: You are building a *full level* split-track 4-channel submaster with the channels laid-out as follows:

Channel 1 = Narration
Channel 2 = EFX
Channel 3 = Background Music (stereo, Left)
Channel 4 = Background Music (stereo, Right)

However, since all channels are being recorded at full level, you may find that the music is drowning-out the narration and EFX. To alleviate this problem, simply lower the **APV Levels** for Channels 3 and 4 until a useful blend of the music and other channels exists.

APV Level Bargraphs

The six **APV Level Bargraphs** give the operator a visual indication of the *attenuation* level of each Monitor Bus. The adjustment range is from **Unity Gain** down to **Full Off** (Infinity).

The APV Level controls do not provide gain to the Monitor Busses, only attenuation.

Pressing the **UNITY** key in the control panel's **Aux Select** section sets all Bargraphs to **Unity Gain**.

Monitor Bus Meters

The six **Monitor Bus Meters** give the operator a visual indication of the audio levels feeding the six individual **Monitor Busses**.

Note that these meters are calibrated identically to the LED Bargraph Mix Bus Meters, allowing the operator to accurately compare levels between the two.

EFX Key delegation

The current delegation of the **EFX** key is displayed in the **Home** menu.

$$\begin{bmatrix} E \\ F \\ X \end{bmatrix} = EQ$$
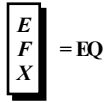
The **EFX Key,** located on each Fader strip, is used to toggle the on/off state of the following audio effects:

- Automatic Gain Control (AGC)
- Compressor/Limiter (C/L)
- Delay
- Equalization (EQ)
- Gate
- Phase

An **EFX Type** is automatically delegated to the **EFX Key** whenever one of the six types listed above is selected. For example:

If the EFX Type is currently EQ, pressing the GATE key delegates Gate to the EFX key.
If the EFX Type is currently AGC, pressing the PHASE key delegates Phase to the EFX key.

The **HOME** menu **<u>does not</u>** have to be open to delegate the **EFX** key.

Once delegated, pressing the **EFX** key on a particular fader will enable or disable that feature for that fader. When enabled, the corresponding LED beside the fader illuminates:

☐ Ø
◼ EQ
☐ C/L
☐ AGC
☐ N-R
◼ GATE
☐ DELAY
☐ MAGIC

Editor Menu

Pressing the **EDITOR** key on the **Function Select** keypad opens the **EDITOR** menu on the LCD Screen.
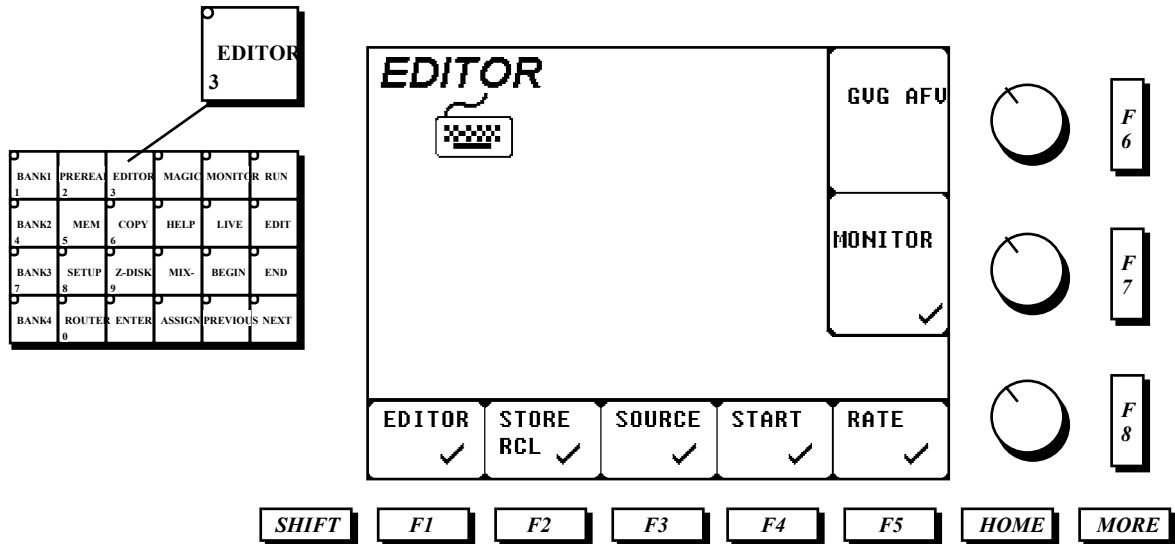
The **EDITOR** menu is used to customize the functionality of the **EDITOR INTERFACE**. Pressing the function key adjacent to each menu item will alternatively enable/disable that item. For "normal" operation, set all of the items in this menu to **ON** (checkmarked).

Editor softkeys at-a-glance

Key	Name	Function
F1	Editor I/F On/Off	Press this key to enable or disable the entire editor interface. When checkmarked, the Arria accepts commands from an edit system and executes them based on the state of *(F2)* thru *(F7)*, detailed below. When disabled, all commands from an edit system are ignored.
F2	STORE/RCL On/Off	Press this key to enable or disable the **Memory Store and Recall** feature. When enabled, Arria **Timeline** and **Configuration** data may be transferred to and from an edit system. When disabled, remote memory register commands are ignored. ***Consult your edit system manufacturer regarding support of this feature.***
F3	SOURCE On/Off	Press this key to enable or disable remote **Source Selection.** When enabled, crosspoint selection commands are executed. When disabled, remote crosspoint commands are ignored. *Setting the mixer to LIVE mode also inhibits remote source selection.*
F4	START On/Off	Press this key to enable or inhibit the remote **Transition Start** command. When enabled, a **Transition Start** command will run the current Arria timeline. When disabled, the Transition Start command is ignored. *Setting the mixer to LIVE mode also inhibits the Start command.*
F5	RATE On/Off	Press this key to enable or inhibit the remote **Transition Rate** command. When enabled, a transition **RATE** sent from an edit system will be to the current **Timeline**. When disabled, remote **RATE** commands are ignored. *Setting the mixer to LIVE mode also inhibits the Rate command.*

F6	GVG AFV On/Off	Press this key to enable or disable the **GVG Audio-Follow-Video** feature. When enable, Arria sources will automatically follow crosspoint selection on certain Grass Valley switcher products. ***This is an optional feature that may not appear in every installation.***
F7	MONITOR On/Off	Press this key to enable or inhibit remote **Monitor** commands. When enabled, monitoring commands are executed, subject to the settings in the **Monitor Mode** menu. When disabled, the current state of the monitor busses will be unaffected by any monitoring commands from the editing system. ***Setting this item to OFF defeats preview switching.***

Note: Under most circumstances it *is not* recommended that the mixer be operated with *F1* disabled, since this mode ignores all editor commands including **Crosspoint Table Download** and **Swap**, which are vital for consistent Logical Source selection by the edit system.

AGC Menu

Pressing the **AGC** key in the **F/X Select** keypad opens the **Automatic Gain Control** menu on the LCD Screen.
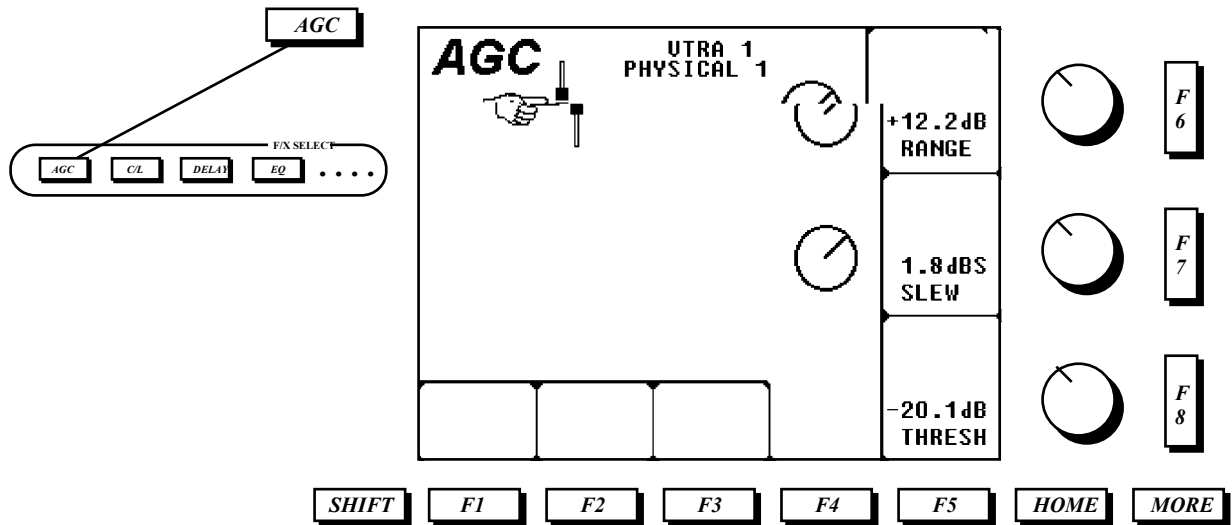
As it name implies, the **Automatic Gain Control** menu is used to maintain a specified audio level. **AGC** is set on a fader-by-fader basis, but may be applied to multiple faders at one time by illuminating the respective **CH** keys.

AGC knob adjustments at-a-glance

Knob	Name	Function
F6	RANGE	Rotate this softknob to adjust the maximum degree of **Boost** or **Attenuation** that will be applied.
F7	SLEW	Rotate this softknob to adjust the time that it takes for a gain boost or attentuation to be fully apllied. Measured in decibels per second (dBS).
F8	THRESHOLD	Rotate this softknob to adjust Threshold for the AGC circuit. Levels below this value will be unaffected by the AGC feature.

AGC is typically used with audio sources that have unpredictable levels. Proper adjustment of this menu's parameters may often result in more uniform levels than if the user were to attempt to "ride" them manually.

PreRead Key

Pressing the **PREREAD** key on the **Function Select** keypad toggles the **PREREAD** function Off and On.
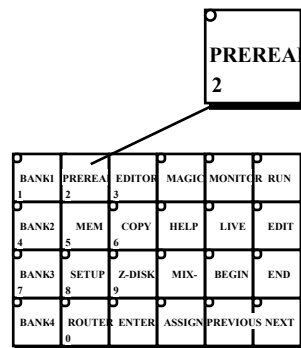
With the **PREREAD** key illuminated, the Arria automatically initializes the RVTR for a PreRead event, subject to the settings in the **Preread Preferences** menu. When set to default, the following actions are initiated:

1) Sets the RVTR's Faders to **Unity**.

2) Sets the RVTR's **Bus Assignments** as follows:

   RVTR Channel 1 > Mix Bus 1
   RVTR Channel 2 > Mix Bus 2
   RVTR Channel 2 > Mix Bus 3
   RVTR Channel 2 > Mix Bus 4
   RVTR Channel 2 > Mix Bus 5
   RVTR Channel 2 > Mix Bus 6
   RVTR Channel 2 > Mix Bus 7
   RVTR Channel 2 > Mix Bus 8

3) Turns all RVTR Channels **On**.

Disabling the **PREREAD** function (key not illuminated), the Arria automatically clears all **Mix Bus Assignments** for the RVTR, thereby preventing feedback when performing a "normal" recording.

PreRead Preferences

Pressing the **SHIFT** and **PREREAD** keys together on the **Function Select** keypad opens the **PreRead Preferences** menu on the LCD Display.
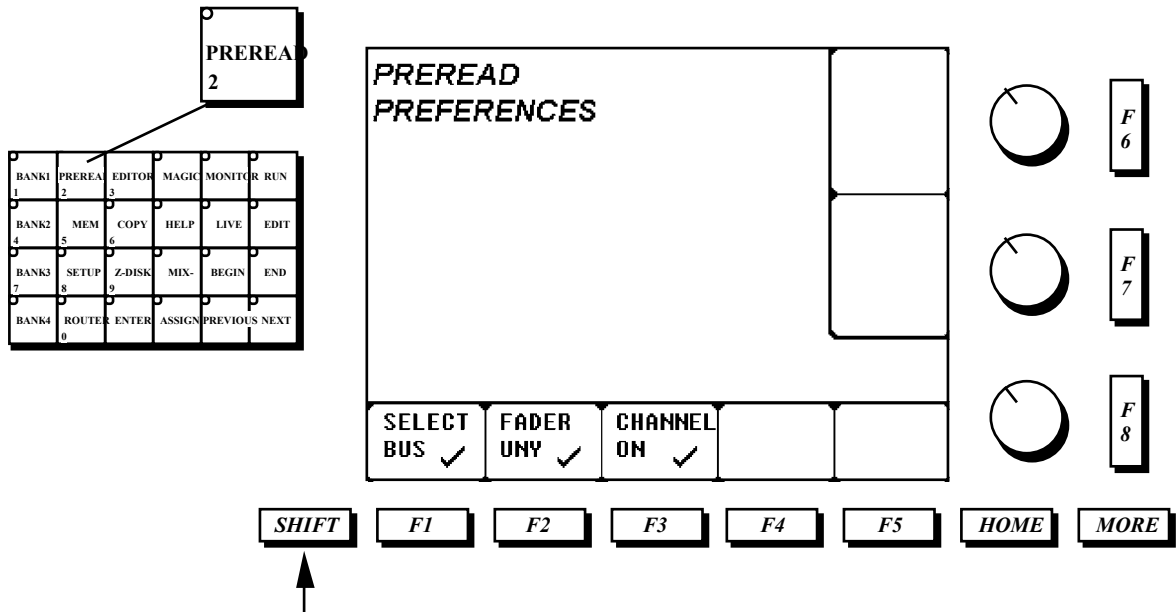
PreRead Preferences softkeys at-a-glance

Key	Name	Function
F1	SELECT BUS	Press this key to enable or disable automatic **Mix Bus Selection** for the RVTR. **On** is indicated by a checkmark. When enabled, a PreRead On command will automatically set the RVTR's bus assignments as follows: RVTR channel 1 > Mix Bus Channel 1 RVTR channel 2 > Mix Bus Channel 2 RVTR channel 3 > Mix Bus Channel 3 RVTR channel 4 > Mix Bus Channel 4 RVTR channel 5 > Mix Bus Channel 5 RVTR channel 6 > Mix Bus Channel 6 RVTR channel 7 > Mix Bus Channel 7 RVTR channel 8 > Mix Bus Channel 8
F2	FADER UNITY	Press this key to enable or disable automatic **Fader Unity** for the RVTR. **On** is indicated by a checkmark. When enabled, a PreRead On command will automatically set the RVTR's faders to Unity Gain for a seamless match edit.
F3	CHANNEL ON	Press this key to enable or disable set all RVTR faders to **On**. When enabled, a PreRead On command will automatically set the RVTR's faders **On**.

Tone Menu

Pressing the **TONE** key on the **Aux Select** keypad opens the **TONE OSCILLATOR** menu on the LED Display. Pressing the **TONE** key a second time will enable the tone oscillator.
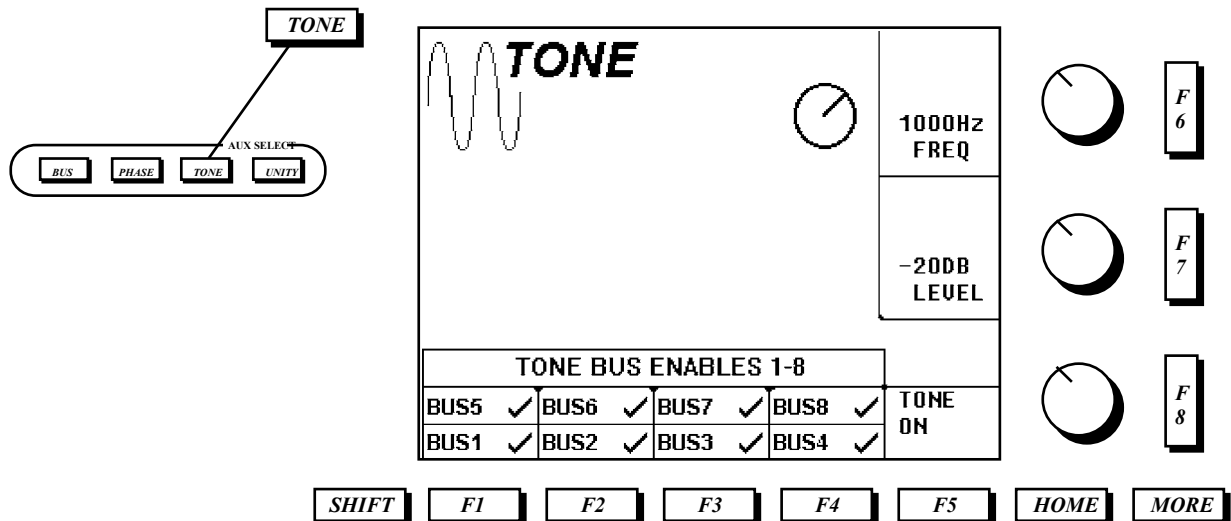
Tone softkeys at-a-glance

Key	Name	Function
F1	BUS 1 On/Off	Press this key to enable or disable **Tone** output on **Mix Bus 1**.
F2	BUS 2 On/Off	Press this key to enable or disable **Tone** output on **Mix Bus 2**.
F3	BUS 3 On/Off	Press this key to enable or disable **Tone** output on **Mix Bus 3**.
F4	BUS 4 On/Off	Press this key to enable or disable **Tone** output on **Mix Bus 4**.
F5	TONE On/Off	Press this key (or the **TONE** key) to enable or disable the **Tone** oscillator. When enabled, **Tone** will be output to all enabled Mix Busses, as set in this menu.
(F1)	BUS 5 On/Off	Press **SHIFT** along with this key to enable or disable **Tone** output on **Mix Bus 5**
(F2)	BUS 6 On/Off	Press **SHIFT** along with this key to enable or disable **Tone** output on **Mix Bus 6**.
(F3)	BUS 7 On/Off	Press **SHIFT** along with this key to enable or disable **Tone** output on **Mix Bus 7**.
(F4)	BUS 8 On/Off	Press **SHIFT** along with this key to enable or disable **Tone** output on **Mix Bus 8**.
F7	OUTPUT LEVEL	Repetitively pressing *F7* cycles through the list of **Tone Output Levels**. Available standard levels are: -20, -18, -16, and -9 dB. This item *must* be set to match your facility's reference level. Check with a qualified authority before altering this setting.

Tone knob adjustments at-a-glance

Knob	Name	Function
F6	TONE FREQUENCY	Rotate this softknob to select a **TONE FREQUENCY**. The range is from 10 to 15,000 Hertz.

Assign Menu

Pressing the **Assign** key on the **Function Select** keypad opens the **Assign** menu on the LCD Screen.
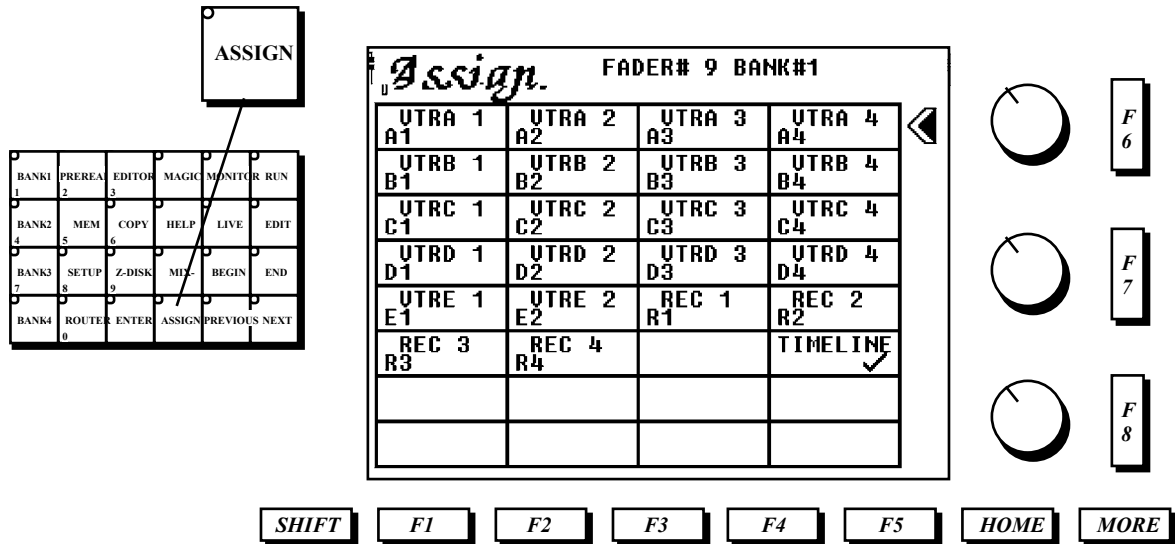
The **Assign** menu is typically used to customize the layout of sources across the faders after using the **Router Menu** to assign Virtual Sources to Logical Devices. This menu is also used to establish a **Group** of channels on a single fader. While only a single Fader may have its channel assignment altered at one time, up to seven channels may be grouped on that particular fader. This allows single-fader control of multiple sources.

The current Bank and Fader # is displayed at the very top of the menu. Selecting a Fader's **CH** key delegates this menu to that Fader.

This menu is basically an XY grid, in that the intersection between an imaginary line extending from the horizontal pointer and the lower row of softkeys determines the selection.

The *F1-F4* keys are used to select one of 4 channels in a horizontal row, while The *F6* and *F7* keys control the position of the row pointer. Press *F6* to move the pointer up one row and *F7* to move the pointer down one row.

Each of the 32 channel boxes in the **Assignment** menu show the 8 character name of the assigned channel and the 2 character designation of the channel for editor identification. Physical inputs 1 to 22 are arranged in sequence from top left to bottom right.

The **CH** keys on each fader and the four **BANK** keys are used to move from fader to fader or bank to bank while in this menu.

Assigning a Group

When a channel is selected for a particular fader, a check mark will appear in the box for the channel selected. When/if more than one channel is checkmarked, the associated fader is now considered a **Grouped Fader**, in that more than one channel is being controlled. Up to seven channels may be assigned to a fader.

Automatic Group Assignment

The Arria has a feature that will automatically assign up to four channels of any Logical Device to a fader with only a single keystroke.

When the **SHIFT** key is held while pressing *F1, F2, F3, or F4*, the mixer will search its database for matching channel labels. If a match is found, checks will appear in all the selected channel boxes and a group fader name will be formed automatically.

Dissolving a Group

Groups may be dissolved with the same keystrokes used to create them. Channels may be removed from a group singley or all at once.

8) To remove a single channel from a group, use the row pointer and *F1, F2, F3, or F4* to un-check the channel.

9) To dissolve an entire group, hold the **SHIFT** key while pressing *F1, F2, F3, or F4.*

Assigning a Timeline Fader

The Timeline Fader gives the operator a unique method of moving through an Event. Similar in function to a fader bar on a video switcher, one complete movement of the fader from the bottom to the top of its travel steps through one entire event.

The Timeline may be assigned to any or all Banks. The system default is for the Timeline to be on both Banks 1 and 2 of the standard system. In a sidecar configuration, the Timeline is always to the right of the RVTR.

Pressing the **MORE** key when the **Assign** menu is open displays the second level of the **Assign** menu on the LCD Screen.
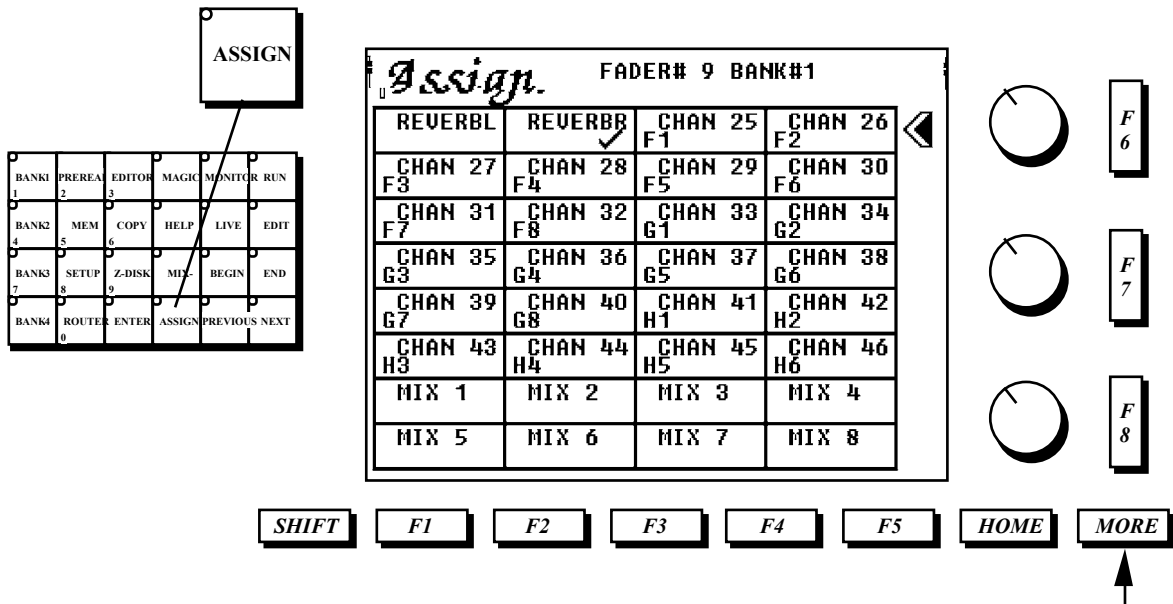
The second level of the **Assign** menu is used to assign optional and extended sources to faders. This menu includes:

- Reverb Channels (optional)
- Input channels 25-46 (used with optional second APU)
- Mix1 - Mix 8 (all systems)

Reverb
The internal WaveMechanics Reverb engine (system option) is a stereo processor, and hence has two outputs that may be placed on faders.

Extended Inputs
For systems requiring more than the standard 22 inputs, a second APU is available, doubling the input capacity of the sytem.

Mix Busses
Any of the Mix Busses may be placed on faders to provide downstream level control. This may be useful in the following situations:

- You need to ride the overall level of a Bus, as opposed to the individual components feeding that bus.

- You need to add more gain to the bus than the individual components feeding that bus can provide (up to +12 dB).

- You need to perform a full-mixer manual fade-up or fade-out.

Creating a Master Fader

By assigning the Mix Busses to a single fader, a **Master Fader** may be created.
1. Press the **CH** key of the designated **Master Fader**.
2. Press **ASSIGN** and **MORE**.
3. Using *F1 - F7,* check-mark as many busses as you are utilizing.
4. Press the **FADER** key to open its menu.
5. Press the **Master Fader's CH** key twice (turns illumination off, then on again)
6. Press *F5* (Set Unity)
7. Press the **Master Fader's CH** key once (to illuminate)
8. Press *F2* (Set Hi Limit)

What you have just created is a Master Fader for all assigned Mix Busses with a range from Unity Gain (0.0 dB down to Full Off (Infinity).

Pressing the **SETUP** key on the **Function Select** keypad opens the **SETUP** menu on the LCD Screen.
This menu is used to define both input-specific (user) and system-specific (engineering) parameters.

Setup softkeys at-a-glance

Key	Name	Function
F2	NAME BUS	Press this key to enter the **Bus Name** menu, which may be used to customize the **Mix Bus** and **Monitor Bus** 8-character **Channel Labels**, which appear in the Mix Assign and Mon Assign menus. The custom labels for the Mix Busses also appear above the respective fader(s) when a Mix Bus is assigned.
F3	NAME GROUP	Press this key to enter the **Group Name** menu, which provides labeling of *established* groups. When a group is selected and configured (via the **Assign Menu**), the initial **Group Name** is derived from the names of the individual channels in the group. The **Group Name** feature is used to customize the Arria-assigned name, if desired.
F4	SAMPLE RATE CONVERTOR	Press this key to enable or disable **Sample Rate Convertion** for the selected (by pressing a Fader's **CH** key) input channel pair. The currently-selected input is displayed at the top of the menu. *If a digital source is not locked to the Arria sample rate clock, or if there is no common reference generator, the sample rate converter must be enabled or audio distortion will result. Even if the input and output rates are the same, unlocked sources must use the sample rate converter.* The sample rate converter is also useful when digital sources running at clock speeds other than the chosen master frequency (selected in the Setup/More menu) are to be included in a Mix.

F7	INPUT TYPE	Press this key to toggle between **Analog** and **Digital** for the selected (by pressing a Fader's **CH** key) input channel pair. The currently-selected input is displayed at the top of the menu.
		Since each Arria digital input is actually a 2-channel source, setting a single channel as Digital will automatically set its "mate" to Digital. Similarly, when setting a single input as Analog, both channels of that digital pair will be altered.
		Analog inputs are optional, and only available for inputs 1-8
(F7)	INPUT LEVEL	When the **Input Type** is **Analog**, pressing **SHIFT** and *F7* toggles between **Line and Mic** levels for the selected (by pressing a Fader's **CH** key) input channel pair. The currently-selected input is displayed at the top of the menu.
		Analog inputs are optional, and only available for inputs 1-8

Setup knob adjustments at-a-glance

Knob	Name	Function
F6	LINE LEVEL	Rotate this softknob to adjust the **Line Input Gain** for the selected analog input. The nominal value for a +4.0dB input is **200**. This setting has no effect when an input is set to **Digital**.
		Analog inputs are optional, and only available for inputs 1-8
(F6)	MIC LEVEL	Press the **SHIFT** key while rotating this softknob to adjust the **Mic Input Gain** for the selected analog input. This setting has no effect when an input is set to **Digital**.
		Analog inputs are optional, and only available for inputs 1-8
(F8)	LCD CONTRAST	Rotate this softknob to adjust the contrast of the **LCD Display**.

With the **Setup** menu open, pressing the **More** key on the **Function Select** keypad opens the second level of the **SETUP** menu on the LCD Screen.
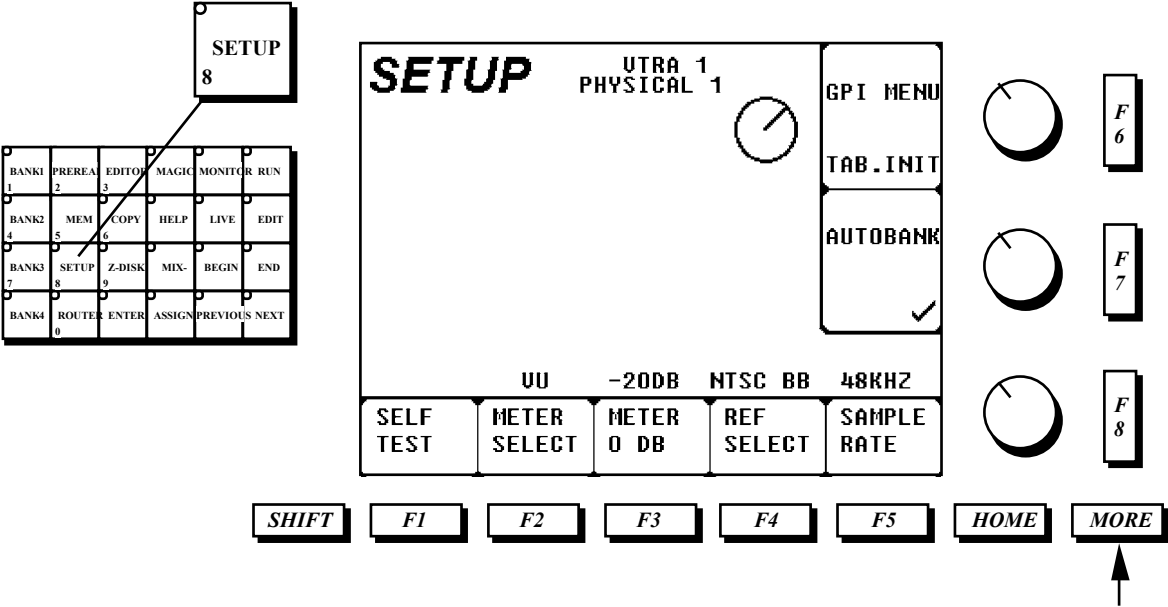
This menu is used to define both input-specific (user) and system-specific (engineering) parameters.

Setup/More softkeys at-a-glance

Key	Name	Function
F1	SELF TEST	Press this key to execute a mixer self-test routine. If a fault is detected at the Control Panel or Audio Processor, an indication will be displayed on the LCD Screen.
F2	METER SELECT	Repetitively press this key to select the type of ballistics for the Arria meters. Supported ballistics are VU, PPM1, and BBC. **VU** and **PPM1**(PPM) conform to standardized metering ballistics, while **BBC** is a custom ballistic setting used exclusively by that organization.
F3	METER 0 DB	Repetitively press this key to select a digital input reference level that will correspond to **0 dB** on the Arria meters. Many countries have established standards for this relationship. For example: USA -20 UK -18 GERMANY -9
F4	REFERENCE SELECT	Repetitively press this key to select a **Lock Reference** for the APU. The choices are: **Internal**: The Arria locks to its own internal crystal. *Only used when the Arria is the reference for all other devices.* **PAL BB**: The Arria locks to a 625-line black burst signal applied to the APU. **NTSC BB**: The Arria locks to a 525-line black burst signal applied to the APU. **AES REF**: The Arria locks to an AES reference signal applied to the APU.

		You must use a black reference!

F5	SAMPLE RATE	Repetitively press this key to select a system **SAMPLE RATE**, typically set to match a house standard or the sample rate of the record device. Supported frequencies are: 32, 44.056, 44.1, and 48 kHz.
F6	TABLE INIT	Press this key to reset the mixer's editor crosspoint table to the following configuration: BLK = 0, AVTR = 1, BVTR = 2, CVTR = 3, DVTR = 4, EVTR = 5, FVTR = 6, GVTR = 7, HVTR = 8, IVTR = 9, JVTR = 12, RVTR =10
(F6)	GPI MENU	Press SHIFT and *F6* to open the **GPI** menu.
F7	AUTO BANK	Press this key to toggle the state of the **AutoBank** feature. When enabled (check-marked), AutoBank automatically selects a source's corresponding fader Bank when selected from an edit system. *AutoBank is only applicable to 10-fader (standard) systems.*

Note: One of the most common causes of monitoring inconsistencies is a mismatch between the edit system's crosspoint table and that of the mixer's, which can happen after an edit system Swap (Device Exchange) or after a source is added or deleted during a session. While this is generally not an issue with most modern edit systems, the following can still result in a mismatch:

1) Running with the Arria's Editor Interface disabled at the point a Recorder Swap occurs.
2) Running with the edit system's Mixer Interface disabled at the point a Recorder Swap occurs.
3) Attempting to perform a Device Exchange between two sources.

Note: The Axial edit system has a feature that allows the operator to freely exchange the logical position of all devices under its control. However, the Arria only supports swaps between a source and the current recorder. Edit system requests for source swaps are ignored.

Setup / Name Bus Menu
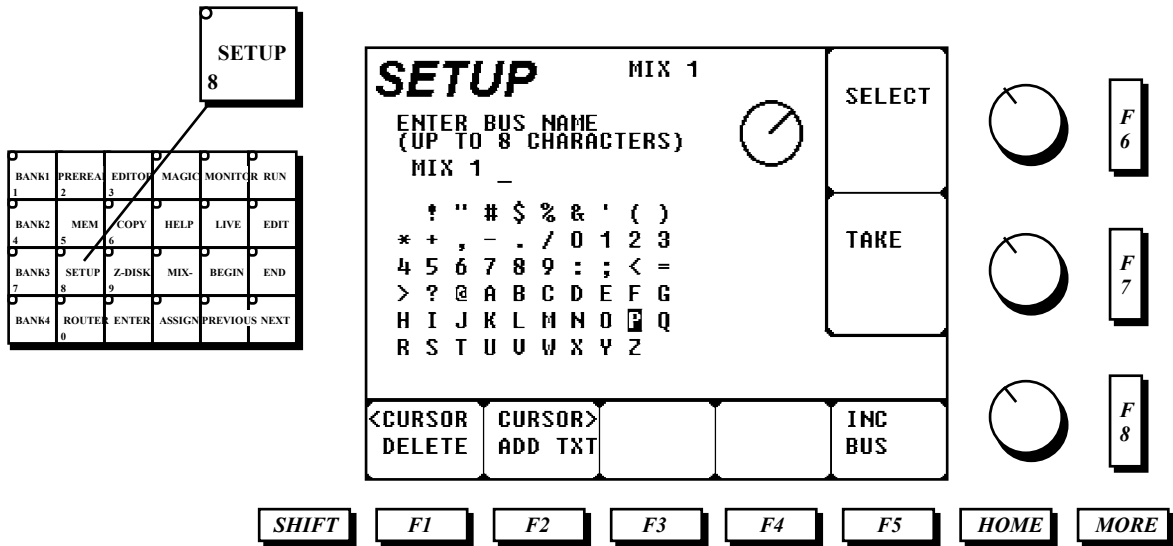
Setup/Name Bus softkeys at-a-glance

Key	Name	Function
F1	CURSOR LEFT/ DELETE	Press this key to move the Input Name **Cursor** to the **Left** *and* **Delete** characters as you go. Press **SHIFT** and *F1* to move the cursor left *without* deleting any characters.
F2	CURSOR RIGHT/ ADD TEXT	Press this key to move the Input Name **Cursor** to the **Right** *and* **Add** the currently-selected character as you go. Press **SHIFT** and *F2* to move the cursor right *without* adding any characters.
F5	INCREMENT BUS	Repetitively press this key to cycle through the list of **Mix** and **Monitor Busses**, displayed at the top of the LCD Screen.
F7	TAKE	Press this key to accept the edited **Bus Name**.

Setup/Name Bus knob adjustments at-a-glance

Knob	Name	Function
F6	Select	Rotate this softknob to move the on-screen character selection cursor. The currently-selected character is displayed as an inverse video.
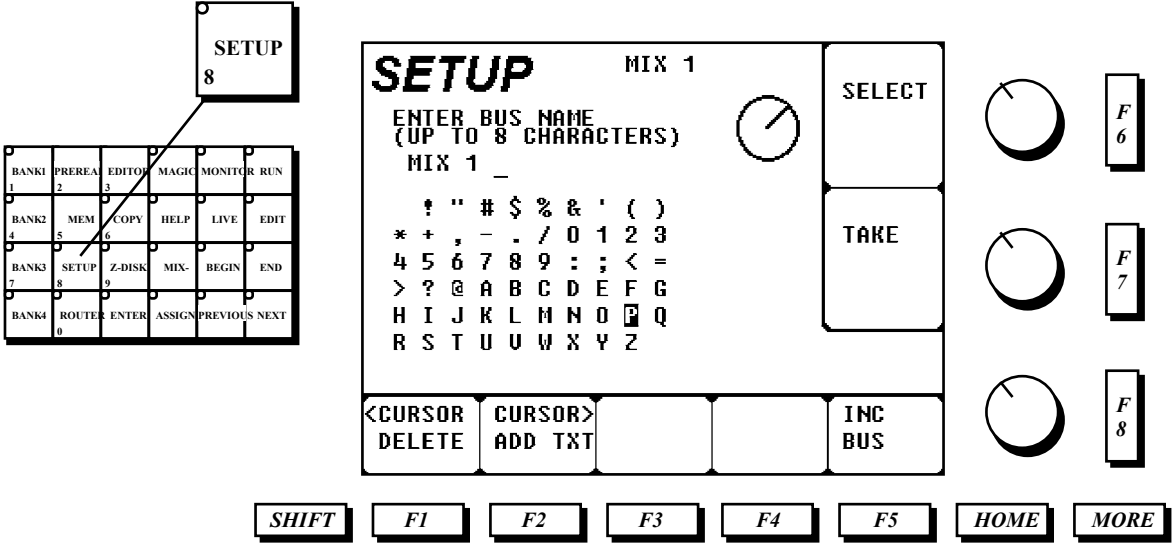
Setup/Name Group softkeys at-a-glance

Key	Name	Function
F1	CURSOR LEFT/ DELETE	Press this key to move the Input Name **Cursor** to the **Left** *and* **Delete** characters as you go. Press **SHIFT** and *F1* to move the cursor left *without* deleting any characters.
F2	CURSOR RIGHT/ ADD TEXT	Press this key to move the Input Name **Cursor** to the **Right** *and* **Add** the currently-selected character as you go. Press **SHIFT** and *F2* to move the cursor right *without* adding any characters.
F7	TAKE	Press this key to accept the edited **Bus Name**.

Setup/Name Bus knob adjustments at-a-glance

Knob	Name	Function
F6	Select	Rotate this softknob to move the character selection cursor. The currently-selected character is displayed as inverse black-and-white.

The **GPI OUT** menu is accessed by pressing *(F6)*, in the second level of the **Setup** menu.
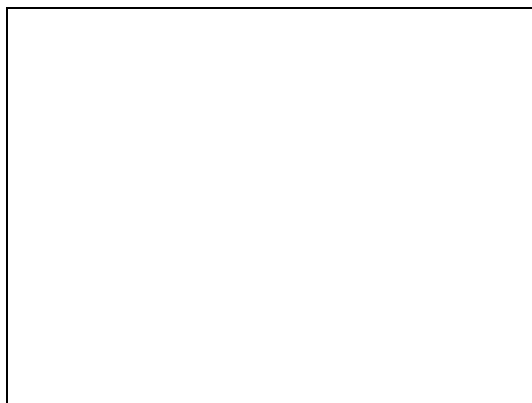
There are 2 ways to use gpi out. They are with the fader start method or with the channel on key. **Fader Start** is typically used to trigger an external device to go into the play mode when the fader is moved from the infinity position. **Channel On** is typically used to indicate on air type conditions (tally) with a continious gpi output.

GPI Out softkeys at-a-glance

Key	Name	Function
F1	FADER START	Press this key to toggle the On/Off state of the **Fader Start** feature. When enabled (check-marked), the Arria will pulse a user-defined GPI whenever the selected fader is moved from the infinity (∞) position. When disabled (no check-mark) the state of the fader's **Channel On/Off** key is used to control the state of the pulse.
F3	TALLY MIC	Press this key to toggle the On/Off state of the **Mic Tally** feature. When enabled (check-marked), the GPI will be held low (active) continuously. This mode is typically used for an "On Air" indicator. When disabled (no check-mark) the GPI will take the form of a momentary pulse. This mode is typically used to instruct an audio playback device to Play.

GPI Out knob adjustments at-a-glance

Knob	Name	Function
F6	GPI PLAY	Rotate this knob to select on of the 20 **GPI Outputs** to delegate to the selected fader for the **PLAY** (on) mode. Set this value to zero for no GPI output.
F7	GPI STOP	Rotate this knob to select on of the 20 **GPI Outputs** to delegate to the selected fader for the **STOP** (off) mode. Set this value to zero for no GPI output.

Memory Menu

Pressing the **MEM** key in the Function Select section opens the **Memory** menu on the LCD screen.
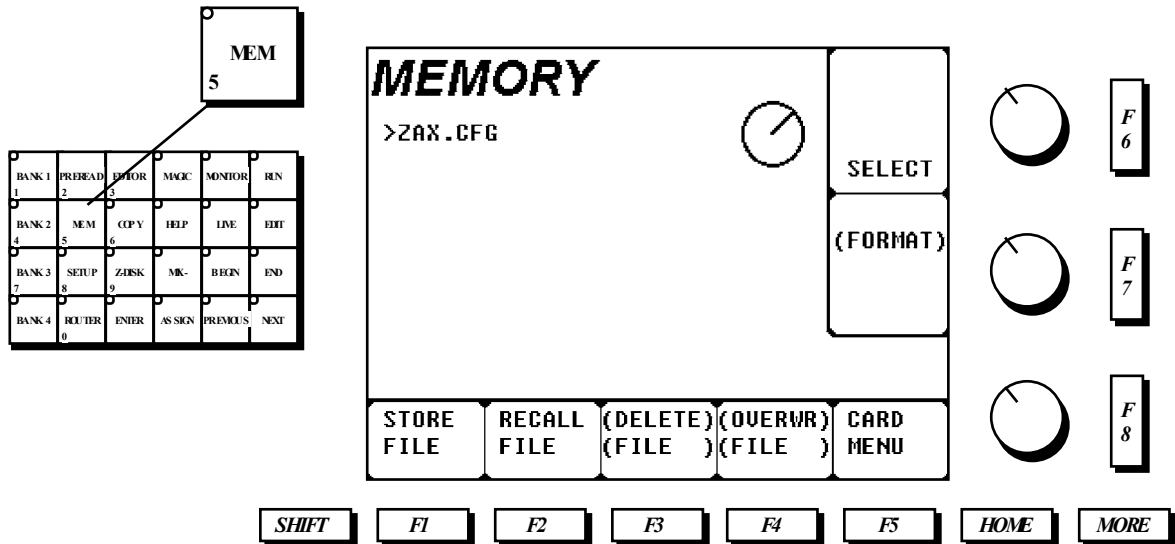
The **MEMORY** menu is used to store and recall system **Configuration** and **Timeline** data from memory. Items stored as part of a memory file are:

- **All Setup Menus (except Router I/O)**
- **Tone Menu Settings**
- **Routing Assignments**
- **Fader Assignments**
- **Monitor Assignments**
- **Monitor Levels**
- **Panning Assignments/Balance**
- **The Current Event (Timeline)**

Memory softkeys at-a-glance

Key	Name	Function
F1	STORE FILE	Press this key to initiate a **Store** of the current mixer configuration and Timeline. The user is then prompted to enter a **File Name**.
F2	RECALL FILE	Press this key to **Recall** the currently-selected **File**. During the Recall, *F2's* lamp will turn off. When the lamp re-lights, the Recall is complete.
(F3)	DELETE FILE	Press **SHIFT** and *F3* to **Delete** the currently-selected **File**. *There is no "Undo" for this operation!!*
(F4)	OVERWRITE FILE	Press **SHIFT** and *F4* to **OverWrite** the currently-selected **File**. *There is no "Undo" for this operation!!*
F5	CARD MENU	If a PCMCIA storage card is currently inserted in the mixer, press this key to select the **Card Store/Recall** menu. If no card is present, no action will occur.
(F7)	FORMAT	Press **SHIFT** and *F7* to **Format** (erase) the section of Arria memory devoted to Setups and Timelines. *There is no "Undo" for this operation!!*

Memory knob adjustments at-a-glance

Knob	Name	Function
F6	Select	Rotate this softknob to move the **File Name** selection cursor adjacent to the file to Recalled, Deleted, or Overwritten.

The **Memory Card** menu is used to Store and Retrieve configurations, Timelines, and the Router tables from a PCMCIA card.
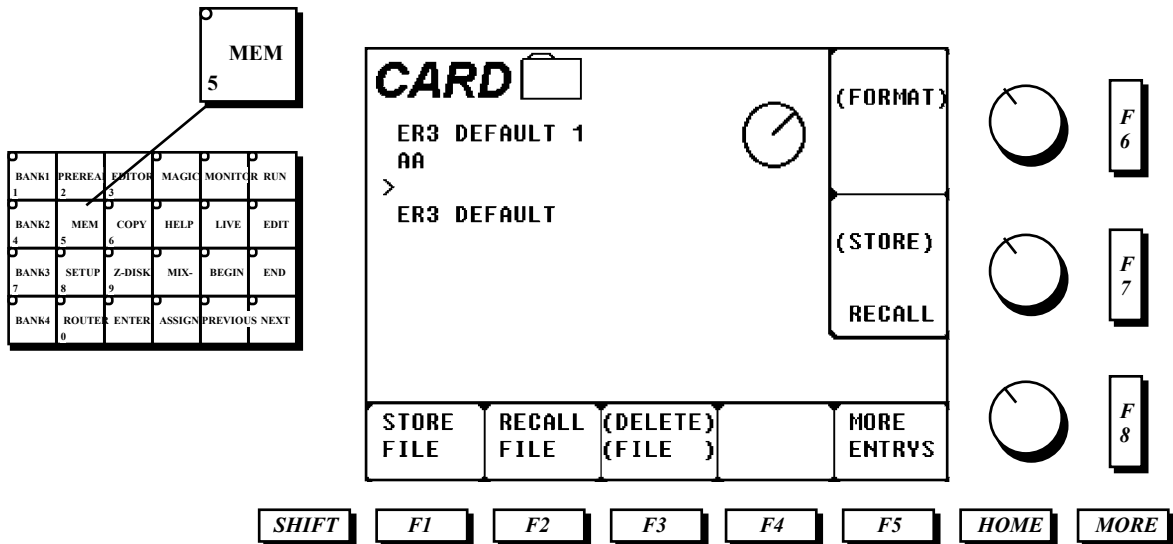
Inserting a card into the PCMCIA connector on the Arria control panel automatically calls this menu. The **Card** menu may also be accessed from within the **Memory** menu.

Card softkeys at-a-glance

Key	Name	Function
F1	STORE FILE	Press this key to initiate a **Store** of the current mixer configuration and Timeline. The user is then prompted to enter a **File Name**.
F2	RECALL FILE	Press this key to **Recall** the currently-selected **File**. During the Recall, *F2's* lamp will turn off. When the lamp re-lights, the Recall is complete.
(F3)	DELETE FILE	Press **SHIFT** and *F3* to **Delete** the currently-selected **File**. *There is no "Undo" for this operation!!*
F5	MORE ENTRYS	If there are more files on the card than can be displayed on the LCD screen at one time, pressing this key recalls subsequent pages of files.
(F6)	FORMAT	Press **SHIFT** and *F6* to **Format** (erase) the entire contents of the Card. *There is no "Undo" for this operation!!*
F7	RECALL RTR	Press this key to Recall the tables of Router Inputs and Outputs to Arria's non-volatile memory.
(F7)	STORE RTR	Press **SHIFT** and *F7* to Store the tables of Router Inputs and Outputs from Arria's non-volatile memory to the Card.

Card knob adjustments at-a-glance

Knob	Name	Function
F6	Select	Rotate this softknob to move the **File Name** selection cursor adjacent to the file to Recalled, Deleted, or Overwritten.

Compressor/Limiter Menu

Pressing the **C/L** key in the **F/X Select** section opens the **Compressor/Limiter** menu on the LCD Screen.

```
          C/L

                    COMPRESSOR  UTRA 1         + 7.2dB
                    LIMITER     PHYSICAL 1       GAIN
              F/X SELECT                       - 8.8dB
      AGC  C/L  DELAY  EQ  . . . .               THRESH      F
                                                            6

                                                255mS
                                                RELEASE
                                                            F
                                                100mS       7
                                                ATTACK

                                                            F
                                                6.3:1       8
                                                RATIO

      SHIFT   F1    F2    F3    F4    F5    HOME   MORE
```
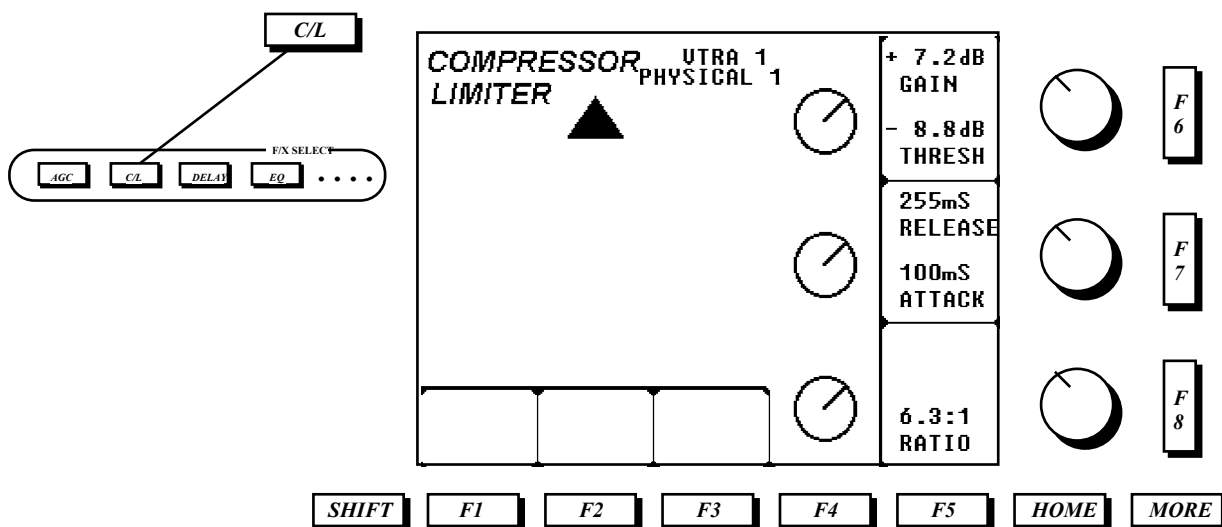
Compressor/Limiter knob adjustments at-a-glance

Knob	Name	Function
F6	THRESHOLD	Rotate this knob to adjust the the **Threshold** (level) at which compression will be active (similar in function to the Clip control on a video keyer).
F7	ATTACK	Rotate this knob to adjust how quickly the compressor/limiter reacts once the input has reached or exceeded the **Threshold.**
F8	RATIO	Rotate this knob to adjust the ratio between the input and output of the compressor/limiter. Higher values result in greater compression.
(F6)	GAIN	Pressing **SHIFT** while rotating *F6* sets the compressor/limiter input level.
(F7)	RELEASE	Pressing **SHIFT** while rotating *F7* sets how quickly the compressor/limiter returns to normal once the input level falls below the **Threshold**.

NOTE: Multiple channels may be adjusted simultaneously by selecting (and illuminating) the appropriate Fader "CH" keys.

Delay Menu

Pressing the **DELAY** key in the **F/X Select** section opens the **DELAY** menu on the LCD Screen.
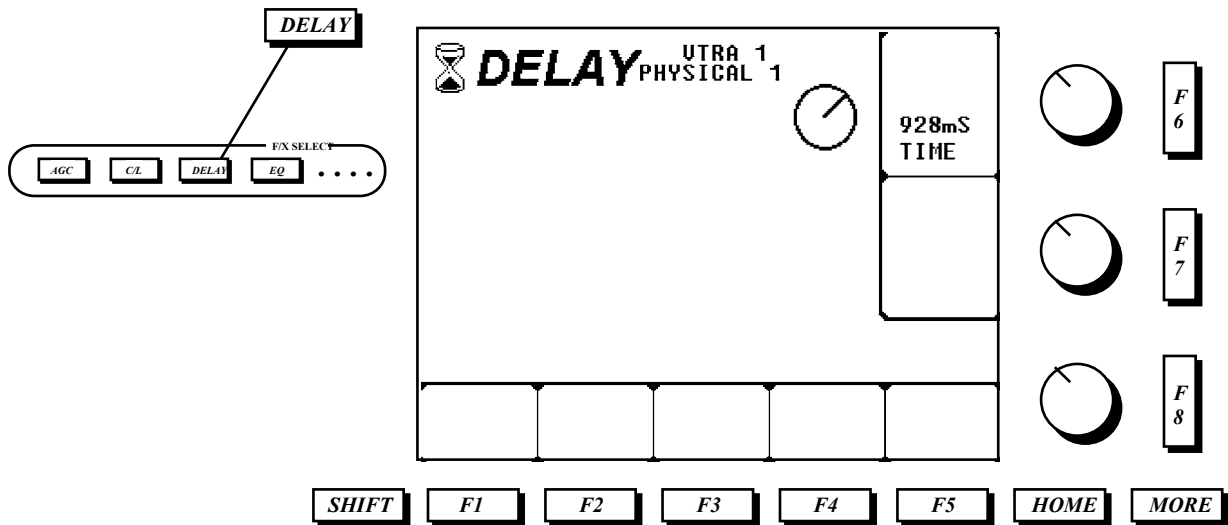
The **DELAY** menu provides channel-by-channel adjustment of audio **Delay.** Whenever a channel has a **Delay** value greater than zero, the **DELAY** legend on the corresponding channel's Fader will illuminate.

Audio Delay is often used to compensate for the corresponding video delay introduced by digital effects devices, frame synchronizers, and satellite transmissions.

All delay values are in milliseconds (ms), and thus afford the operator outstanding lipsync precision

1 frame of delay (NTSC) is roughly equal to 33ms.

To set a Delay value:
- Press the **CH** key of the fader/source to be delayed.
- Press the **DELAY** key. Note that the current logical/physical selection is displayed at the top of the screen.
- Rotate softknob *F6* to set the delay value.

Repeat the above (ommitting step #2) for any other channels.

To apply the *same* delay value to multiple channels, consider using the **COPY** menu.

Select the **UNITY** key in the **Aux Select** section to set the Delay value for the designated fader to zero (00).

Pressing the **EQ** key in the F/X SELECT section opens the **Equalization** menu on the LCD Screen.
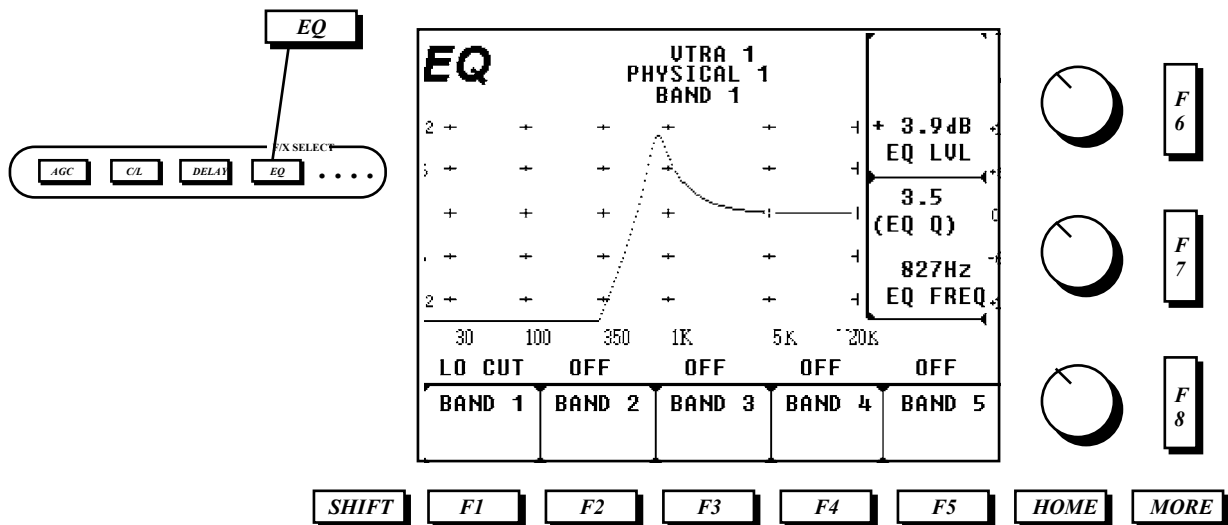
The **EQ** menu provides comprehensive channel-by-channel adjustment of **Equalization**. Five bands of user-defined EQ types provide enough tools to adequately "fix" just about any source As the EQ is adjusted, the EQ graph displays the current curve of all 5 bands simultaneously. The EQ tally light on the fader must be lit for EQ to be engaged. Note not all adjustment parameters are active on all filter types.

EQ softkeys at-a-glance

Knob	Name	Function
F1-F5	BAND	The first time one of these keys is pressed, the menu becomes delegated to that Band. Repetitive presses of these keys cycle through the list of **EQ Types**. When "Off" is displayed, no filtering is provided on that band.

EQ knob adjustments at-a-glance

Knob	Name	Function
F6	LEVEL	Rotate this knob to adjust the amount of **Boost** or **Attenuation** applied to the current Band.
F7	FREQUENCY	Rotate this knob to adjust the **Frequency** of the current band.
(F7)	Q	Pressing **SHIFT** while rotating *F7* adjusts the **Q** factor of the current band.

Equalization is enabled by illuminating the **EFX** key on a fader with **EQ** as the current **Effect**.

Note that the first time a **Band** key is pressed, the action is to delegate the menu to that band. For example: If the EQ menu is currently delegated to **Band 1** (which you would know by checking the top of the LCD Screen), pressing the softkey for **Band 2** delegates the menu to that band. Subsequent presses of the **Band 2** softkey cycles through the list of **EQ Types**.

EQ Types

Name	Function
LO CUT	A filter that attenuates low frequencies, while passing those above a specified frequency.
NOTCH	A filter capable of attenuating an extremely narrow band of frequencies.
PEAK	A filter that supplies a peak amount of boost or attenuation at the turnover frequency, and to a lesser degree at the frequencies above and below the turnover frequency.
LO SHELF	A filter that supplies a constant amount of boost or attenuation at all frequencies beyond the equalizer's turnover frequency.
HI SHELF	A filter that supplies a constant amount of boost or attenuation at all frequencies beyond the equalizer's turnover frequency.

NOTE: Multiple channels may be adjusted simultaneously by selecting (and illuminating) the appropriate FADER "CH" keys.

Fader Menu

Pressing the **FADR** key in the **F/X Select** section opens the **FADER** menu on the LCD Screen.
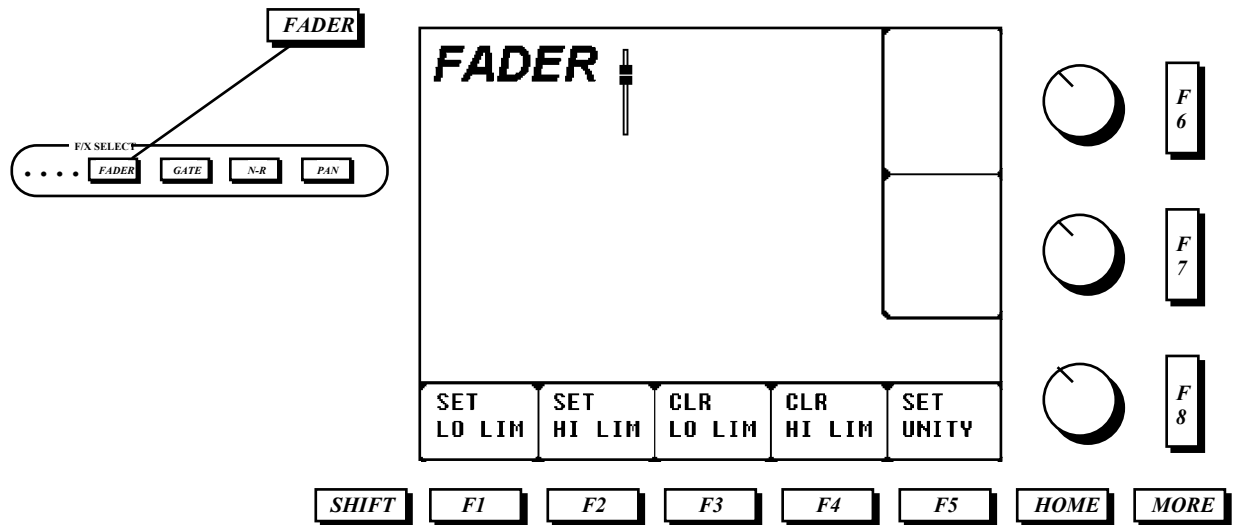
The **FADER** menu provides tools that enhance the operation of the mechanical faders.

Fader softkeys at-a-glance

Key	Name	Function
F1	SET LOW LIMIT	Press this key to insert an electrical **Lo Limit** for the chosen fader(s) at the current physical fader position(s). A Lo Limit is set by pressing the **CH** key on the desired fader(s), followed by *F1.* When a Lo Limit is set, the selected fader's **"L LIM"** legend will illuminate.
F2	SET HIGH LIMIT	Press this key to insert an electrical **Hi Limit** for the chosen fader(s) at the current physical fader position(s). A Hi Limit is set by pressing the **CH** key on the desired fader(s), followed by *F2.* When a Hi Limit is set, the selected fader's **"H LIM"** legend will illuminate.
F3	CLEAR LOW LIMIT	Press this key to **Clear** the electrical **Lo Limit** for the chosen fader(s). After a Low Limit is cleared, the **"L LIM"** legend on the selected fader(s) will extinguish.
F4	CLEAR HIGH LIMIT	Press this key to **Clear** the electrical **Hi Limit** for the chosen fader(s). After a Hi Limit is cleared, the **"H LIM"** legend on the selected fader(s) will extinguish.
F5	SET UNITY	Press this key to set the electrical level of the chosen fader(s) to **Unity**, regardless of the fader's physical position.

Fader Limits provide an accurate, repeatable method of limiting fader travel. Replacing grease pencil marks, masking tape, and thumbs, the **Fader Limits** feature provides a modern solution for those times when it is desirable to limit fader travel in a **LIVE** mix.

Gating Menu

Pressing the **GATE** key in the **F/X Select** section opens the **GATING** menu on the LCD Screen.
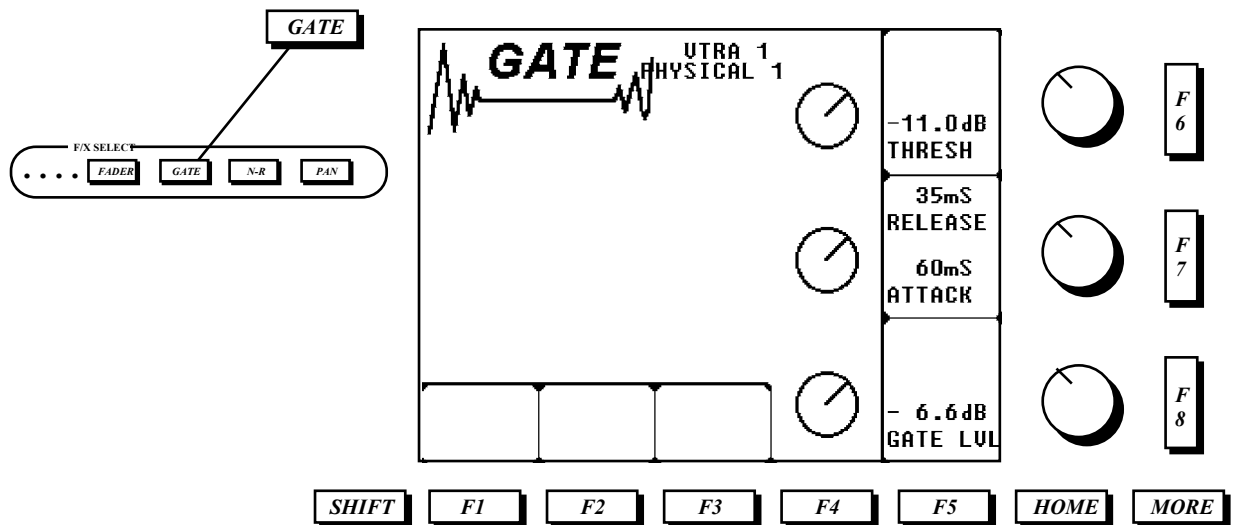
The **GATE** menu provides channel-by-channel adjustments for **GATING**, typically used to minimize extraneous background noise that may occur on recordings of speech. Gating may also be used to create audio effects.

Gate knob adjustments at-a-glance

Knob	Name	Function
F6	THRESHOLD	Rotate this knob to adjust the the **Threshold** (level) at which Gate will be active (similar in function to the Clip control on a video keyer).
F7	ATTACK	Rotate this knob to adjust how quickly the Gate opens once the input has reached or exceeded the **Threshold.**
F8	GATE LEVEL	Rotate this knob to adjust the level of attenuation when the Gate is open.
(F7)	RELEASE	Pressing **SHIFT** while rotating *F7* sets how quickly the Gate closes once the input level falls below the **Threshold**.

NOTE: Multiple channels may be adjusted simultaneously by selecting (and illuminating) the appropriate FADER "CH" keys.

PAN Menu

Pressing the **PAN** key in the **F/X Select** section opens the **PAN** menu on the LCD Screen.
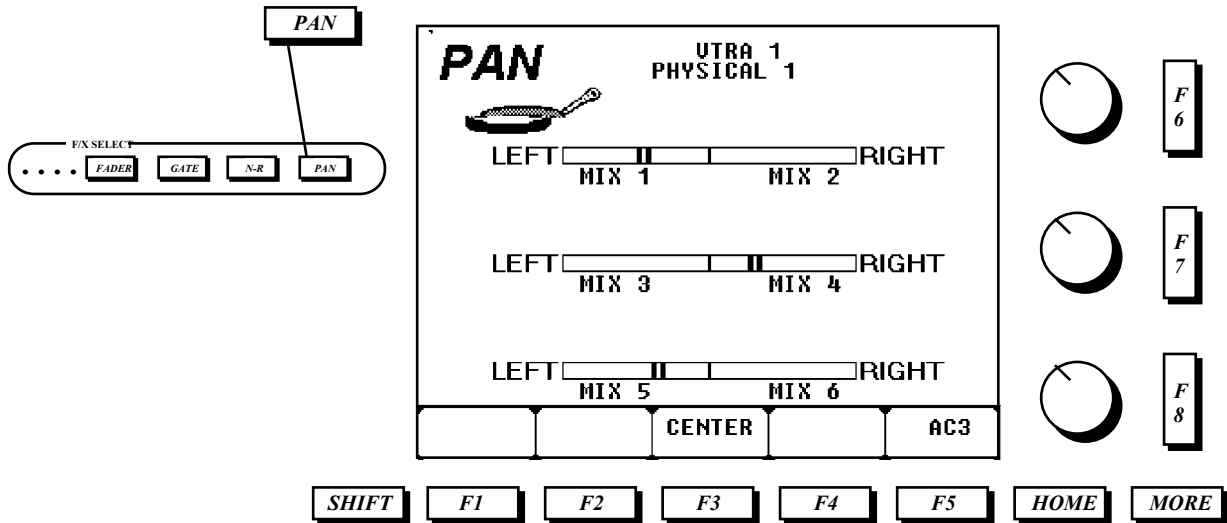
The **PAN** menu is used for balancing a selected channel between the six Mix Busses. With the PAN menu accessed, selecting a fader's CH key will enable the current panning setup in the GRAPHIC DISPLAY to be applied to a specific channel.

PAN softkeys at-a-glance

Key	Name	Function
F3	CENTER	Press this key to set all Panning adjustments to Unity.
F5	AC3	Press this key to select the **Dolby AC3 Panning** menu, which provides panning control with a 5.1 speaker environment.

PAN knob adjustments at-a-glance

Knob	Name	Function
F6	MIX1/MIX2	Rotate this knob to **Pan** the audio source between **Mix 1** and **Mix 2**.
F7	MIX3/MIX4	Rotate this knob to **Pan** the audio source between **Mix 3** and **Mix 4**.
F8	MIX5/MIX6	Rotate this knob to **Pan** the audio source between **Mix 5** and **Mix 6**.

Note: Before attempting to **PAN**, ensure that the Mix Busses that you will be panning between are enabled in the **Mix Assign** menu.

AC3 PAN Menu

Press either the *F5* or **MORE** key from within the **PAN** menu to open the **AC3 PAN** menu on the LCD Screen.
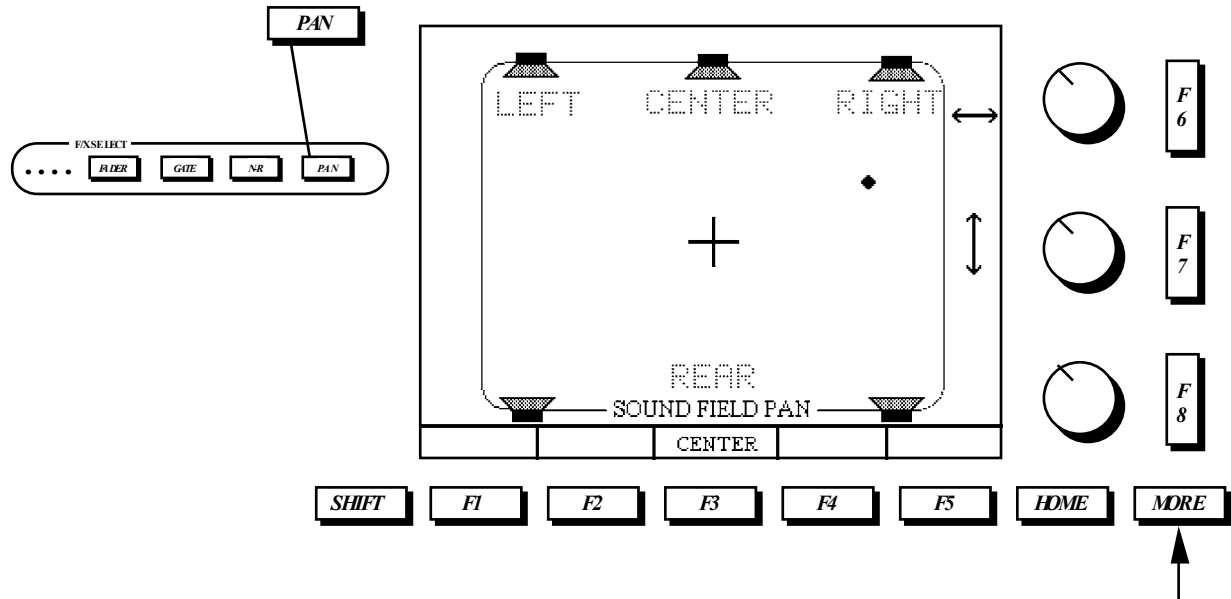
The **AC3 PAN** menu is used for surround-sound panning in a 5-speaker **Dolby AC3** environment.

AC3 softkeys at-a-glance

Key	Name	Function
F3	CENTER	Press this key to set all Panning adjustments to the **Center** position.

AC3 knob adjustments at-a-glance

Knob	Name	Function
F6	Left/Right	Rotate this knob to position the sound field from **Front** to **Rear** of **Center**.
F7	Front/Rear	Rotate this knob to position the sound field from **Left** to **Right** of **Center**.

Note: Before attempting to **PAN**, ensure that the Mix Busses that you will be panning between are enabled in the **Mix Assign** menu.

Pressing the **BUS** key in the **Aux Select** section of the control panel opens the **MIX ASSIGN** menu on the LCD Screen.
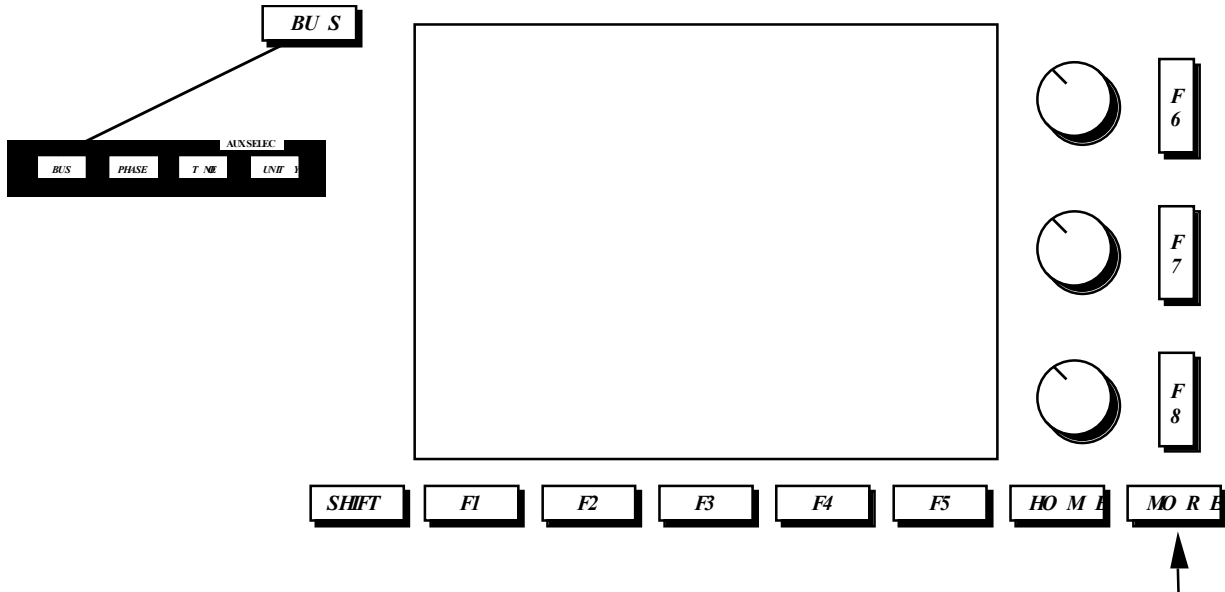
This menu is used to assign input channels to Mix Busses on an input-by-input basis.

The companion **MON ASSIGN** menu is used to assign a monitoring configuration for each input. With the exception of the RVTR, the settings of that menu are only applicable when the Monitor Source Mode (in the Monitor menu) is set to **MON**.

Both menus are delegated to a specific input by pressing the **CH** key on a fader. The Logical Name and Physical Input are displayed at the top of the screen.

Mix Assign softkeys at-a-glance

Key	Name	Function
F1	CH ON/OFF	Press this key to toggle the on/off state of the selected Mix Bus. **On** is indicated by a checkmark. On/Off selections made in this menu are echoed at the top of the Fader Strip.
		Notes: Selecting **MIX 5** - **MIX 8**, in any combination, lights the **BUSX** display on the corresponding fader.
		If a selection box already conatins both a check-mark and **PFL** icon, described below, preeing *F1* will remove *both* the check-mark and the **PFL** icon.

F2	PFL ON/OFF	Press this key to set the feed to the selected Mix Bus to **PREFADER MODE (PFL)**. **PFL** is indicated by a fader icon in the corresponding Mix Bus selection box. When set in this mode, adjustment of the hardware fader will have no effect on the signal level fed to the corresponding Mix Bus. The level may, however, be trimmed with *F8,* described below*.* Notes: If a selection box does not contain a check-mark prior to selecting **PFL**, a check-mark will automatically be added. If a selection box already contains both a check-mark and **PFL** icon, pressing *F2* will remove *only* the **PFL** icon.
F4	BUS UNITY	Pressing this key restores *all* level trims for the displayed channel to 0.00 dB.

Mix Assign knob adjustments at-a-glance

Knob	Name	Function
F6	SELECT	Rotating this knob navigates the 8 Mix Bus selections. The current selection is differentiated from the others by the size of the border around the selection box.
F8	TRIM	Rotating this knob provides a level trim for the input feeding the selected Mix Bus. This adjustment is active in both standard (post fader) and **PFL** mode.

Monitor Bus Assign

With the **Mix Assign** menu open, pressing either the **BUS** key or the **MORE** key opens the **Mon Assign** menu on the LCD screen.
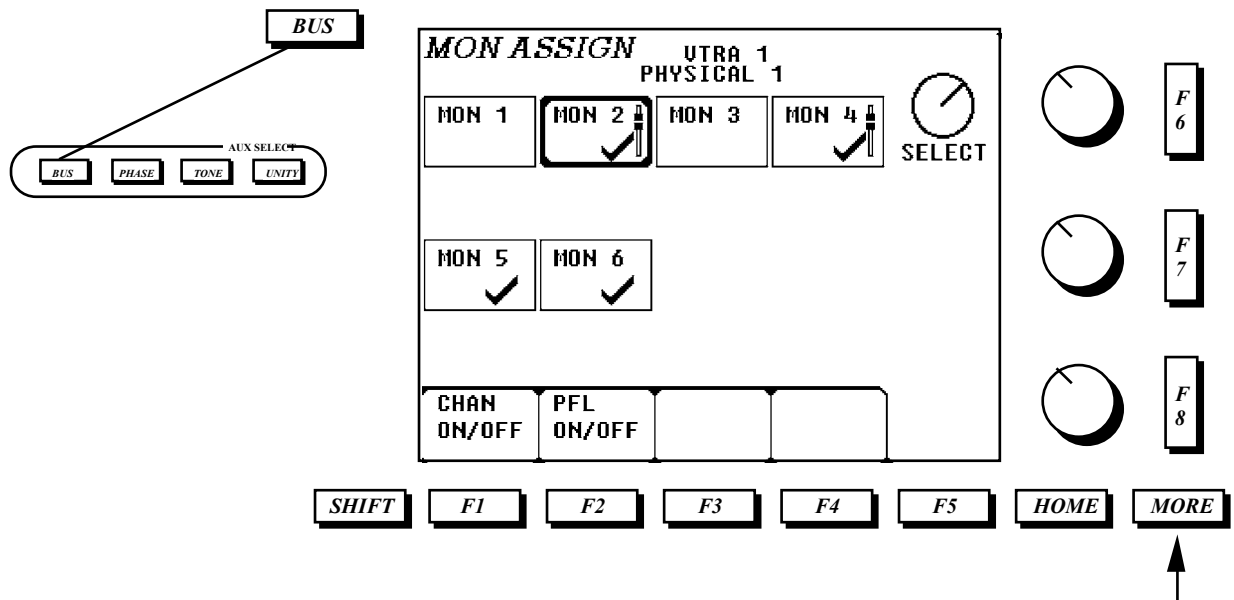
The **Mon Assign** menu is used to define how each source will be heard on the **Monitor Busses**, which may be completely different from how the same source is being used across the Mix Busses.

Monitor Assign softkeys at-a-glance

Key	Name	Function
F1	CH ON/OFF	Press this key to toggle the on/off state of the selected Monitor Bus. **On** is indicated by a checkmark. Note: If a selection box already conatins both a check-mark and **PFL** icon, described below, preeing *F1* will remove *both* the check-mark and the **PFL** icon.
F2	PFL ON/OFF	Press this key to set the feed to the selected Monitor Bus to **PREFADER MODE (PFL)**. **PFL** is indicated by a fader icon in the corresponding Monitor Bus selection box. When set in this mode, adjustment of the hardware fader will have no effect on the signal level fed to the corresponding Monitor Bus. Notes: The **RVTR's** Monitor Busses *must* be set to **PFL** for accurate preview monitoring. If a selection box already contains both a check-mark and **PFL** icon, pressing *F2* will remove *only* the **PFL** icon.

Monitor Assign knob adjustments at-a-glance

Knob	Name	Function
F6	SELECT	Rotating this knob navigates the 6 Monitor Bus selections. The current selection is differentiated from the others by the size of the border around the selection box.

Other Relevent control panel keys

Key	Function
MORE	Toggles between the **Mix Assign** and **Monitor Assign** menus.
BUS	With either the **Mix Assign** or **Monitor Assign** menu curently displayed, pressing **Bus** toggles between the two menus, just like the *MORE* key.

Important note: Monitor bus assignments may be overridden by the settings in the **MONITOR** menu. If the operator opts to run in **PAN4CH, PAN2CH,** or **PANMONO** mode, the **MONITOR ASSIGN** menu may be ignored.

Example #1

The task at hand is to assign the four channels of **VTRA** to **MIX 1** throught **MIX 4**, respectively. This device will feed the Mix Busses *postfader*, and will have no level trims applied. The steps involved are:

4) If not currently displayed, press the **BUS** key to open the **MIX ASSIGN** menu. If the **MON ASSIGN** menu is currently displayed, press either **MORE** or **BUS** to get to the **MIX ASSIGN** menu.
5) Press the **CH** key on the fader assigned to **VTRA 1**. (Steps 1 and 2 may be reversed at the operator's discretion).
6) Rotate *F6* to delegate the menu to **MIX 1**.
7) Press *F1* to place a check-mark in **MIX 1's** selection box.
8) If there are any other selection boxes with either check-marks and/or **PFL** icons, rotate *F6* to delegate the menu to one of them, followed by a single press of *F1* to remove the assignments. Repeat as necessary so that only **MIX 1** is check-marked.
9) Note the trim value for **MIX 1**. If not **0.0dB**, press *F4* to make it so.
10) Repeat steps 2-6 for the other 3 channels of **VTRA**, appropriately substituting **MIX 2, MIX 3,** and **MIX 4** for **MIX 1**.

Once complete, the Faders for VTRA should look like this:

Example #2

The task at hand is to assign the four channels of **VTRC** to the **Monitor Busses** such that channels 1 and 3 feed **MON 1** and channels 2 and 4 feed **MON 2**. Additionally, the monitor feeds will be prefader so that the source may be heard even if the faders are down.

4) If not currently displayed, press the **BUS** key twice to open the **MONITOR ASSIGN** menu. If the **MIX ASSIGN** menu is currently displayed, press either **MORE** or **BUS** to get to the **MONITOR ASSIGN** menu.
5) Press the **CH** key on the fader assigned to **VTRC 1**. (Steps 1 and 2 may be reversed at the operator's discretion).
6) Rotate *F6* to delegate the menu to **MON 1**.
7) Press *F2* to place both a check-mark and a **PFL** icon in **MON 1's** selection box.
8) If there are any other selection boxes with either check-marks and/or **PFL** icons, rotate *F6* to delegate the menu to one of them, followed by a single press of *F1* to remove the assignments. Repeat as necessary so that only **MON 1** is check-marked.
9) Press the **CH** key on the fader assigned to **VTRC 2**.
10) Rotate *F6* to delegate the menu to **MON 2**.
11) Press *F2* to place both a check-mark and a **PFL** icon in **MON 2's** selection box.
12) If there are any other selection boxes with either check-marks and/or **PFL** icons, rotate *F6* to delegate the menu to one of them, followed by a single press of *F1* to remove the assignments. Repeat as necessary so that only **MON 2** is check-marked.
13) Press the **CH** key on the fader assigned to **VTRC 3**.
14) Repeat steps 3-5.
15) Press the **CH** key on the fader assigned to **VTRC 4**.

16) Repeat steps 7-9.

Pressing the **ROUTER** key in the Function Select keypad opens the **ROUTER** menu on the LCD Screen.
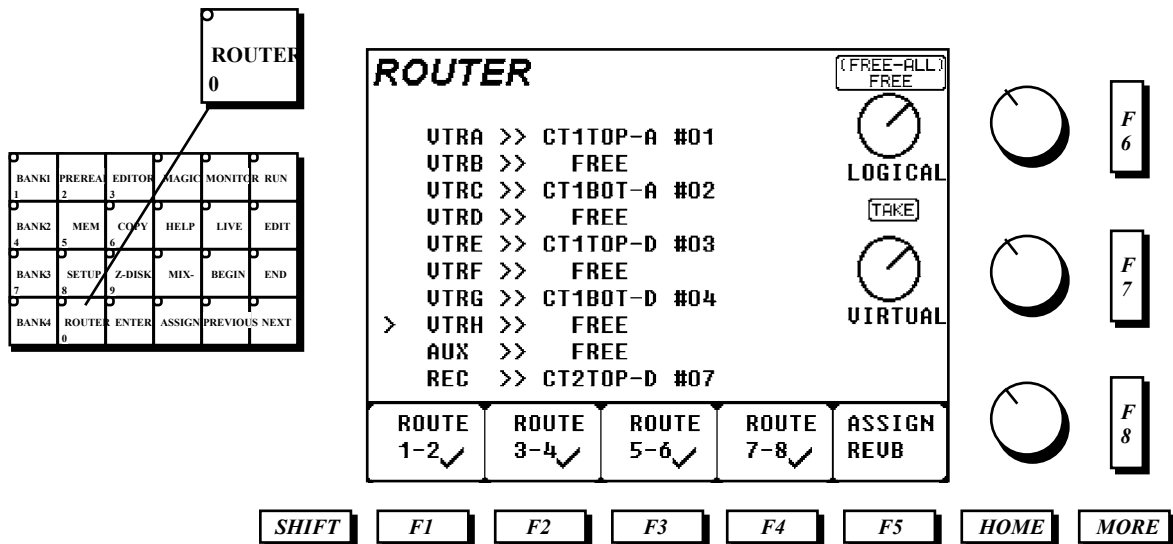
The **Router** menu is used to match **Virtual Sources** with **Logical Devices**. Huh? Read on.

A **Virtual Source** on the Arria is unique designation of one or more (up to eight) inputs. This group of inputs is distinguished by a **Virtual ID #** (1-99) and an alphanumeric label (up to eight characters). It is up to the system owner to encode a router table at the time of installation. Thereafter, the operator simply scrolls through the list of **Virtual Names** or enters the **Virtual ID #** to select a source.

A **Logical Device** on the Arria corresponds to edit system source and recorder keys. The Arria supports VTRA-VTRJ, AUX, and the RVTR.

In a single step, the **Router Interface** executes four separate manual operations:

• Selects appropriate **Physical Inputs** for a given source (with optional router control software, external router busses are automatically assigned to **Physical Inputs**).
• Appropriately sets the mixer's **Physical Inputs** to either **Analog** or **Dgital.**
• **Asiigns** the **Logical Source** to faders.
• Displays an appropriate 8-character **Label** in the LED display above each fader.

The Router menu is utilized regardless of whether an external routing switcher is incorporated into an installation, since it handles both internal and external routing control.

Router Menu softkeys at-a-glance

Key	Name	Function
F1	ROUTE 1/2	Press this key to toggle the on/off state of channels 1 and 2 for the next router **Take**. **On** is indicated by a checkmark.
		When checkmarked, channels 1 and 2 of the selected **Virtual Source** will be included in the next **Take**.
		When not checkmarked, channels 1 and 2 of the selected **Virtual Source** will be ommitted in the next **Take**.
F2	ROUTE 3/4	Press this key to toggle the on/off state of channels 3 and 4 for the next router **Take**. **On** is indicated by a checkmark.
		When checkmarked, channels 3 and 4 of the selected **Virtual Source** will be included in the next **Take**.
		When not checkmarked, channels 3 and 4 of the selected **Virtual Source** will be ommitted in the next **Take**.
		If there are no entries in Arria's **Router Input** table for these channels, the state of *F2* will be ignored.
F3	ROUTE 5/6	Press this key to toggle the on/off state of channels 5 and 6 for the next router **Take**. **On** is indicated by a checkmark.
		When checkmarked, channels 5 and 6 of the selected **Virtual Source** will be included in the next **Take**.
		When not checkmarked, channels 5 and 6 of the selected **Virtual Source** will be ommitted in the next **Take**.
		If there are no entries in Arria's **Router Input** table for these channels, the state of *F3* will be ignored.
F4	ROUTE 7/8	Press this key to toggle the on/off state of channels 7 and 8 for the next router **Take**. **On** is indicated by a checkmark.
		When checkmarked, channels 7 and 8 of the selected **Virtual Source** will be included in the next **Take**.
		When not checkmarked, channels 7 and 8 of the selected **Virtual Source** will be ommitted in the next **Take**.
		If there are no entries in Arria's **Router Input** table for these channels, the state of *F4* will be ignored.
F5	ASSIGN REVERB	Press this key to toggle the on/off state the "AutoRoute" feature of Arria's optional Reverb processor. **On** is indicated by a checkmark.
		When checkmarked, the two channels of the **Reverb Processor** will be automatically assigned to faders the next time **Take** is pressed.
		The AutoRoute feature always assigns the Reverb between the last logical source machine and the RVTR. The **Assign** menu may be used to customize the location, if desired.
F6	FREE	Press this key to **FREE** the currently-selected Logical/Virtual relationship.
(F6)	FREE ALL	Pressing this key *along with the SHIFT key* will **FREE ALL** of the Logical/Virtual realtionships…a good way to start from scratch at the beginning of a session.
F7	TAKE	Press this key to confirm a Logical/Virtual relationship.
		If Take is not pressed after altering a Logical/Physical relationship, the previous relationship will remain.

Router Menu knob adjustments at-a-glance

Knob	Name	Function
F6	LOGICAL SELECTION	Rotating this knob changes the current **Logical Device** delegation. Clockwise rotation moves the cursor (at the far left of the LCD Display) lower. Counter-clockwise rotation moves the cursor higher.
F7	VIRTUAL SELECTION	Rotating this knob scrolls through the contents of the **Router Input** menu.

Quick Route

In operations that utilize close-to or all of the 99 Virtual Sources, Logical/Virtual selection may be faster if the user selects a Virtual source using the numeric keypad, rather than by rotating *F7*. The steps involved are:

1) Select a **Logical Device** using softknob *F6*.
2) Press the **ENTER** key on the Function Select keypad. The left half of the keypad will illuminate.
3) Using the keypad, enter the **Logical Device ID** (1-99) of the source you wish to use. Note that your selection is echoed at the top of the LCD Display.
4) Press *F7* (Take).

1) If you make an error while entering the Logical Device ID, press the **ENTER** key twice to start over.

Router Input Menu

When the **Router Menu** is open, pressing the **More** key opens the **Router Inputs** menu on the LCD screen.
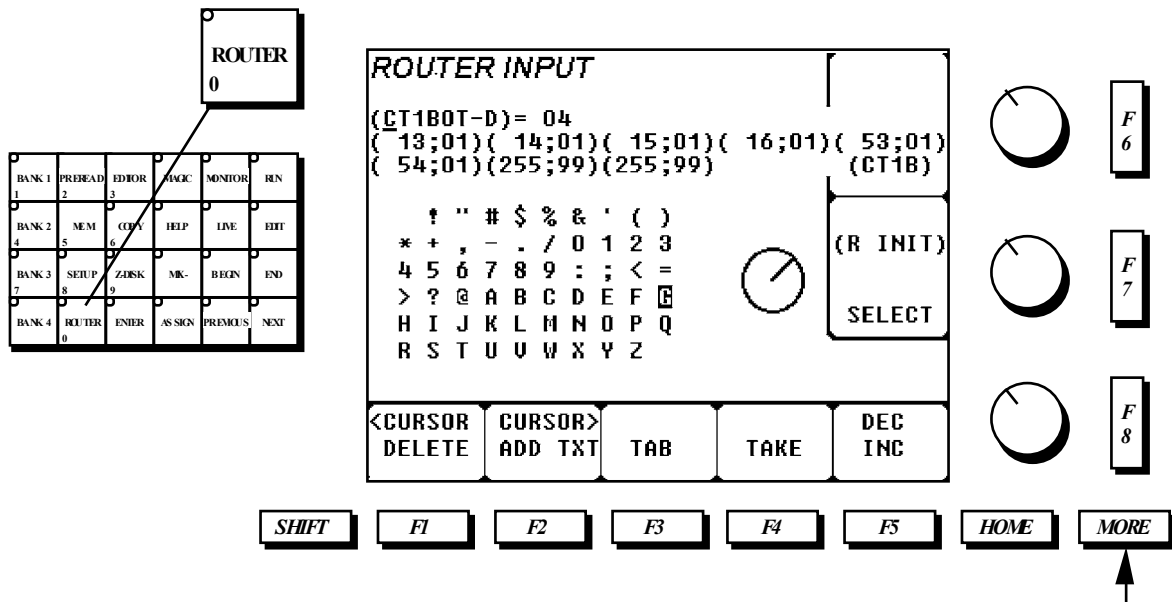
This menu is used to define where and how each **Physical Device** (tape machine, CD player, etc.) is feeding the input section of the mixer.

Entries in the **Router Input** define:

- The origin of each audio source (direct-wired analog, direct-wired digital, or router).
- A **User Name** that identifies each audio source.
- A 4-character **Label** for display above the faders.

Router Input Menu softkeys at-a-glance

Key	Name	Function
F1	CURSOR LEFT/ DELETE	Press this key to move the Input Name **Cursor** to the **Left** *and* **Delete** characters as you go. Press **SHIFT** and *F1* to move the cursor left *without* deleting any characters.
F2	CURSOR RIGHT/ ADD TEXT	Press this key to move the Input Name **Cursor** to the **Right** *and* **Add** the currently-selected character as you go. Press **SHIFT** and *F2* to move the cursor right *without* adding any characters.
F3	TAB	Repetitively press this key to move the cursor from field-to-field.
F4	TAKE	Press this key to accept *all changes* made to selected **Source ID**. Failure to press this key prior to changing menus or Source ID will result in a loss of edited data.
F5	INCREMENT ID	Press this key to **Increment** the current **Source ID** number, 1 step per button press.
(F5)	DECREMENT ID	Press **SHIFT** and *F5* to **Decrement** the current **Source ID** number, 1 step per button press.
(F7)	ROUTE 3/4	Press **SHIFT** and *F7* to **completely erase the Router Input memory**. *There is no Undo for this action.*

Router Input menu knob adjustments at-a-glance

Knob	Name	Function
F7	CHARACTER SELECTOR	Rotate this softknob to move the on-screen character selection cursor. The currently-selected character is displayed as an inverse video.

5)   Numbers may be entered via the keypad, without the need to select *F2*. Notice that the numeric keys illuminate when in this menu

Below is an isolated view of the data-entry portion of the screen.

A   B

```
(VTR 5    ) = 05
( 010 ; 02 )    ( 010 ; 03 )    ( 255 ; 99 )    ( 255 ; 99 )    ( AUTO )
```

C   D   E   F   G
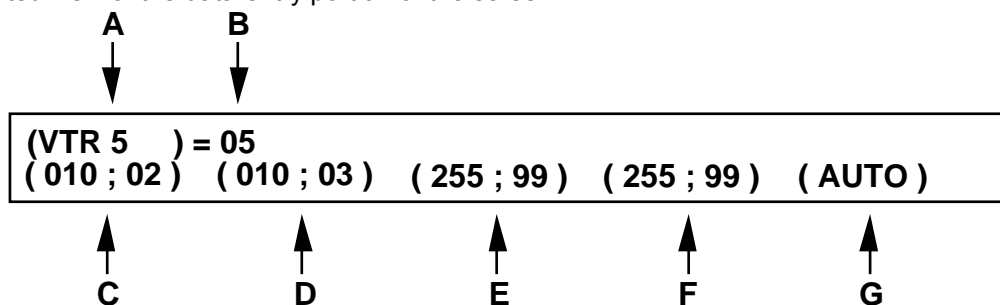
Router Input Data at-a-glance

Field	Description	Function
A	User Name	This eight-character field defines a **User Name** for the selected **Source ID**. Characters are entered via the on-screen "label maker". The name entered in this field will be displayed in the operator (top level) of the **Router Menu**.
B	Source ID	This numeric field is the **Identification** number that the mixer assigns to each **Physical Device**. Up to 100 devices (numbered 1-100) may be programmed. While the user may freely designate any source to any ID, where applicable an **ID** number should match a numerically-based **Source Name**. For example: In diagram above **VTR 5 = ID #5**.
C-J	Channel Assignments	These fields define the relationship between a source's audio outputs and the mixer's **Physical Inputs**, where *C* = Channel 1, *D* = Channel 2, *E* = Channel 3, *F* = Channel 4, *G* = Channel 5, *H* = Channel 6, *I* = Channel 7, *J* = Channel 8. A source may feed the mixer in one of three manners: 10) via a "hard-wired" **Analog Input** (mixer inputs 1-8 only) 11) via a "hard-wired" **Digital Input** (mixer inputs 1-22) 12) via an external **Router** that feeds either of the above input types. Each **Channel Assignment Field** is divided into two parts, denoted here as **X** and **Y (XXX;YY)**, where: **X** = External router *or* mixer input number (must be expressed in three digits). For example, a source that is hard-wired to **Physical Input 1** (analog or digital) is entered as <**001**>. Similarly, a source that may exist on a router at **Router Input 1** is also entered as <**001**>. **Y** = The *type* of input, where a value of: 　**41** = A hard-wired analog input 　**44** = A hard-wired digital input 　**01 - 40** = The level number of an external routing switcher

		99 = An unassigned input (used in conjunction with an **X** value of 255)
K	Fader Label	This field sets the type of **Label** that will be displayed when a **Virtual Device** is routed as a **Logical Source**. Four types of entries are possible in this field, all of which are entered via the on-screen "label maker": **AUTO** - Entering the word "AUTO" (case sensitive) into this field instructs the mixer to **Auto-Label** the faders for this particular source. This feature assigns a **Logical Name** and **Logical Channel Number** to each fader. Using the diagram from the preceding page as an example, if VTR 5 is used as a source VTR, its fader displays will be **VTx1** and **VTx2**, where "x" is the letter corresponding to the chosen **Logical Source (**A-J). If VTR 5 is utilized as the RVTR, its fader displays will be **REC1** and **REC2**. *AUTO is the default mode of operation* **Custom Label** - If desired, a source may have a custom 4-character **Label**. For example, if VTR 5 always plays-back "effects" tracks, it may be desirable to have the fader display the label "EFX." Entering this label will instruct the mixer to display those characters on *both* of VTR 5's faders. **Custom Label with Channel ID** - In the preceding example, *both* of VTR 5's faders are labeled identically. If this is not desirable (perhaps these are stereo effects tracks), one of two "wildcards" may be added to this field to distinguish one channel from another: **?** - instructs the mixer to add the **Logical Channel Number** to the end of the **Custom Label**. Using the above example, entering "**FX-?**" instructs the mixer to label VTR 5's faders as **FX-1** and **FX-2**. **/** - instructs the mixer to add the **Logical Channel Orientation** (left or right) to the end of the **Custom Label**. Using the above example, entering "**FX-/**" instructs the mixer to label VTR 5's faders as **FX-L** and **FX-R**.

NOTE: An analog input may be designated as either MIC or Line.However, the Router Interface does not differentiate between the two. It is up to the user to switch between Mic and Line in the Setup menu

NOTE: The optional ZAXCOM 32 x 10 AES router is designated as Level 01.

DEFINING A "HARD-WIRED" ANALOG INPUT

In this example, a two-channel analog CD Player will be defined as **Source ID #10**, directly feeding **Analog Inputs 3 and 4**. When this source is **Assigned** to faders, the LED Fader Displays will display "**CD-L**" for Channel 1 and "**CD-R**" for Channel 2.

```
       A              B
       |              |
       ↓              ↓
┌─────────────────────────────────────────────────────────────┐
│  (CD          ) = 10                                         │
│  ( 003 ; 41)    ( 004 ; 41 )   ( 255 ; 99 )   ( 255 ; 99 )     ( CD-/ )  │
└─────────────────────────────────────────────────────────────┘
       ↑              ↑              ↑              ↑              ↑
       |              |              |              |              |
       C              D              E              F              G
```
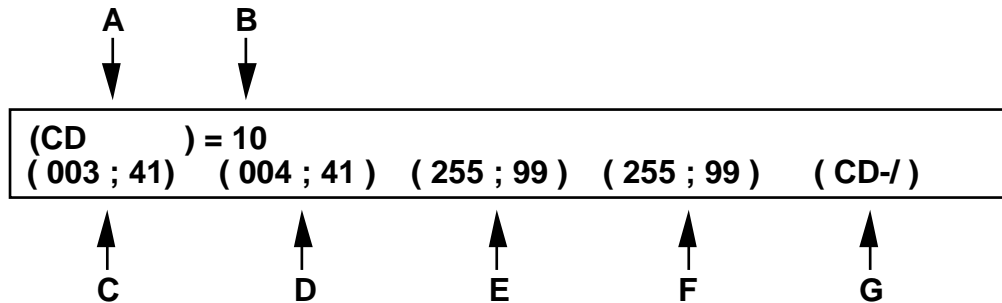
Notes:

A - The **Source Name** (CD) is entered via the on-screen "label maker."

D - The entries (004;41) in this field define **Analog Input 4** of the mixer as the location of the CD player's Channel 2.

E - Since the CD Player is a 2-channel device, the entries (255;99) in this field define Channel 3 as being unassigned. The same is true for fields **F - J**.

K - By entering <**C**><**D**><**-**> followed by the wildcard < **/** >, the mixer will automatically insert the appropriate directional channel designation in each LED Fader Display.

DEFINING A "HARD-WIRED" DIGITAL INPUT

In this example, a 4-channel digital VTR (called VTR-40) will be defined as directly feeding **Digital Inputs 5 thru 8**. This source will also be set for **Auto-Labelling**.

```
    A           B

(VTR 40    ) = 40
( 005 ; 44)   ( 006 ; 44 )   ( 007 ; 44 )   ( 008 ; 44 )   ( AUTO )

     C            D              E              F              G
```
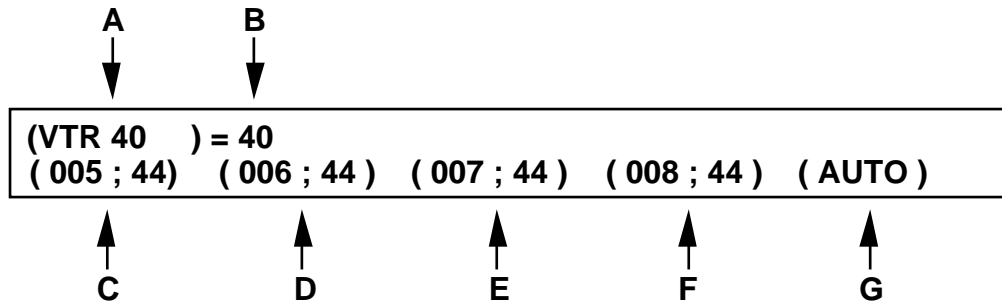
Notes:

A - The **Source Name** (VTR-40) is entered via the on-screen "label maker."

B - The **Source ID** (40) has been chosen to correspond with the **Source Name.** This field is selected prior to entering the **Source Name** by using the **INC** and **DEC** softkeys.

Matching a numerically-based Source Name with a corresponding Source Id is strongly recommended. Doing so will simplify the overall operation of the router interface.

C - The entries (005;44) in this field define **Digital Input 5** of the mixer as the location of VTR-40's Channel 1.

D - The entries (006;44) in this field define **Digital Input 6** of the mixer as the location of VTR-40's Channel 2.

E - The entries (007;44) in this field define **Digital Input 7** of the mixer as the location of VTR-40's Channel 3.

F - The entries (008;44) in this field define **Digital Input 8** of the mixer as the location of VTR-40's Channel 4.

G - Since VTR-40 is a 4-channel device, the entries in this field (255;99) define Channels 5 as being unassigned. The same is true for fields **H - J**.

K - AUTO-LABELING is defined by entering the word "**AUTO**" into this setup field.

The TAKE key must be pressed when each source's setup form is complete.

DEFINING ANALOG ROUTER INPUTS

In this example, a two-channel analog VTR (called VTR-16) will be defined as a source available to the mixer via input 15 of external router Levels 2 and 3. In this instance, the **Label** is to contain the VTR number (16) along with a directional descriptor (**L**eft or **R**ight).

```
        A           B
        |           |
        v           v

  ┌─────────────────────────────────────────────────────────────┐
  │  (VTR 16    ) = 16                                            │
  │  ( 015 ; 02)    ( 015 ; 03 )   ( 255 ; 99 )   ( 255 ; 99 )    ( 16-/ )  │
  └─────────────────────────────────────────────────────────────┘
        ^           ^             ^             ^               ^
        |           |             |             |               |
        C           D             E             F               G
```
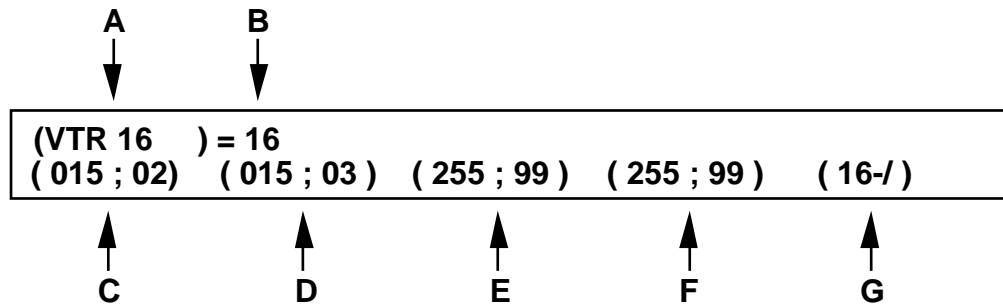
Notes:

As shown above, the mixer is capable of communicating with a multi-level router.

A - The **Source Name** (VTR-16) is entered via the on-screen "label maker."

B - The **Source Id** (16) has been chosen to correspond with the **Source Name.** This field is selected prior to entering the **Source Name** by using the **INC** and **DEC** softkeys.

Matching a numerically-based Source Name with a corresponding Source Id is strongly recommended. Doing so will simplify the overall operation of the router interface.

C - The entries (015;02) in this field define **Input 15** on **Level 2** of the external router as the location of VTR 16's Channel 1.

D - The entries (015;03) in this field define **Input 15** on **Level 3** of the external router as the location of VTR 16's Channel 2.

E - The entries (255;99) in this field define Channel 3 as being unassigned. The same is true for fields **F - J**.

K - By entering "**16-**"followed by the wildcard "**/**", the mixer will automatically insert the appropriate directional channel designation in each LED Fader Display (**16-L** and **16-R**).

The TAKE key must be pressed when each source's setup form is complete.

DEFINING DIGITAL ROUTER INPUTS

In this example, a four-channel digital VTR (called VTR-37) will be defined as available to the mixer via inputs 20 and 21 of router Level 5. Since VTR-37 is used to consistently playback natural sound, it is has been deemed desirable to **Label** its faders "NAT1", "NAT2", "NAT3", and "NAT4".

A   **B**

(VTR 37   ) = 37
(040 ; 05)   (041 ; 05)   (042 ; 05)   (043 ; 05)   (NAT?)

C   **D**   **E**   **F**   **G**

Notes:

Most Digital router sources must be given special consideration. This is because:

- The mixer has a monophonic internal architecture.
- AES audio incorporates a pair of audio channels on a single cable.
- Most AES audio routers use a single crosspoint value to define both channels of a stereo pair.

HENCE:

The mixer's operating system stipulates that each *actual* router input number be designated as two unique crosspoint numbers according to the table below or on the following page:

FOR ROUTERS THAT BEGIN AT "INPUT 0"

Router Input	Mixer Inputs	Router Input	Mixer Inputs	Router Input	Mixer Inputs
0	1/2	16	32/33	32	64/65
1	2/3	17	34/35	33	66/67
2	4/5	18	36/37	34	68/69
3	6/7	19	38/39	35	70/71
4	8/9	20	40/41	36	72/73
5	10/11	21	42/43	37	74/75
6	12/13	22	44/45	38	76/77
7	14/15	23	46/47	39	78/79
8	16/17	24	48/49	40	80/81
9	18/19	25	50/51	41	82/83
10	20/21	26	52/53	42	84/85
11	22/23	27	54/55	43	86/87
12	24/25	28	56/57	44	88/89
13	26/27	29	58/59	45	90/91
14	28/29	30	60/61	46	92/93

15	30/31	31	62/63	47	94/95

FOR ROUTERS THAT BEGIN AT "INPUT 1"

Router Input	Mixer Inputs	Router Input	Mixer Inputs	Router Input	Mixer Inputs
1	1/2	17	33/34	33	65/66
2	3/4	18	35/36	34	67/68
3	5/6	19	37/38	35	69/70
4	7/8	20	39/40	36	71/72
5	9/10	21	41/42	37	73/74
6	11/12	22	43/44	38	75/76
7	13/14	23	45/46	39	77/78
8	15/16	24	47/48	40	79/80
9	17/18	25	49/50	41	81/82
10	19/20	26	51/52	42	83/84
11	21/22	27	53/54	43	85/86
12	23/24	28	55/56	44	87/88
13	25/26	29	57/58	45	89/90
14	27/28	30	59/60	46	91/92
15	29/30	31	61/62	47	93/94
16	31/32	32	63/64	48	95/96

Notes:

1) The Zaxcom AES router starts at **INPUT 1**.
2) The Zaxcom AES router defines inputs in a monophonic manner…exactly like the mixer.
3) The Zaxcom AES router must be designated as **LEVEL 1**.

A   **B**

```
(VTR 37    ) = 37
( 040 ; 05)   ( 041 ; 05 )   ( 042 ; 05 )   ( 043 ; 05 )   ( NAT? )
```

C   **D**   **E**   **F**   **G**
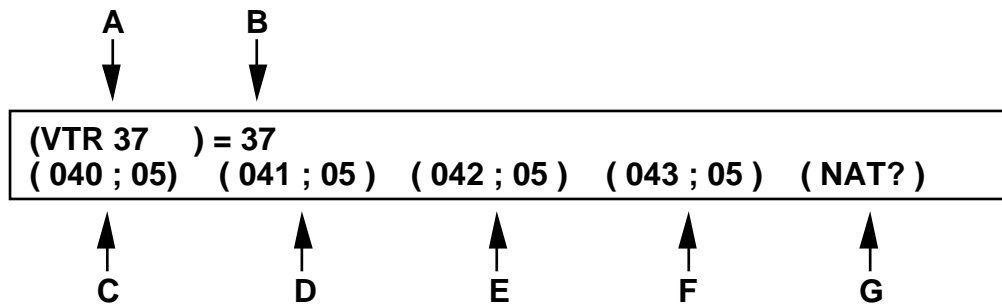
Notes:

A - The **SOURCE NAME** (VTR-37) is entered via the on-screen "label maker."

B - The **SOURCE ID** (37) has been chosen to correspond with the **Source Name**. This field is selected prior to entering the **Source Name** by using the **INC** and **DEC** softkeys.

Matching a numerically-based Source Name with a corresponding Source Id is strongly recommended. Doing so will simplify the overall operation of the router interface.

C - The entries (040;05) in this field define **Input 20** of **Level 5** of the external router as the location of VTR-37's Channel 1.

D - The entries (041;05) in this field define **Input 20** of **Level 5** of the external router as the location of VTR-37's Channel 2.

E - The entries (042;05) in this field define **Input 21** of **Level 5** of the external router as the location of VTR-37's Channel 3.

F - The entries (043;05) in this field define **Input 21** of **Level 5** of the external router as the location of VTR-37's Channel 4.

G - Since VTR-40 is a 4-channel device, the entries in this field (255;99) define Channels 5 as being unassigned. The same is true for fields **H - J**.

K - By entering "**NAT**" followed by the wildcard "**?**", the mixer will automatically insert the appropriate numeric channel designation in each LED Fader Display

The TAKE key must be pressed when each source's setup form is complete.

Pressing the **MORE** key from the second level of the Router menu opens the **Router Out** menu.
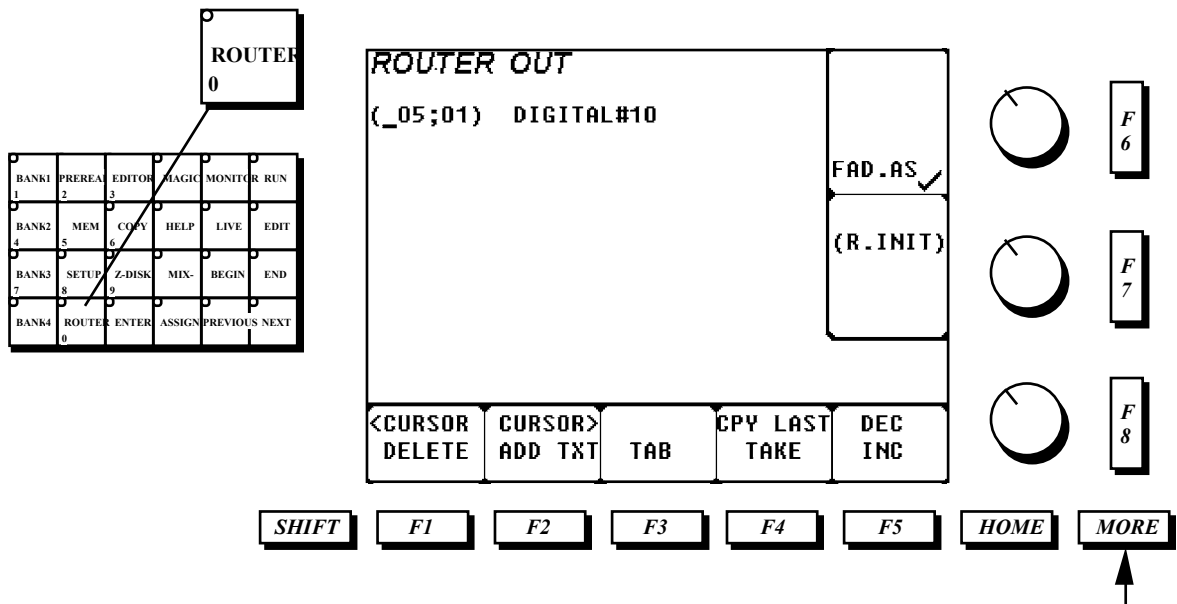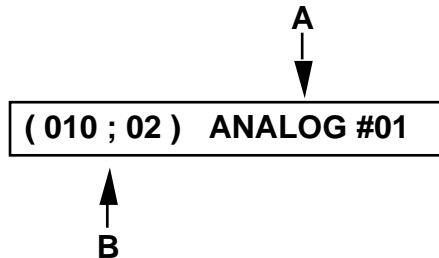

The **Router Out** menu is used to identify:

- Which inputs on the mixer are fed from an external router.
- Which outputs of an external router feed the mixer inputs.

Router Ouput Menu softkeys at-a-glance

Key	Name	Function
F1	CURSOR LEFT/ DELETE	Press this key to move the Input Name **Cursor** to the **Left** *and* **Delete** characters as you go. Press **SHIFT** and *F1* to move the cursor left *without* deleting any characters.
F2	CURSOR RIGHT/ ADD TEXT	Press this key to move the Input Name **Cursor** to the **Right** *and* **Add** the currently-selected character as you go. Press **SHIFT** and *F2* to move the cursor right *without* adding any characters.
F3	TAB	Repetitively press this key to move the cursor from field-to-field.
F4	TAKE	Press this key to accept *all changes* made to selected **Source ID**. Failure to press this key prior to changing menus or Source ID will result in a loss of edited data.
F5	INCREMENT ID	Press this key to **Increment** the current **Source ID** number, 1 step per button press.
(F5)	DECREMENT ID	Press **SHIFT** and *F5* to **Decrement** the current **Source ID** number, 1 step per button press.
F6	FADER ASSIGN	Press this key to enable or disable the automatic **Fader Assign** feature. When enabled, **Logical Sources** are automatically **Assigned** to faders following a **TAKE** operation. When disabled, the Router Interface will only perform router control...fader assignments must then be made via the **Assign** menu.
(F7)	RTR INIT	Press **SHIFT** and *F7* to **completely erase the Router Output memory**. *There is no Undo for this action.*

NOTE: Numbers may be entered via the keypad, without the need to select F2. Notice that the numeric keys illuminate when in this menu.

Below is an isolated view of the data entry area of the display:

A

(010 ; 02)   ANALOG #01

B

Router Output Data at-a-glance

| Field	Description	Function
A	Physical Input	The current mixer **PHYSICAL INPUT** is displayed to the right of the data entry fields.. Pressing *(SHIFT F5)* or *(F6)* will decrement or increment through the list of inputs (Analog Inputs 1-8, and Digital Inputs 1-22).
B	Router Output Assignment	This two-part field defines: ▪ Which mixer **Physical Inputs** are fed by a router. ▪ Which outputs of a router feed the mixer **Physical Inputs**. Each **Output Assignment Field** is divided into two parts, denoted here as **X** and **Y** **(XXX;YY)**, where: **X** = External router output number (must be expressed in three digits) **Y** = External router level number (must be expressed in two digits)

For example, in the form depicted below, **Analog Input #01** is programmed to be fed from **Output Bus 10,** on **Level 2** of a router:

(010 ; 02)   ANALOG #01

Physical Inputs that are fed directly from a single source (not via a router) *must* have the **Router Output Assignment** field set for **(255;99),** which defines those inputs as "inactive" with regards to external router operation.

DEFINING DIGITAL ROUTER OUTPUTS

In this example, **Digital Router Output 8** will feed mixer **Digital Inputs #01 and #02.** The two diagrams below depict how the individual setup forms should appear.

A

(008 ; 05)   DIGITAL #01

(008 ; 05)   DIGITAL #02

B
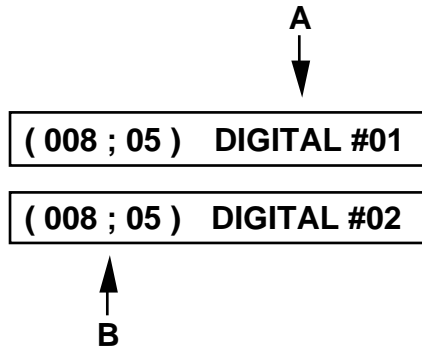
Notes:

A - The mixer **Input Number** is set by repetitively pressing *(F5)* or *(F6)* .

B - The **TAB** key *(F3)* is utilized to move between entries in the **Output Assignment Field**. Note the identical entries for the **Router Output** and **Level Number**.

Most Digital router sources must be given special consideration. This is because:

11) The mixer has a monophonic internal architecture.

12) AES audio incorporates a pair of audio channels on a single cable.

13) Most AES audio routers use a single crosspoint value to define both channels of a stereo pair.

 HENCE:

The mixer operating system stipulates that the **same** **Router Output Number** be utilized for the individual mixer inputs that make up a stereo pair.

The TAKE key must be pressed when each source's setup form is complete.

In the **Router Inputs** menu, active inputs must be programmed consecutively. *Do not skip fields.* For example: the following is a legal entry for a 2-channel VTR, called VTR 8:

```
(VTR 8    ) = 08
( 010 ; 02 )   ( 010 ; 03 )    ( 255 ; 99 )   ( 255 ; 99 )   ( AUTO )
```

Note that the first two **Channel Assignment Fields** have explicit data entered in them, while the second two fields are not assigned ((255;99) denotes inactive assignments).

However, the following is an illegal entry for the same VTR, and hence will cause undesirable results:

```
(VTR 8    ) = 08
( 010 ; 02 )   ( 255 ; 99 )    ( 010 ; 03 )   ( 255 ; 99 )   ( AUTO )
```

Note that the second **Channel Assignment Field** is not assigned, but the third field has an "active" entry.

> ### THE VTR COULD NOT BE ROUTED BECAUSE
> ### ALL OF THE ROUTER OUTPUTS ARE IN USE

This above message appears when all of the router outputs are in use. The user must decide which source(s) to **FREE** in order to make room for the new source.

> ### THERE IS A ROUTER CONFLICT. FREE LOGICAL
> ### MACHINE XXXX TO RESOLVE THE CONFLICT.

The mixer's **Router Interface** employs a unique **Conflict Resolution** feature that can detect an input channel conflict between an existing source and a newly-routed one. This feature will automatically attempt to reroute the existing source to resolve the conflict. The above message appears when the mixer is unable to resolve the conflict on its own.

For example:

IF: The EVTR is currently routed to **Digital Inputs 1-4**.

AND: A CD player is hard-wired to **Analog Input 1 & 2.**

•

WHEN: You attempt to assign the CD player as a logical source machine, the following message could appear if the mixer is unable to resolve the conflict on its own:

> ### THERE IS A ROUTER CONFLICT. FREE LOGICAL
> ### MACHINE <u>EVTR</u> TO RESOLVE THE CONFLICT.

> ### THE PHYSICAL MACHINE IS ALREADY IN USE
> ### AS <u>VTRA</u>. FREE IT TO RESOLVE CONFLICT.

The above message appears if the operator attempts to route a *hard-wired* source to more than one **Logical Machine**. Hard-wired sources may only be assigned as a single **Logical Machine**, whereas sources fed from an external router may be assigned to numerous positions (up to the maximum available router outputs).

Pressing the **MONITOR** key opens the **MONITOR SOURCE** menu on the LCD DISPLAY.
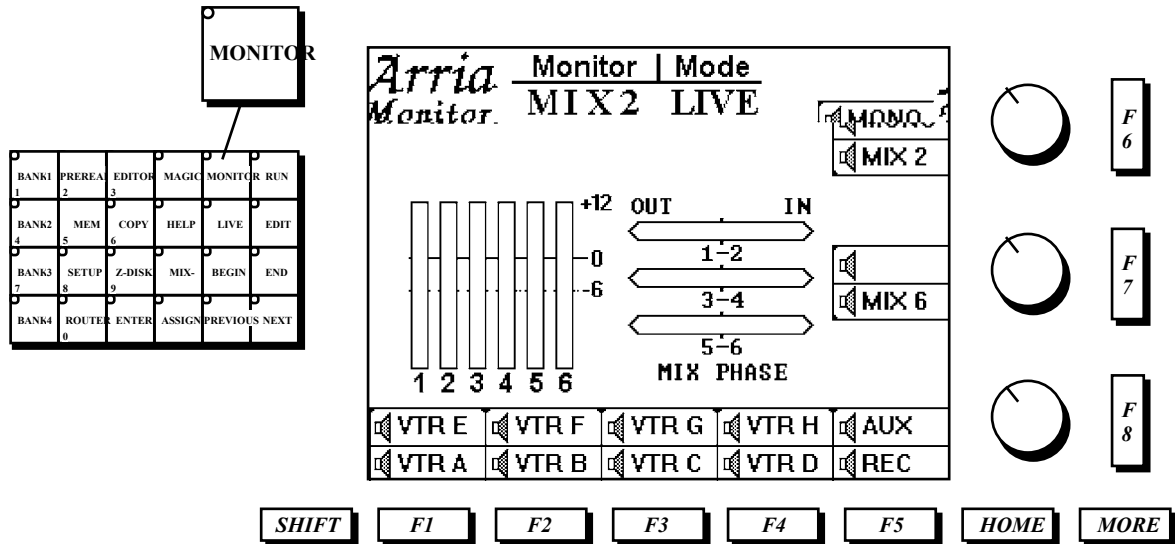
The **MONITOR SOURCE** menu provides punch-up (solo) monitoring of select **LOGICAL** sources. The selections made in this menu are *temporary*, in that selection of a source by an edit system may override the current selection. Additionally, since source levels in this section are all *post-fader,* a particular source's

FADER(S) must be at some level greater than ∞ (or have **PFL** enabled) for program material to be heard.

NOTE: Punch-up monitoring via the Arria control panel yields the exact same results as selecting the same sources from an edit system. The monitor routing configuration for these sources is determined by the settings in the MODE menu, described below.
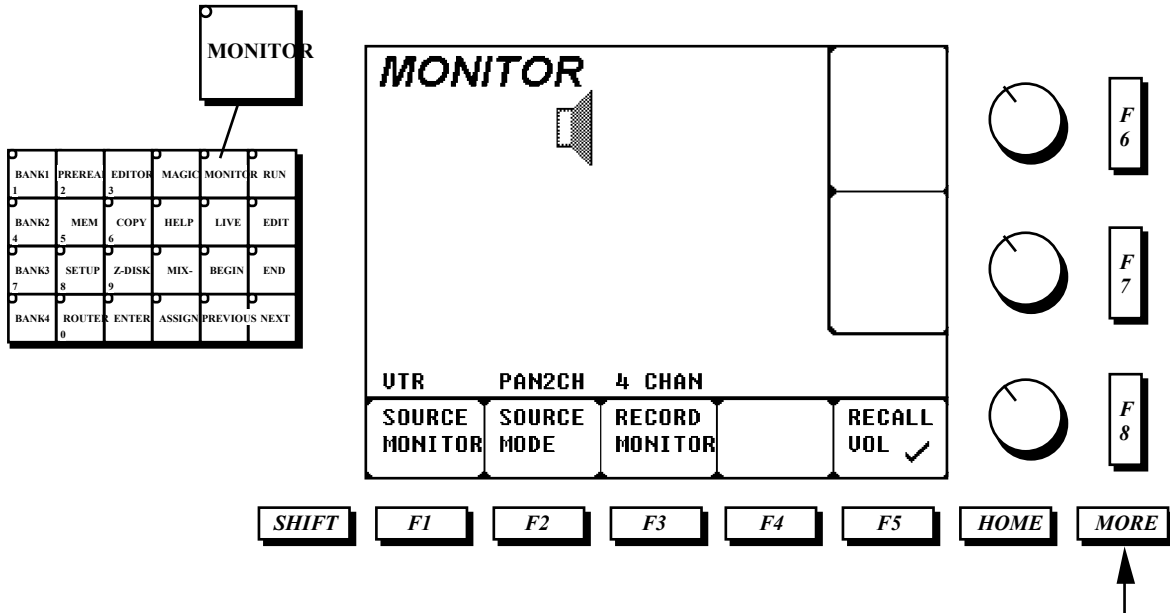
Monitor Source softkeys at-a-glance

Key	Name	Function
F1	VTR A	Selects all assigned channels of **VTRA** as the monitor source.
F2	VTR B	Selects all assigned channels of **VTRB** as the monitor source.
F3	VTR C	Selects all assigned channels of **VTRC** as the monitor source.
F4	VTR D	Selects all assigned channels of **VTRD** as the monitor source.
F5	REC	Selects all assigned channels of **REC** as the monitor source.
(F1)	VTR E	Selects all assigned channels of **VTRE** as the monitor source.
(F2)	VTR F	Selects all assigned channels of **VTRF** as the monitor source.
(F3)	VTR G	Selects all assigned channels of **VTRG** as the monitor source.
(F4)	VTR H	Selects all assigned channels of **VTRH** as the monitor source.
(F5)	AUX	Selects all assigned channels of **AUX** as the monitor source.

Key	Name	Function
F6	MIX 2	Selects the **MIX BUS** as the monitor source in a **2-speaker** configuration. Mix Bus 1, 3, and 7 are fed to Monitor Bus 1, while Mix Bus 2, 4, and 8 are fed to Monitor Bus 2.
(F6)	MONO	Selects the **MIX BUS** as the monitor source in Mono configuration. All Mix Busses are summed together to feed all Monitor Busses
F7	MIX 6	Selects the **MIX BUS** as the monitor source in a **6-speaker** configuration. Mix Bus

		1-6 discretely feed Monitor Busses 1-6.

When the **Monitor Source** menu is open, pressing the **MORE** key opens the **Monitor Mode**. This menu is primarily used to customize the mixer's response to monitoring commands issued from an edit system.

The **MODE** menu provides selection of global monitoring modes for all **SOURCES**, including the **RECORD VTR**.

Monitor Mode softkeys at-a-glance

Key	Name	Function
F1	SOURCE MONITOR	Repetitively pressing *F1* cycles through the list of **Source Monitor Types**. When the Arria receives a command to select a particular Logical source (VTRA, VTRB, etc.) on the Monitor Bus, this menu item determines whether to solo the Logical Device or select the Mix Bus. **VTR**: The actual Logical Device will be selected on the Monitor Bus. **MIX2**: Selects the **MIX BUS** as the monitor source in a **2-speaker** configuration. Mix Bus 1, 3, and 7 are fed to Monitor Bus 1, while Mix Bus 2, 4, and 8 are fed to Monitor Bus 2. **MIX6**: Selects the **MIX BUS** as the monitor source in a **6-speaker** configuration. Mix Bus 1, 3, and 7 are fed to Monitor Bus 1, while Mix Bus 2, 4, and 8 are fed to Monitor Bus 2. *Only used in 4+ speaker installations*.

|		
F2	SOURCE MODE	Repetitively pressing *F2* cycles through the list of **Source Monitor Modes**. When the **Source Monitor Type** is set to **VTR**, this menu item determines what the channel configuration should be. **MON**: The monitoring configuration as set in the **Mon Assign** menu is used. **PAN4CH**: The monitoring configuration follows the assignments made in the **Mix Assign** menu. In other words: You hear exactly what is being sent out of the Mix Busses. *Only used in 4+ speaker installations*. **PAN2CH**: The monitoring configuration follows the assignments made in the **Mix Assign** menu. such that Mix Buses 1, 3, and 7 will feed **Monitor Bus 1**, and Mix Buses 2, 4, and 8 will feed **Monitor Bus 2** *Only used in 2-speaker installations.* **PANMONO**: A **Mono** monitoring configuration is derived from the assignments made in the **Mix Assign** menu. 4) *This menu item only pertains when **Source Monitor Type = VTR**.*
F3	RECORD MONITOR	Repetitively pressing *F3* cycles through the list of **Record Monitor Modes**. When the Arria receives a command to select the RVTR on the Monitor Bus, this menu item determines what the monitoring configuration should be. **2 CHAN**: The RVTR is selected on the Monitor Bus such that Channels 1, 3, and 7 feed **Monitor Bus 1**, and Channels 2, 4, and 8 feed **Monitor Bus 2B.** *Only used in 2-speaker installations.* **4 CHAN**: The RVTR is selected on the Monitor Bus such that Channels 1, 3, and 7 feed **Monitor Bus 1**, and Channels 2, 4, and 8 feed **Monitor Bus 2B.** *Only used in 4+ speaker installations.* **MONO**: The RVTR is selected on the Monitor Bus such that all of its channels are summed to all **Monitor Busses**.
F5	RECALL VOLUME	Press this key to toggle the on/off state of channels 1 and 2 for the next router **Take**. **On** is indicated by a checkmark. When checkmarked, channels 1 and 2 of the selected **Virtual Source** will be included in the next **Take**. When not checkmarked, channels 1 and 2 of the selected **Virtual Source** will be ommitted in the next **Take**.

IMPORTANT:

THIS MENU SETS A GLOBAL MONITORING CONFIGURATION FOR ALL VTR SOURCES, BUT ONLY HAS AN AFFECT WHEN A LOGICAL VTR IS SELECTED ON THE MONITOR BUS, EITHER VIA THE SRC MENU OR EDITOR INTERFACE.

THIS MENU HAS NO EFFECT ON DIRECT MIX BUS MONITORING

In general, PAN4CH AND PAN2CH provide the most simple and consistent operation, and are the recommended modes for operators new to Arria.

Pressing the **EDIT** key twice on the **Function Select** keypad opens the **Timeline Menu** on the LCD Screen.
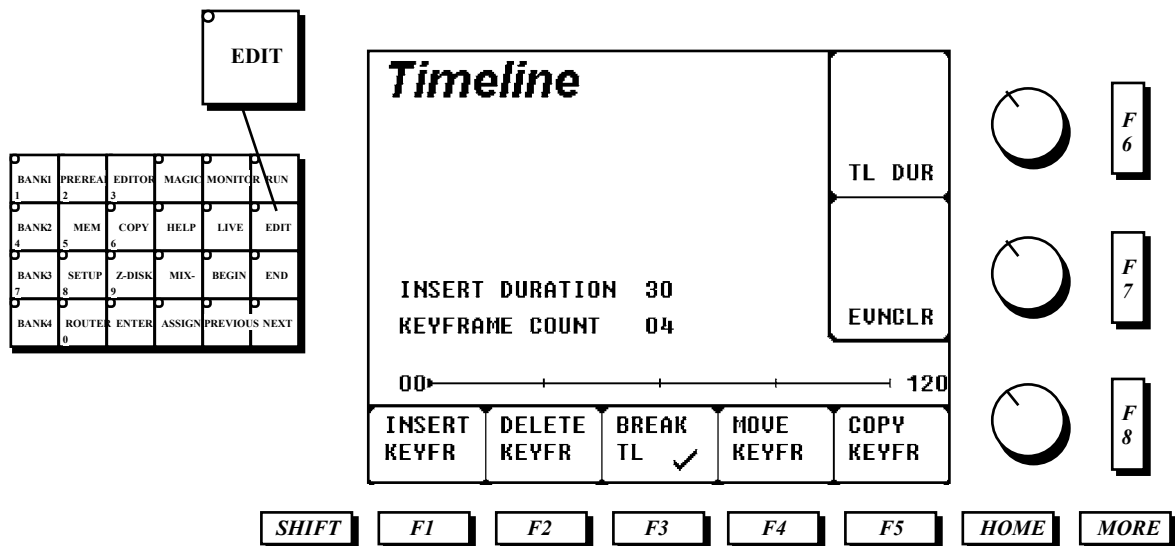
The **Timeline** menu is used to create and modify mixer **Events.** An event may be anything from a static mixer setup to a 20-point Timeline with staggered transitions. *All* transitions, regardless of complexity, are created and modified from this menu.

NOTE: The mixer must be set to **EDIT MODE** for editor control of the faders.

Timeline softkeys at-a-glance

Key	Name	Function
F1	INSERT KEYFRAME	Press this key to **Insert** a **Keyframe** at the current Timeline position.
F2	DELETE KEYFRAME	Press this key to **Delete** the **Keyframe** at the current Timeline position.
F3	BREAK TIMELINE	Press this key to toggle the On/Off state of the **Break Timeline** feature. When enabled (check-marked), the Timeline will **Run** from its current location until it reaches the next keyframe, whereupon it will stop.
F4	MOVE KEYFRAME	Press this key as part of the steps involved in **Moving** a **Keyframe**. To perform this operation, first position the Timeline cursor on the keyframe you wish to move, enter a new location value on the numeric keypad, followed by a single press of *F4*.
F5	COPY KEYFRAME	Press this key to create a duplicate of the cuurent keyframe elsewhere on the Timeline.
F7	EVENT CLEAR	Press this key to **Clear** the current Timeline.

Using the Insert Keyframe Key

The **Insert** command places a **Keyframe** at the current position in the **Timeline**, with the following affects:

- If the **Timeline Cursor** is between the **Beginning** and the **End**, a keyframe will be inserted without affecting the duration of the event.

- If the **Timeline Cursor** is at the **Beginning**, a *new* **Beginning** will be inserted, with the previous **Beginning** becoming the second keyframe**.** The time between the new and old **Beginning** may be defined prior to the **Insert** command by first presetting a value (in frames) on the Function Select section. If no value is entered, the default duration is 30 frames.

- If the **Timeline Cursor** is at the **END**, a *new* **END** will be inserted, with the previous **END** becoming a keyframe just prior to the **End**. The time between the new and old **END** may be defined prior to the **Insert** command by first presetting a value (in frames) on the) on the Function Select section. If no value is entered, the default duration is 30 frames.

Using the Delete Keyframe Key

The **Delete** command removes any programmed **keyframe** on the **Timeline**. **Deleting** points at the **Beginning** or **End** will affect the overall duration of the Event.

Using the Break Timeline Key

The **Break Timeline** feature instructs the mixer to stop the Timeline at evry keyframe.

The normal mode (**Break TL** *not* check-marked) of operation is for the Timeline to run continuously from Beginning to End.

Check-marking **Break TL** instructs the mixer Timeline to stop at each keyframe when a **Run** command is issued via GPI, editor, or Arria control panel. Subsequent **Run** commands produce similar results.

Among other uses, **Breal TL** permits staggered execution of multiple mixer transitions in a single **Event**.

Using the Move Keyframe Key

The **Move** command is used to relocate a **keyframe.** To move a **keyframe:**

- Repetitively press the **PREV / NEXT keys**, located on the Function Select Keypad, to place the **Timeline Pointer** on the **keyframe** to be moved.

- Using the NUMERIC KEYPAD, enter the position (in frames) where the **MIDPOINT** should be moved to on the **TIMELINE**.

- Press the **Move Keyframe** softkey, *F4.*

Using the Copy Keyframe Key

The **COPY** command is used to duplicate the state of a **keyframe** and apply those values to an <u>existing</u> point on the **Timeline**. Copies are only permitted between *adjacent keyframes*, where the former is the source and the latter is the destination.
To copy a **keyframe:**

- Utilizing the **BGN**, **PREV**, **NEXT** or **END** keys in the control panel's Function Select section, place the **Timeline Pointer** on the **keyframe** that you wish to copy. The Arria automatically memorizes the contents of each point as you "park" on it.

- Press one of the following:
    The **PREV** or **NEXT** key.
    The **END** key if the adjacent destination point is the **END**.

- Press **COPY** *(F6).*

NOTE: The Timeline Fader is <u>not</u> valid for defining Timeline positions for both the MOVE and COPY functions.

Using the TL Duration Key

The **Timeline Duration** softkey is used to alter the length of the entire Timeline. To use this feature:

- Press *F6* to place the mixer in the Duration Entry mode.
- Enter the new duration (in frames) on the Function Select keypad.
- Press *F6.*

Using the Event Clear Key

Pressing *F7*clears the contents of the current, unsaved **Event**.

NOTE: After an Event is cleared, the Timeline will contain:
• Faders set to their exact electrical position prior to the CLEAR function.
• An identical Begin and End point.
• 30 frame duration.
The Timeline is parked at the Beginning after an Event is cleared.

Tutorial

Getting Started

This tutorial is designed as a hands-on experience. The user will need the following:

• The Arria
• An editing system
• A 2-channel source, preferably music (this will be the AVTR)
• Another 2-channel source (this will be the BVTR)
• A single-channel source, preferably speech (this will be the CVTR)
• A 4-channel RVTR

The Router Interface must be encoded prior to this step. Consult the manual chapters on the Router Menus for instructions on that procedure.

PLEASE TURN TO THE NEXT PAGE TO BEGIN

Assigning Sources To Faders

The steps involved in assigning audio sources to Faders are:

- Enter the **ROUTER Menu** by pressing the **ROUTER** key in the Function Select section of the control panel.

- Press **SHIFT** and *F6* to **FREE-ALL** current routing assignments. At this point, all Fader LED displays should be dark (no assignments). This step is optional, and is included and suggested as a good starting-point. In actual operation, **FREE-ALL** is typically used only at the beginning of a session for those wishing to "start from scratch."

- Check the status of the display above *F5*. If check-marked, press *F5* to remove the check-mark. This disables automatic selection of the internal **Reverb Engine** to faders. **Reverb** has been omitted from this exercise for the sake of simplicity. In actual operation it is highly desirable to have the Reverb Engine assigned to faders, ready for instant operation.

- Check the status of the displays below *F1* and *F2* If a checkmark is not currently displayed on each, press the appropriate softkey to achieve that result. This enables all 4 channels of any 4-channel device for routing and assignment to faders.

- The LCD Screen should now look like this:
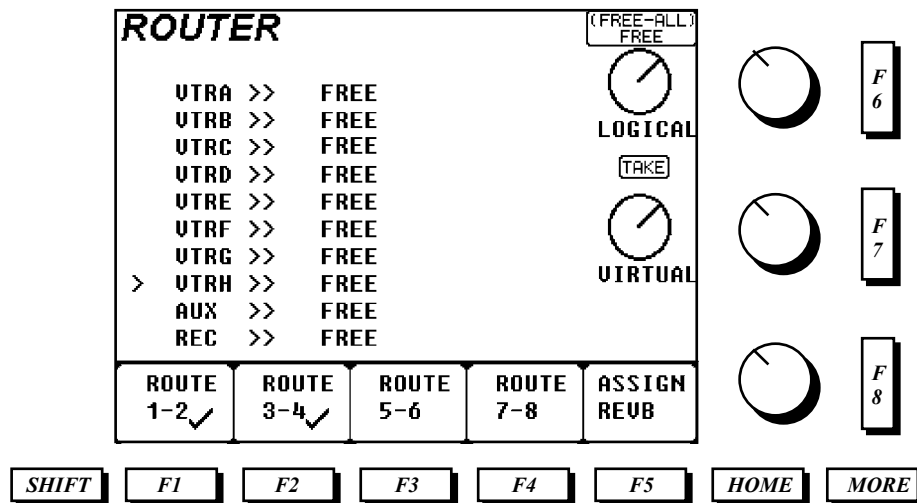
*At this point you will need to know how the **ROUTER INTERFACE** is encoded, and which VTRs are at your disposal. Since each Arria installation is unique, the remainder of this exercise concentrates more on the fundamentals of source assignment, and less on actual keystrokes.*

TO ASSIGN THE AVTR TO FADERS 1 AND 2:

- In the **ROUTER** menu, rotate softknob *F6* to position the cursor beside **VTRA**.

- Select the **Virtual Source** that is to be the **AVTR**. In this exercise, the **AVTR** will playback a music reel. The **Virtual Source** may be preset in two ways:

  1) By rotating softknob *F7* until the appropriate **Source Name** is displayed.

  2) By first pressing the **ENTER** key on the **Function Select** section of the control panel, followed by the appropriate **Source ID**. (It is recommended that a cross-reference of **Sources** and **Source IDs** be kept near the mixer).

- Press the **TAKE** key. The result will be:
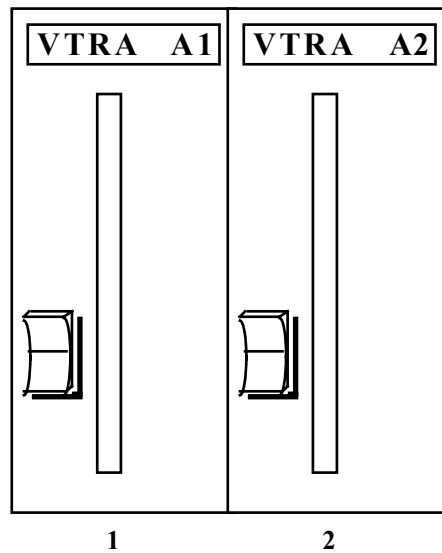
TO ASSIGN THE BVTR TO FADERS 3 AND 4:

- Rotate softknob *F6* to position the cursor beside **VTRB**

- Select the **Virtual Source** that is to be the **BVTR**. In this exercise, the **BVTR** is a 2-channel source. As in the previous example, the **Virtual Source** may be preset by:

  1) Rotating softknob *F7* until the appropriate **Source Name** is displayed.

  2) By first pressing the **ENTER** key on the **Function Select** section of the control panel, followed by the appropriate **Source ID**. (It is recommended that a cross-reference of **Sources** and **Source IDs** be kept near the mixer).
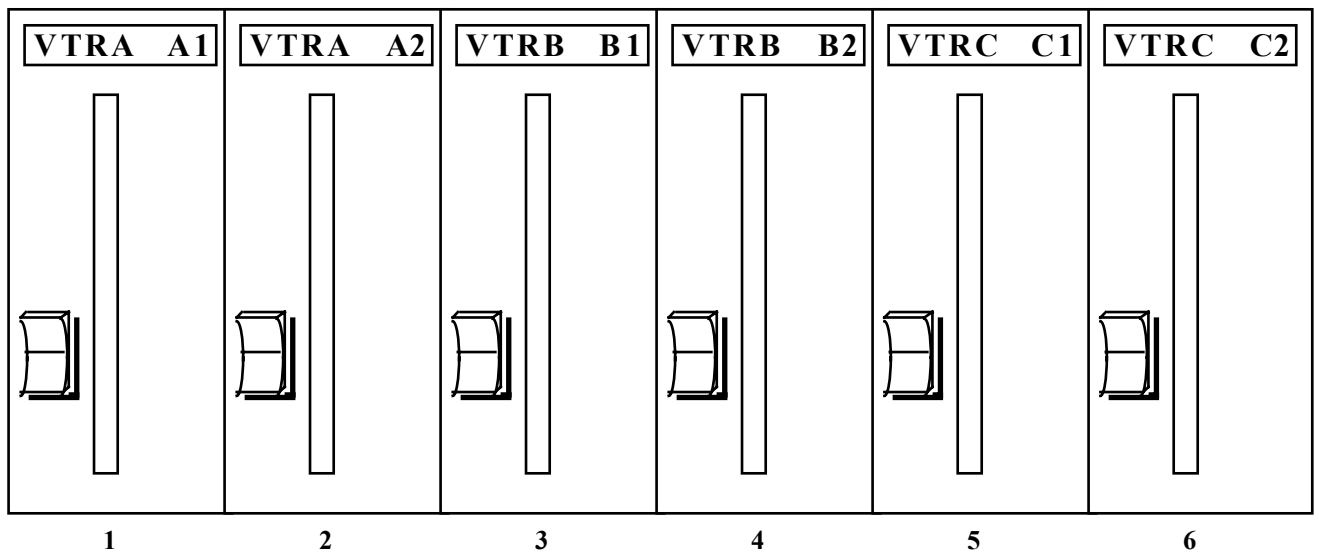
• Press the **TAKE** key. The result will be:

VTRA A1	VTRA A2	VTRB B1	VTRB B2
1	2	3	4
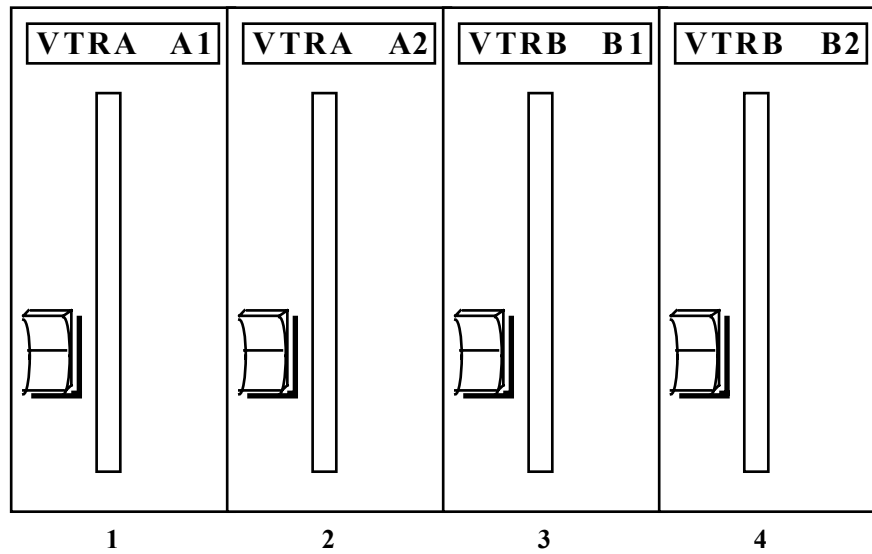
Repeat the preceding procedure for the CVTR. When complete, the result will be:

VTRA A1	VTRA A2	VTRB B1	VTRB B2	VTRC C1	VTRC C2
1	2	3	4	5	6

Although the CVTR will only contribute a single channel to this mix, both available channels have been assigned to faders.The **Router Interface** *always* assigns both channels of a stereo pair to faders. The steps involved in customizing the fader assignments is discussed later in this section.

THE TUTORIAL CONTINUES ON THE NEXT PAGE

TO ASSIGN THE RVTR:

Repeat the preceding procedure for the RVTR. When complete, the result will be:

Now that the channels are assigned to faders, the Mix Bus Assignments of those sources must be verified and/or altered to suit the needs of a particular edit. For this example, channels 1 and 2 of the AVTR will be sent "hard left" and "hard right," respectively, while the 2 channels of the BVTR will be sent to both **MIX BUS 1** and **MIX BUS 2.**

The steps involved in sending the AVTR Channel 1 to **MIX BUS 1** are:

1) Press the **CH** key on **Fader 1**.

2) Press the **BUS** key on the **Aux Select** section of the control panel. The current **Bus Assignment** for that channel is displayed.

3) Utilizing softknob *F6* to select a Bus and *F1* to set/remove a checkmark, set-up the menu to look like this:

This routes the AVTR channel 1 "hard left."

4) Press the **CH** key on **Fader 2**.

5) Utilizing softknob *F6* to select a Bus and *F1* to set/remove a checkmark, set-up the menu to look like this:

This routes the AVTR channel 2 "hard right."
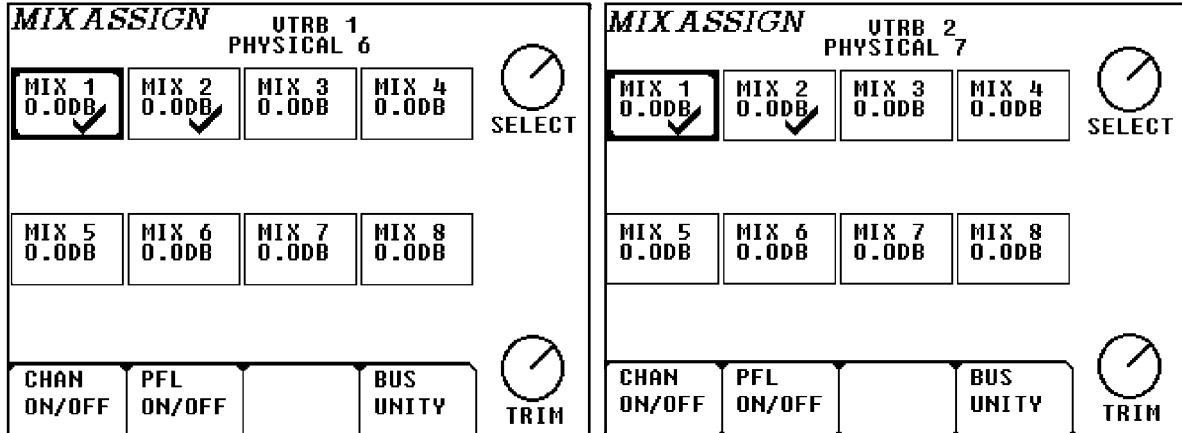
Now set-up the Bus menus for both channels of the BVTR to look like this:

USING THE MON MENU

With Mix Bus assignments complete, one final setup aspect remains: Monitoring**.** Being completely independent from the **Mix** setups, the settings in the **Mon Assign** menu only affect how a source is heard when selected directly on the **Monitor Bus** – either manually or via edit system control.

The operation of the **Mon Assign** menu is similar to the **Mix Assign** menu, except that the settings in the **Mon Assign** menu are only ON/OFF, as opposed to having gain trims. In the Arria, monitoring level trims are handled by the **APVs**.

Monitoring setup is completely a matter of personal choice, and often changes throughout a session. Some users want single-channel sources to feed all monitor buses, others may prefer to match the **Mon** setups with the **Mix** menu setups. For this part of the tutorial the user should experiment with different monitoring setups and note the interaction and differences between configurations.

NOTE: The MON menu need not be utilized if the MONITORING MODE is set to anything other than "MON" (review the chapter on the Monitor Menu).

Bear in mind that where monitoring is concerned, the RVTR is a special case. Audio previews may yield undesirable results if the RVTR's monitoring setup does not suit the application. The following rules apply to the RVTR and preview switching:

- The RVTR's faders must be set to **PREFADE LISTEN (PFL).**

- Except for PreRead events, the RVTR must not feed the Mix Busses. This may be accomplished in by either deselecting Mix Bus Assignments in the **Mix Assign** menu or by setting the **On/Off** key on each RVTR fader to "Off."

The Arria uses a derivative of ESAM II protocol. Although ESAM II is designed for traditional PGM/PST operations, the Arria converts the available data into its **TIMELINE** equivalent. There are several prerequisites for comprehensive editor control of the Arria:

1) All items in the Arria **EDITOR** menu must be enabled.

2) One of the standardized setups should be selected in the **APV** menu.

3) The operational mode of the Arria must be **EDIT MODE**.

4) As a starting-point, the editing system's Audio Crosspoint table should correspond to :

BLK = 00

AVTR = 01

BVTR = 02

CVTR = 03

DVTR = 04

EVTR = 05

FVTR = 06

GVTR = 07

HVTR = 08

IVTR = 09

RVTR = 10

JVTR = 12

2

For this example, a 30-frame dissolve will be created between a stereo source on the AVTR and a stereo source on the BVTR.
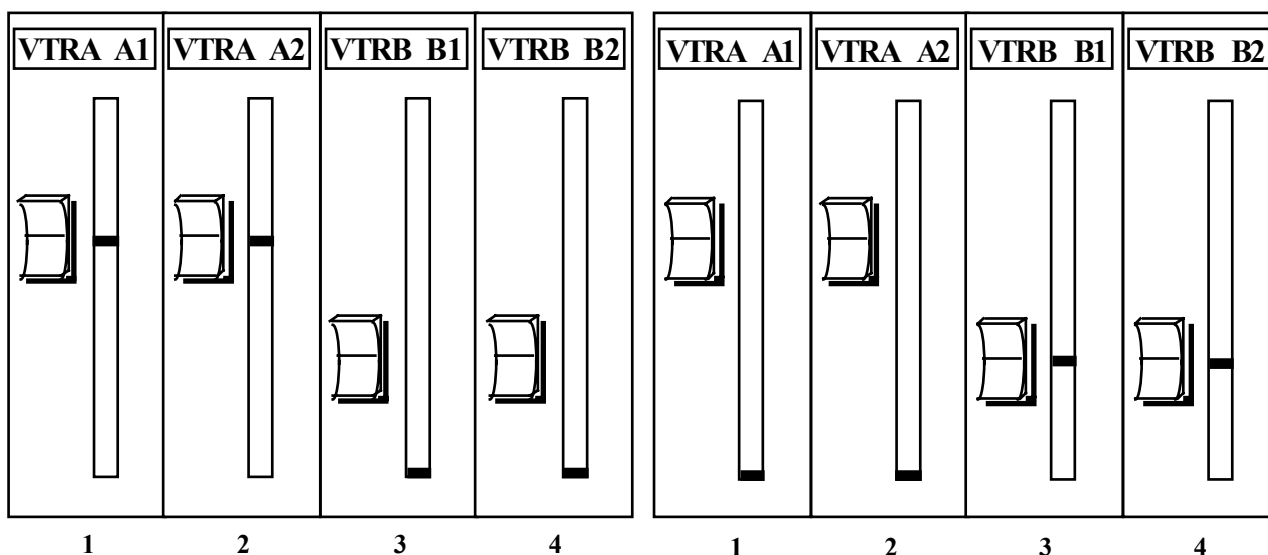
SETTING LEVELS

1) To ensure that no extraneous **Event** data exists, clear the current **Event** by pressing the **Edit** key, located in the Function Select section, followed by *F7*.

2) Select the **AVTR** from the editing system's keyboard and set **Faders 1 and 2** to appropriate levels. Note how the LED Bargraph display next to **Faders 1 and 2** move in relation to the changes you make in mechanical fader levels. Also notice that all the other LED displays have been set to ∞, regardless of fader mechanical position.

3) Select the **BVTR** from the editing system's keyboard and set **FADERS 3 and 4** to appropriate levels. Notice that when the **BVTR** is selected, the LED level indicators on **FADERS 1 and 2** reset to ∞.

Refer to the diagrams below to verify your setup.

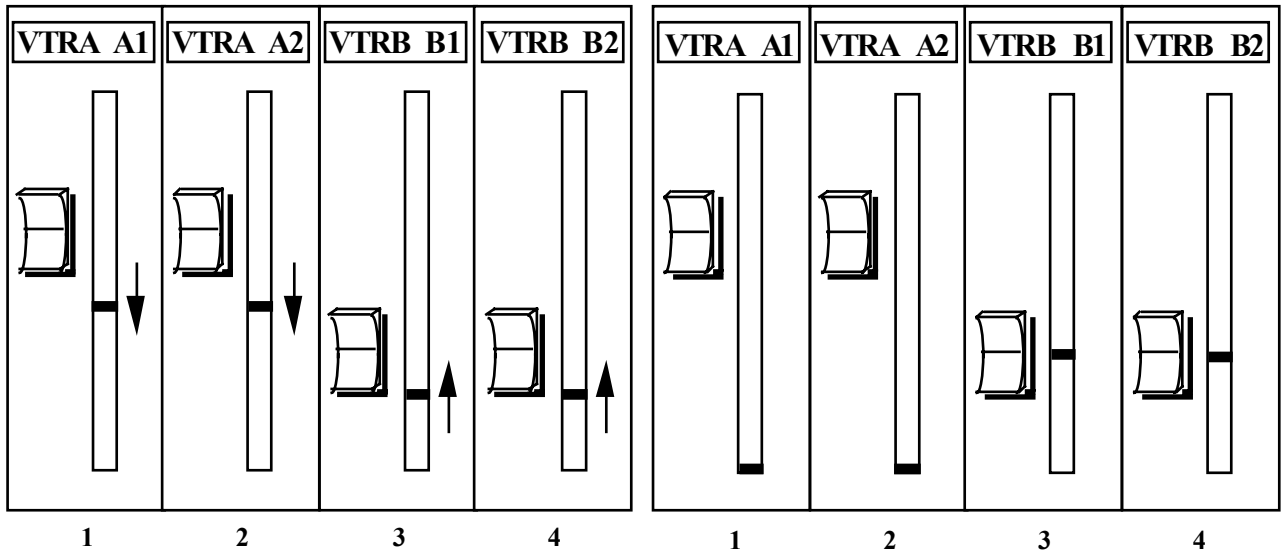With the AVTR selected on the editing system, the Arria faders should look like this:

With the BVTR selected on the editing system, the Arria faders should look like this:

4) Program the dissolve on the editor keyboard.

5) Select either **Record** or **Preview** on the editor keyboard.

6) At the start of preroll, the Arria will set up a **Timeline** that transitions from the AVTR to BVTR in 30 frames. The **Timeline** is automatically parked at the **Beginning**, setting the Arria faders as depicted in the above left graphic.

7) At the transition point, the LED displays on **Faders 1 and 2** will begin to move lower, while the LED displays on **Faders 3 and 4** will begin to move higher, as depicted on the top of the next page.

How the LED displays react during the transition: At the end of the transition, the DMX should look like this:

VTRA A1	VTRA A2	VTRB B1	VTRB B2		VTRA A1	VTRA A2	VTRB B1	VTRB B2
1	2	3	4		1	2	3	4

CHANGING LEVELS

Using the previous example as a basis, let's assume that there are two problems within the transition:

1) The dissolve duration is too short.
2) The BVTR's levels are too low.

Both of these "problems" are simple to correct:

• To change the transition duration, use the editor keyboard to reprogram the edit.
• To change the BVTR levels, select the BVTR from the edit system and reset the fader levels. The **Timeline** will update automatically.

NOTE: During a transition, all faders involved in the transition are "locked." When the Timeline reaches the END, all faders are reactivated.


ADDING A SOURCE

In this example, the AVTR will dissolve to **both** the BVTR and CVTR. Using the previous example as a basis, the steps involved are:

1) In the Arria's **Editor** menu, disable **Source Assignment** by toggling *F3*. This will prevent any further changes to the **Timeline** by the editing system.

2) Press the **BEGIN** key, located in the Function select section, to park the **Timeline** at the beginning. Since the previously-programmed timeline was a dissolve from the AVTR to the BVTR, the LED displays next to each fader should look like this:
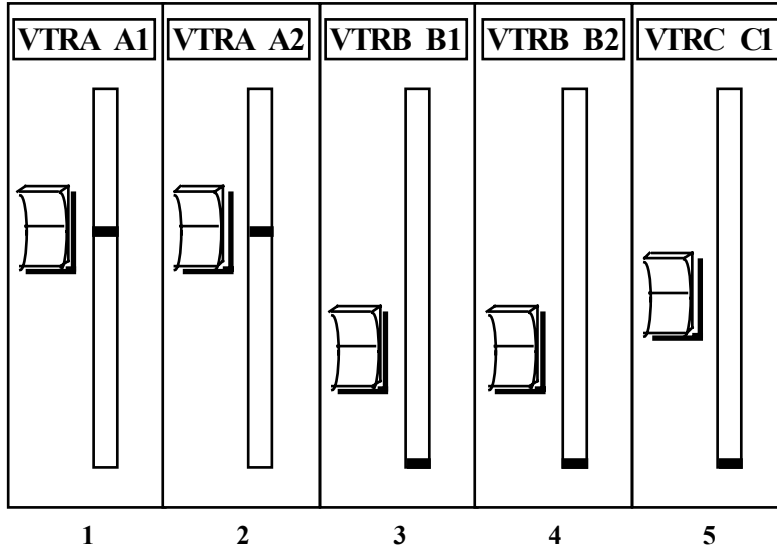
3) Press **END** on the AUTOMATION SUBPANEL to park the **Timeline** at the end. The LED displays next to each fader should now look like this:
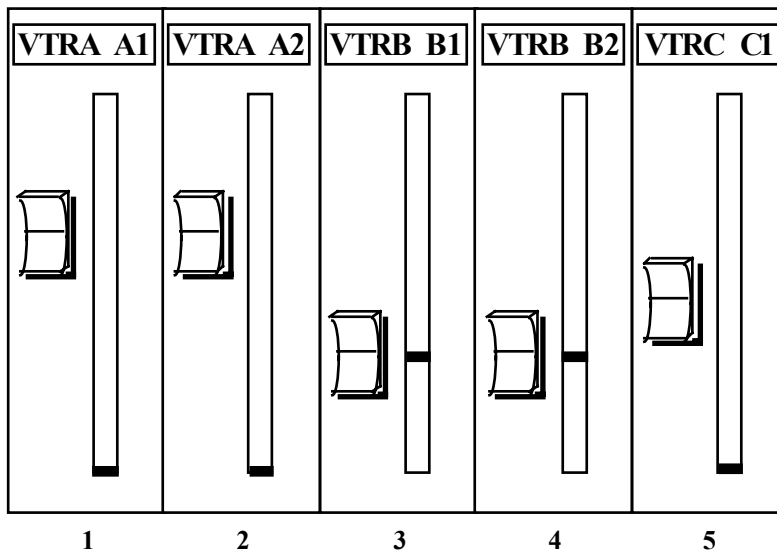
4) "Catch" **Fader 5** by moving the fader to meet the illuminated LED at the bottom of the display. When the LED begins tracking with fader motion, you've "caught" the fader, and levels are controllable.

5) Press **Play** for the CVTR on the edit system and set an appropriate level for that machine. Both the BVTR and CVTR may be played to achieve the proper balance. Once levels have been set, the LED displays next to each fader should look something like this:

VTRA A1	VTRA A2	VTRB B1	VTRB B2	VTRC C1

```
1        2        3        4        5
```
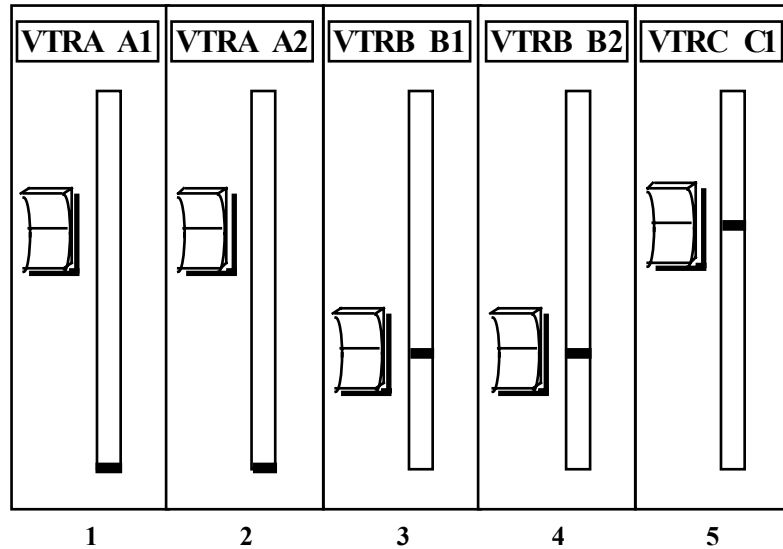
6) Press **Begin** in the Function Select section to park the **Timeline** at the beginning.

7) Select either **RECORD** or **PREVIEW** on the editing system. At the transition start point, the LED displays next to each fader will react as depicted below:

VTRA A1	VTRA A2	VTRB B1	VTRB B2	VTRC C1

```
1        2        3        4        5
```
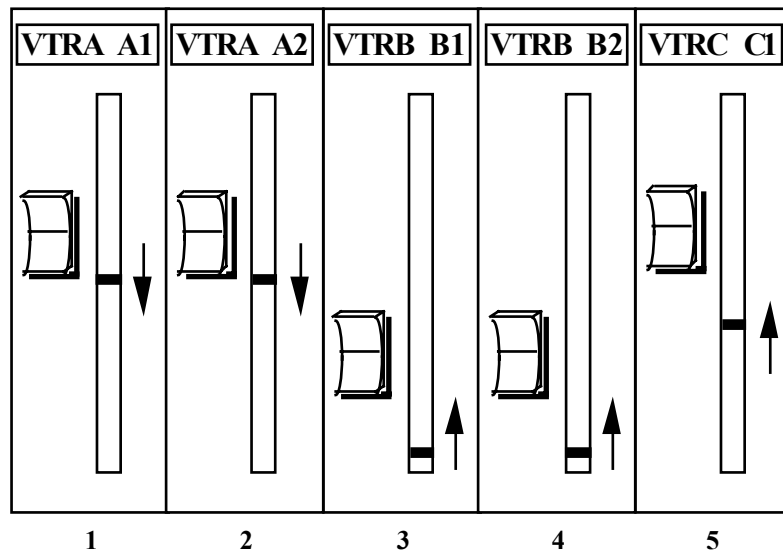
REMEMBER: Source Assignment must be disabled in the Arria EDITOR menu for multiple-VTR transitions.

STORING THE EVENT

To **Store** the previous **Event** to Arria's non-volatile memory:

1) Press the **MEM** key, located in the Function Select section.

2) Press *F1* to initiate a storage routine.

3) Enter a file name (up to 20 characters)

4) Press *F7* to complete the routine.

The new file will now appear in the list of memories.

CREATING A CUSTOM TIMELINE EVENT

In this example, a stereo music track on the AVTR will be mixed with a mono announce track from the CVTR channel 1. The music, starting at a full level, must dip to an underlevel so that an announce track may be heard over it. However, let's assume that the announce track has two problems:

▪ There is a great deal of background noise

▪ We need to pick-up the announcer in mid-sentence – which gives us only 5 frames of "air".

▪

An additional spec stipulates that there shouldn't be any gap between when the music hits its underlevel and when the announcer is heard. Due to the high degree of background noise, a direct cut to the announcer is deemed unacceptable.

Here's what needs to be done:

13) Start with the music at full level.

14) Dip the music to an underlevel over the course of 20 frames.

15) 15 frames into the music transition, fade up the announcer over the course of 5 frames.

Here's one way of doing it:

1) Bring all faders to ∞ (this optional step is performed only to "clean-up" the console...allowing the user to concentrate only on the specific faders involved in the **Event**).

2) Clear the current **Event** by pressing the **Edit** key in the Function Select section, followed by *F7*.

3) Since the entire Event will take place over the course of 20 frames, enter that as the **Timeline Duration** by first pressing *F6*, which sets the Function Select section into a numeric entry mode. Now press <2><0> (PreRead and Router keys), followed by a single press of *F6*.

4) In the Arria **Editor** menu, disable **Source Assignment** and **Rate**. This will prevent **Timeline** programming by the editing system.

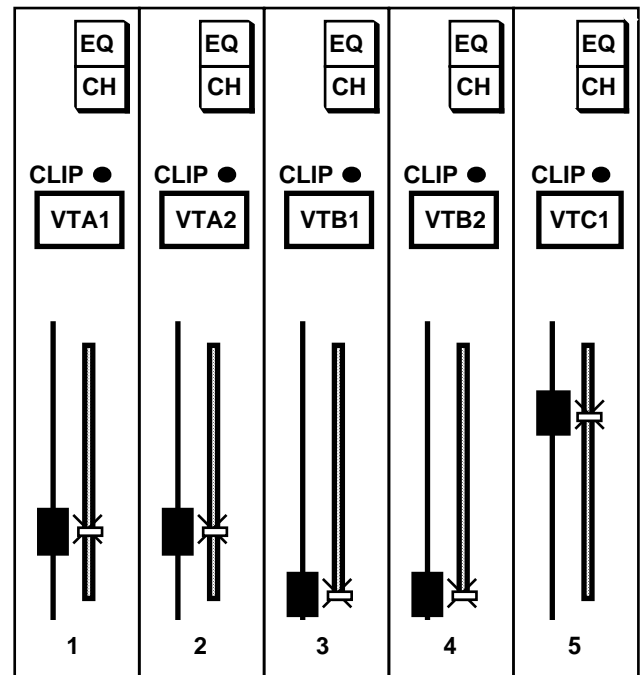5) Roll the AVTR (music) and set **Faders 1** and **2** to achieve a "full" level.

6) Press the **END** key to park the Timeline at the end (20 frames from the beginning).

7) Set the AVTR's faders to achieve an underlevel.

8) Roll the CVTR and set **FADER 5** to achieve a normal speech level.

REFER TO THE DIAGRAM AT THE TOP OF THE NEXT PAGE TO VERIFY YOUR SETUP
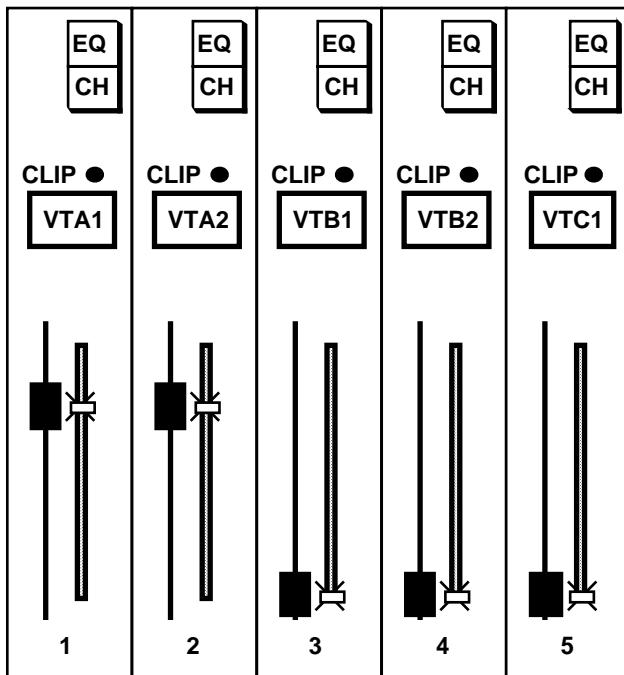
BEGINNING OF EVENT   END OF EVENT

Using the **Timeline Fader**, move through the **Event**. Notice that all faders are "in motion" from the time the event starts, to the time it ends. ***THIS IS NOT WHAT WE WANT TO HAPPEN!*** What has been programmed thus far is a simple crossfade; no different than the previous tutorial example. What we *do* want is a 20 frame transition between two preset AVTR levels, along with a 5 frame fade-up of the CVTR that <u>starts 15 frames into the event</u>.

9) Using either the **Timeline Fader**, place the **Timeline Cursor** 15 frames into the **Event.**

10) Press *F1* to **Insert** a **Keyframe** at that location.

11) "Catch" **Fader 5** and place the level at ∞.

12) Since **Fader 5** is at ∞ at both the **Beginnning** and **Second Keyframe**, its level will not change until 15 frames into the **Event**, which now runs properly.

13) Alterations to levels at the **Beginning**, **Middle Keyframes**, or **End** may be accomplished by parking on one of the three points and changing the fader levels.

THE TUTORIAL CONTINUES ON THE NEXT PAGE

MOVING A KEYFRAME

In this example, we'll relocate the **Second Keyframe** from the last example. To move that keyframe from 15 to 10 frames from the **Beginning**:

1) Press the **EDIT** key to access the **Timeline**.

2) Press either the **Previous** or **Next** keys (located in the Function Select section) to park the **Timeline Cursor** on the keyframe.

3) Press the **Enter** key (located in the Function Select section), which sets the Function Select section into a numeric entry mode.

4) Press <1><0> (Bank1 and Router).

5) Press the **Move Keyframe** function key *F4* to move the keyframe.

SCALING AN ENTIRE EVENT

In this example, we'll change the previous event's overall duration from 20 frames to 30 frames. While this process will alter the time between keyframes, the relative offsets are preserved.

1) Press the **EDIT** key to access the **Timeline**.

2) Press the **End** key (located in the Function Select section).

3) Press the **Enter** key (located in the Function Select section), which sets the Function Select section into a numeric entry mode.

4) Press <3><0> (Editor and Router).

4) Press the **Timeline Duration** key, *F6*.

PROGRAMMING A PAUSE IN THE TIMELINE

SWAP COMMANDS FROM
AN EDIT SYSTEM

A **SWAP** command from an edit system instructs the mixer to remap all of the current **RVTR CHANNELS** with respect to all of a particular source VTR's **CHANNELS** . A number of operations are accomplished during a **SWAP:**

• The **CHANNEL NUMBERS** are appropriately reassigned.

• The fader levels of the new source VTR (former **RVTR**) are set to match those of the previous **RVTR**.

• If one or more **CHANNELS** of the original source VTR were set to **FULLTIME LIVE**, all **CHANNELS** of the new source VTR (former **RVTR**) are set to **FTL**.

• All FADER SUBPANELS involved in the **SWAP** will temporarily display the word "SWAP" to alert the user to the change in setup.

SWAP interchanges **CHANNEL NUMBERS**, *not* **CHANNEL LABELS**. Except for the momentary indication of "SWAP" in a FADER's display, none of the FADER **LABELS** will be altered.

HINT: FOR THE MOST VISUAL FEEDBACK, SET THE DMX TO "**SHOW CH#**" (IN THE CH# MENU) WHILE LEARNING HOW TO USE SWAP.

RULES FOR SWAPPING

For consistent editor/DMX operations, the following rules must be followed:

•   The edit system's Audio Crosspoint Table must contain unique entries (do not assign the same crosspoint number to more than one source).

•   The edit system must be capable of downloading its table to the DMX (on GVG *SUPER EDIT* systems, this is accomplished with the keystrokes: <SHIFT><RESET>).

•   Do not **SWAP** if the **EDITOR INTERFACE** is disabled.

•   Any changes to the editor's Audio Crosspoint Table must be followed by a download to the DMX.

•   A recall of a new DMX **CONFIGURATION FILE** must be followed by a download of the editor's Audio Crosspoint Table.

A good way to check the coincidence of the editor/DMX table is to view the DMX MONITOR DISPLAY as each source key is selected on the edit system (ensure the first level of the **MODE** menu is set to **VTR FOLLOW**). If the proper **LOGICAL NAMES** are displayed, the tables are coincident.

PREREAD EDITING

This example illustrates how the mixer behaves during a typical **PREREAD** event, where the **RVTR** dissolves to the **AVTR** in 30 frames.

As discussed in the chapter on the **APV** feature, the mixer can automatically set itself for a **PREREAD** event. However, the operator needs to verify a few items on both the edit system and the Arria to achieve the automation.

EDIT SYSTEM SETUP

The operator must decide which of the available "mark table" sources can be assigned with an audio mixer crosspoint of **20**. Typically, an **AUX** source is used for this purpose. By assigning a **SOURCE** this special crosspoint value, selection of that source on the edit system opens the RVTR's faders.

- For this example, set the **AUX** audio crosspoint to **20**.

- Set-up a **PREREAD** edit that dissolves from **AUX** to the **AVTR** in **30 frames.**

Arria SETUP

For a seamless **PREREAD** match-in, the **RVTR's FADERS** must be set-up as follows:

IF THE RVTR IS ASSIGNED TO FADERS

- Physical position of the faders must be at 0.0db (unity).

- Each RVTR channel must be **PANNED** to itself. This is easily accomplished with the **PREREAD INIT** feature in the **REC** menu.

IF THE RVTR IS NOT ASSIGNED TO FADERS

- Depress the **REC** key and check the **RVTR's** pseudofader levels. If they are not at 0.0dB, press <**UNY**><**ENT**>.

- To ensure that each RVTR channel is **PANNED** to itself, press the **PREREAD INIT** softkey in the **REC** menu.

Using either of the above procedures sets-up the RVTR for a seamless **PREREAD** match-frame edit. Also ensure that the RVTR's faders (hardware or pseudo) are set to **EDIT MODE** (as opposed to **FULLTIME LIVE**).

A) This is the state of the mixer when the AVTR is selected from the edit system.

BUS1	BUS2	BUS1	BUS2	BUS3	BUS4
EQ	EQ	PFL EQ	PFL EQ	PFL EQ	PFL EQ
CH	CH	CH	CH	CH	CH
CLIP ●	CLIP ●	CLIP ●	CLIP ●	CLIP ●	CLIP ●
VTA1	VTA2	REC1	REC2	REC3	REC4
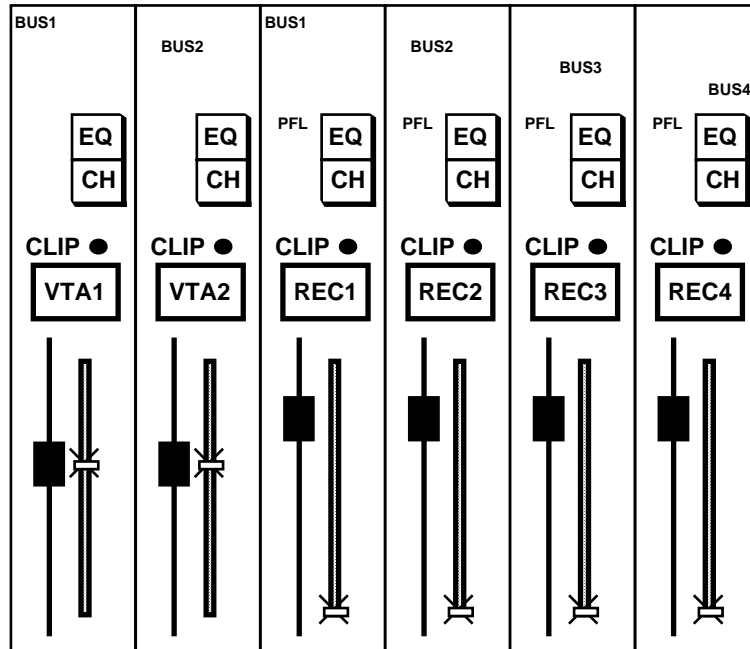
Note the following:

• The AVTR's electrical levels match the physical FADER position.

• The RVTR FADERS are set to **PFL**, enabling monitoring/preview switching of the record VTR through the **APV** menu.

• The electrical level of the RVTR FADERS is at ∞, despite the fact that the physical position of the FADERS is 0.0dB.

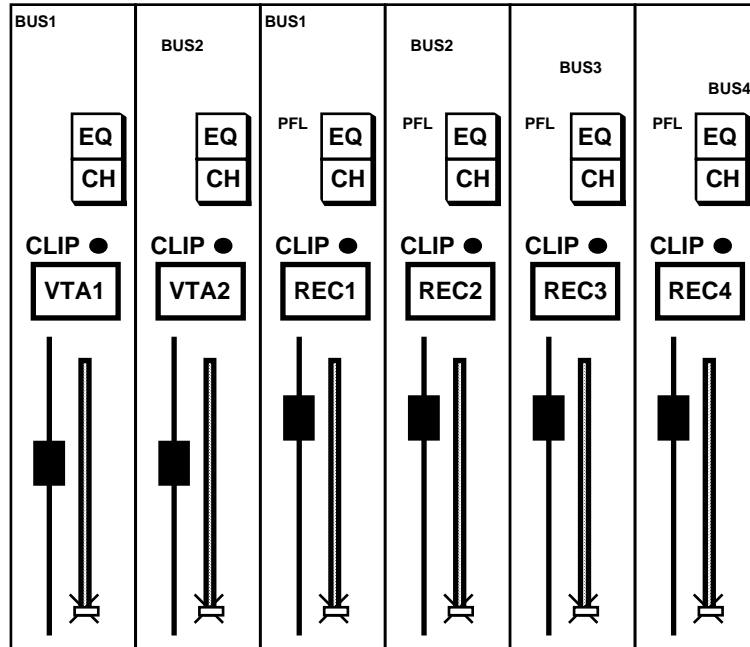• The RVTR's **PANNING** is set for discrete feeds to the **MIX BUS**.

B) This is the state of the mixer when the RVTR is selected from the edit system.

Note the following:

* The electrical level of both the AVTR and RVTR FADERS is at ∞.

* The RVTR should not be set for EE audio playback on the digital audio channels. However, since the RVTR level jumps to ∞ when the RVTR is selected , the possibility of feedback is reduced.

* Since the RVTR is set to **PFL**, its pre-recorded program material is heard through the **APV** system.

C) This is the state of the mixer when **AUX** is selected on the edit system.

BUS1	BUS2	BUS1	BUS2	BUS3	BUS4
EQ	EQ	PFL EQ	PFL EQ	PFL EQ	PFL EQ
CH	CH	CH	CH	CH	CH
CLIP ●	CLIP ●	CLIP ●	CLIP ●	CLIP ●	CLIP ●
VTA1	VTA2	REC1	REC2	REC3	REC4
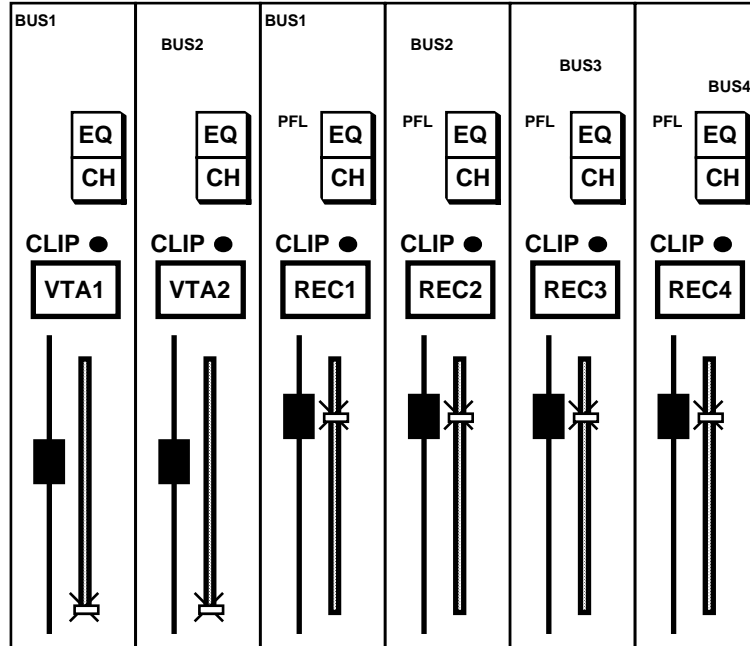
Note the following:

• The RVTR's electrical levels match the physical FADER position, which should be 0.0dB

• The electrical level of the AVTR is at ∞.

D) This is the state of the mixer during a **PREREAD** transition from **AUX** to the **AVTR**.
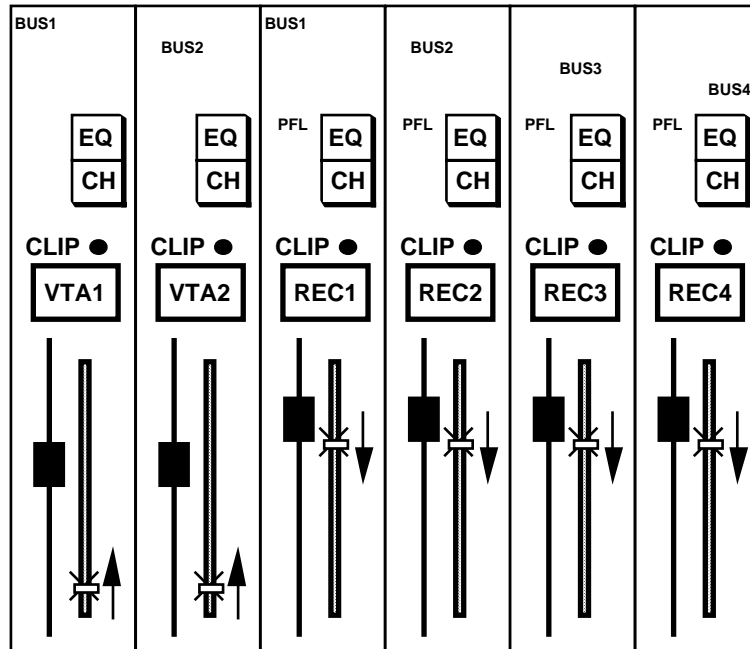
Note the following:

- Since **AUX** has been assigned an **AUDIO MIXER CROSSPOINT VALUE** of **20**, the **RVTR FADERS** are treated as a **SOURCE** for the transition.

- At the start of the transition, the RVTR's electrical levels are at 0.0dB.

- At the start of the transition, the AVTR's electrical levels are at ∞.

- The arrows indicate the direction of electrical level transition during the event.

IMPORTANT

DO NOT USE AUX (OR WHICHEVER EDITOR SOURCE YOU HAVE ASSIGNED WITH AN AUDIO CROSSPOINT OF 20) IN A NORMAL (NON-PREREAD) EDIT. THIS WILL RESULT IN FEEDBACK.

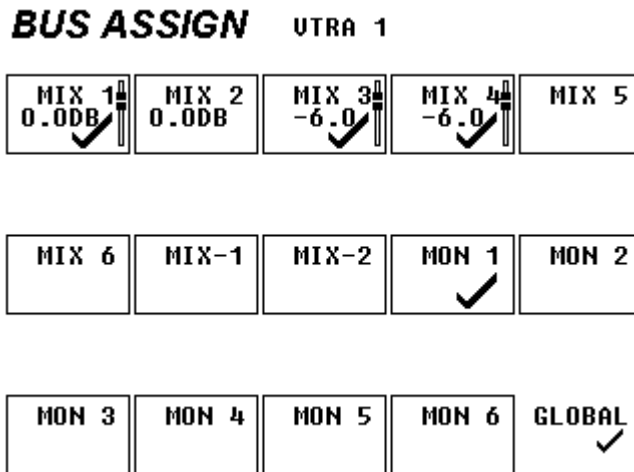Now that the **CHANNELS** are **ASSIGNED** to **FADERS**, the panning of those sources must be verified and/or altered to suit the needs of a particular edit. For this example, channels 1 and 2 of the AVTR will be sent "hard left" and "hard right,"**.** The monitor assignments are also assigned in the Buss menu.

The steps involved in sending the AVTR Channel 1 to **BUS 1** are:

1) Press the **CH** key on **FADER 1**.

2) Press the **BUS** key on the F/X SECTION. The current **BUS ASSIGNMENT** for that channel is displayed.

3) With repetitive presses of function keys *(F1 - F8)*, set the menu as follows:

BUS ASSIGN   VTRA 1

MIX 1 0.0DB ✓	MIX 2 0.0DB	MIX 3 -6.0 ✓	MIX 4 -6.0 ✓	MIX 5

MIX 6	MIX-1	MIX-2	MON 1 ✓	MON 2

MON 3	MON 4	MON 5	MON 6	GLOBAL ✓

This routes the AVTR channel 1 "hard left."

4) Press the **CH** key on **FADER 2**.

5) Alter the **BUS** menu as follows:

BUS ASSIGN   VTRA 1

MIX 1 0.0DB ✓	MIX 2 0.0DB	MIX 3 -6.0 ✓	MIX 4 -6.0 ✓	MIX 5

MIX 6	MIX-1	MIX-2	MON 1 ✓	MON 2

MON 3	MON 4	MON 5	MON 6	GLOBAL ✓
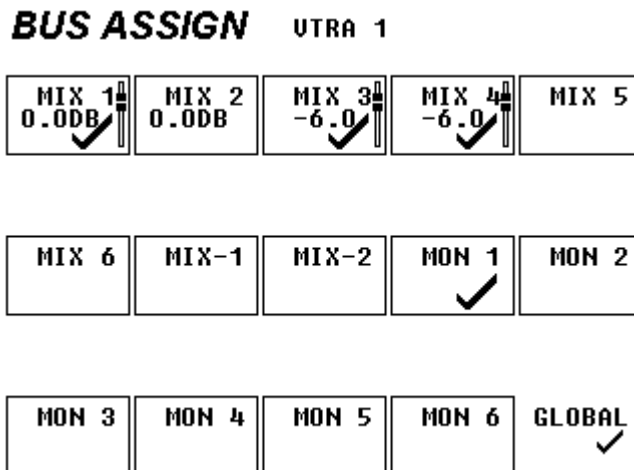
Setting The Monitoring In The Bus Menu

With preliminary settings complete, one final setup aspect remains: Monitoring. Being completely independent from the BUS setups, the **MONITOR BUS** settings in the BUS menu only affect how a source is heard when selected directly on the **MONITOR BUS** – either manually or via edit system control.

The operation of the **MONITOR BUS SELECTS** is similar to the **MIX BUS SELECTS** in the BUS menu, except that the settings in the **MON** menu are only ON/OFF, as opposed to being continuously variable.

Monitoring setup is completely a matter of personal choice, and often changes throughout a session. Some users want single-channel sources to feed all monitor buses, others may prefer to match the **MON** setups with the **PAN** menu setups. For this part of the tutorial the user should experiment with different monitoring setups and note the interaction and differences between configurations.

NOTE: The MONITOR SELECTS in the BUS menu need not be utilized if the MONITORING MODE is set to anything other than MON FOLLOW (review the chapter on MONITOR MODE, in Section 2 of this guide).

Bear in mind that where monitoring is concerned, the RVTR is a special case. Audio previews may yield undesirable results if the RVTR's monitoring setup does not suit the application. The following rules apply to the RVTR and preview switching:

- The RVTR's faders must be set to **EDIT MODE** (as opposed to **FULLTIME LIVE**)**.**

- The RVTR's faders must be set to **PREFADE LISTEN (PFL).**

- **PANNING** for all channels of the RVTR should be disabled for all **MIX BUSES** (except on PREREAD events).

•   During a preview, the Arria will replace the targeted channel or channels – as set in the Mark Table of the edit system – on **every** **MONITOR BUS** that it (they) appear on.

Timeline Control Via An Edit System

Arria uses a derivative of ESAM II protocol. Although ESAM II is designed for traditional PGM/PST operations, Arria converts the available data into its **TIMELINE** equivalent. There are several prerequisites for comprehensive editor control of the Arria:

1) All items in the Arria **EDITOR** menu must be enabled.

2) Arria must be **EDIT MODE** (selected on the FUNCTION SELECT keypad).

3) The editing system's Audio Crosspoint table must correspond to :

<div align="center">

BLK = 00

AVTR = 01

BVTR = 02

CVTR = 03

DVTR = 04

EVTR = 05

FVTR = 06

GVTR = 07
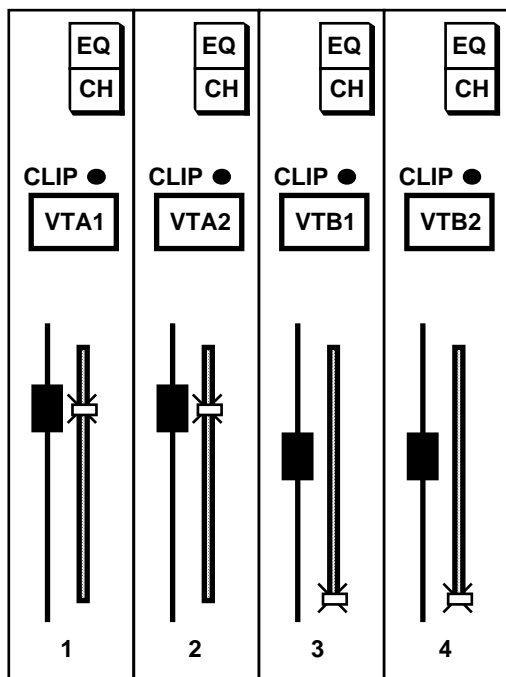
HVTR = 08

AUX = 09

RVTR = 10

Z.REC = 11

PREREAD = 20

</div>

For this example, a 30-frame dissolve will be created between a stereo source on the AVTR and a stereo source on the BVTR.
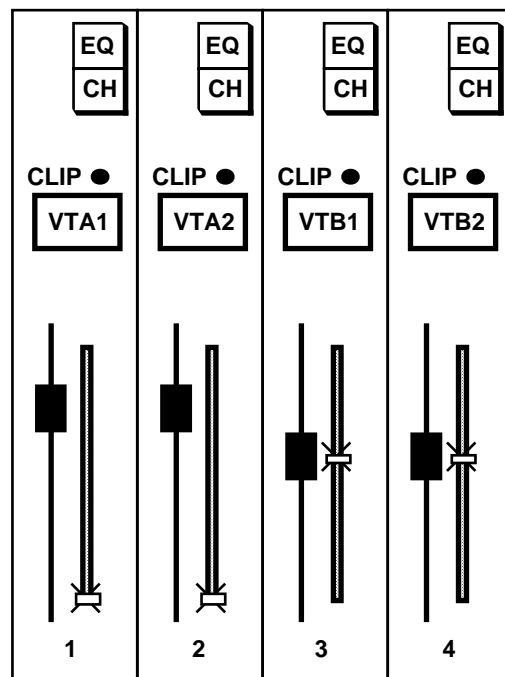
SETTING LEVELS

1) To ensure that no extraneous **EVENT** data exists, clear the current **EVENT** by pressing the <**EVENT**> key on the FUNCTION SELECT KEYPAD, followed by *<(F5)>*.

2) Select the **AVTR** from the editing system's keyboard and set **FADERS 1 and 2** to appropriate levels. Notice that the LED displays next to **FADERS 1 and 2** move in relation to the changes you make in mechanical fader levels. Also notice that all the other LED displays have been set to -∞, regardless of fader mechanical position.

3) Select the **BVTR** from the editing system's keyboard and set **FADERS 3 and 4** to appropriate levels. Notice that when the **BVTR** is selected, the LED level indicators on **FADERS 1 and 2** reset to -∞.

With the AVTR selected on the editing system, the Arria should look like this:

With the BVTR selected on the editing system, the Arria should look like this:


4) Program the dissolve on the editor keyboard.

5) Select either **RECORD** or **PREVIEW** on the editor keyboard.

6) At the start of preroll, the Arria will set up a **TIMELINE** that transitions from the AVTR to BVTR in 30 frames. The **TIMELINE** is automatically parked at the **BEGINNING**, setting the Arria faders as depicted in the above left graphic.

7) At the transition point, the LED displays on **FADERS 1 and 2** will begin to move lower, while the LED displays on **FADERS 3 and 4** will begin to move higher, as depicted on the top of the next page.

How the LED displays react during the transition:

At the end of the transition, the Arria should look like this:
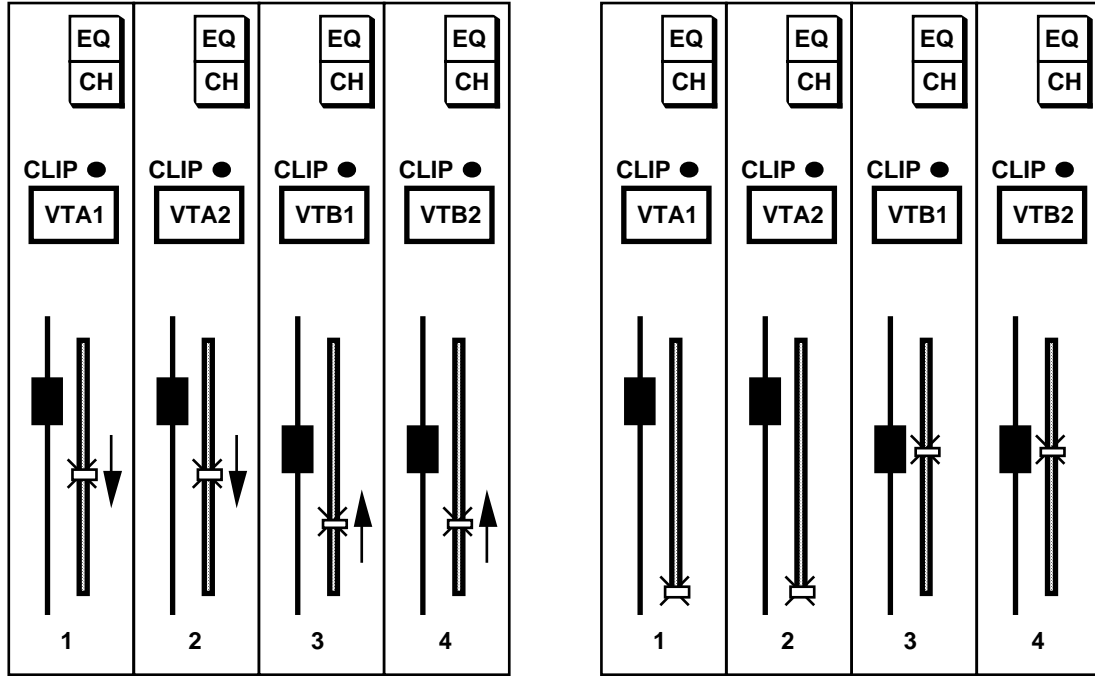
8) Note that during the transition, the **EVENT DURATION** display in the timeline menu will count from 0 to 30 frames.

CHANGING LEVELS

Using the previous example as a basis, let's assume that there are two problems within the transition:

1) The dissolve duration is too short.
2) The BVTR's levels are too low.

Both of these "problems" are simple to correct:

• To change the transition duration, use the editor keyboard to reprogram the edit.
• To change the BVTR levels, select the BVTR from the edit system and reset the fader levels. The **TIMELINE** will update automatically.

NOTE: During a transition, all faders involved in the transition are "locked." When the TIMELINE reaches the END, all faders are reactivated.

Adding A Source

In this example, the AVTR will dissolve to **both** the BVTR and CVTR. Using the previous example as a basis, the steps involved are:

1) In the Arria **EDITOR** menu, disable **SOURCE ASSIGNMENT** by toggling *(F3)*. This will prevent any further changes to the **TIMELINE** by the editing system.

2) Press **BGN** on the FUNCTION SELECT KEYPAD to park the **TIMELINE** at the beginning. Since the previously-programmed **TIMELINE** was a dissolve from the AVTR to the BVTR, the LED displays next to each fader should look like figure A, below.

A   B
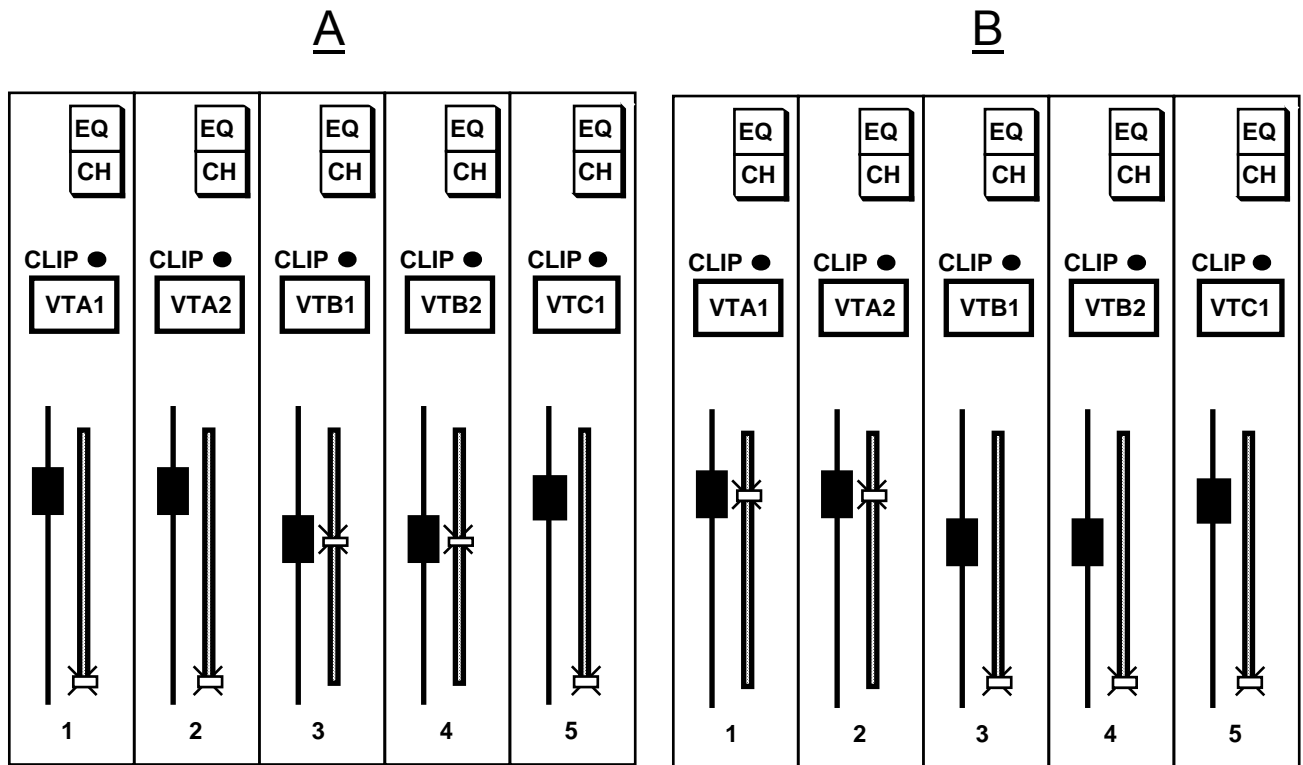
3) Press **END** on the FUNCTION SELECT KEYPAD to park the **TIMELINE** at the end. The LED displays next to each fader should look like figure B, above.

4) "Catch" **FADER 5** by moving the fader to meet the illuminated LED at the bottom of the display. When the LED begins tracking with fader motion, you've "caught" the fader, and levels are controllable.

5) Press **PLAY** for the CVTR on the edit system and set an appropriate level for that machine. Both the BVTR and CVTR may be played to achieve the proper balance. Once levels have been set, the LED displays next to each fader should look something like figure C, below:

C

| EQ | EQ | EQ | EQ | EQ |
| CH | CH | CH | CH | CH |

CLIP ● | CLIP ● | CLIP ● | CLIP ● | CLIP ●

| VTA1 | VTA2 | VTB1 | VTB2 | VTC1 |

| 1 | 2 | 3 | 4 | 5 |

D

| EQ | EQ | EQ | EQ | EQ |
| CH | CH | CH | CH | CH |

CLIP ● | CLIP ● | CLIP ● | CLIP ● | CLIP ●

| VTA1 | VTA2 | VTB1 | VTB2 | VTC1 |

| 1 | 2 | 3 | 4 | 5 |
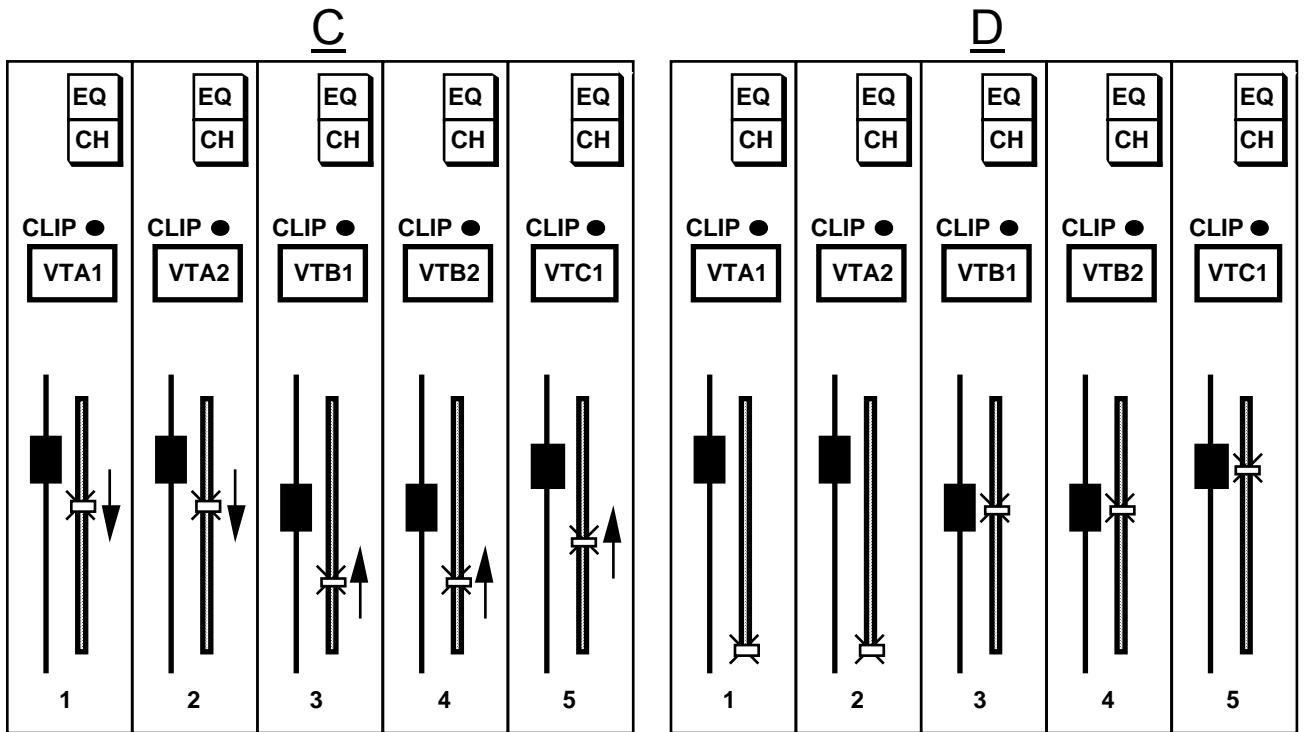
6) Press **BGN** on the FUNCTION SELECT KEYPAD to park the **TIMELINE** at the beginning.

7) Select either **RECORD** or **PREVIEW** on the editing system. At the transition start point, the LED displays next to each fader will react as in figure D, above.

NOTE: SOURCE ASSIGNMENT must be disabled in the Arria EDITOR menu for multiple-VTR transitions.

Creating A Custom Timeline Event

In this example, a stereo music track on the AVTR will be mixed with a mono announce track from the CVTR channel 1. The music, starting at a full level, must dip to an underlevel so that an announce track may be heard over it. However, let's assume that the announce track has two problems:

- There is a great deal of background noise
- We need to pick-up the announcer in mid-sentence – which gives us only 5 frames of "air" to deal with.

An additional spec stipulates that there shouldn't be any gap between when the music hits its underlevel and when the announcer is heard. Due to the high degree of background noise, a direct cut to the announcer is deemed unacceptable.

Here's what needs to be done:

- Start with the music at full level.

- Dip the music to an underlevel over the course of 20 frames.

- 15 frames into the music transition, fade up the announcer over the course of 5 frames.

Here's one way of doing it:

1) Bring all faders to -∞ (this optional step is performed only to "clean-up" the console...allowing the user to concentrate only on the specific faders involved in the **EVENT**).

2) Clear the current **EVENT** by pressing <**EVN**><*(F5)*>.

3) Since the entire **EVENT** will take place over the course of 20 frames, enter that as the **EVENT DURATION** by presetting <ENTER> <2><0> on the NUMERIC KEYPAD, followed by a single press of the **DURATION key** (F8 IN THE TIMELINE MENU) .

4) In the Arria **EDITOR** menu, disable **SOURCE ASSIGNMENT** and **RATE**. This will prevent **TIMELINE** programming by the editing system.

5) Roll the AVTR (music) and set **FADERS 1** and **2** to achieve a "full" level.

6) Press the **END** key to park the **TIMELINE** at the end (20 frames from the beginning).

7) Set the AVTR's faders to achieve an underlevel.

8) Roll the CVTR and set **FADER 5** to achieve a normal speech level.

REFER TO THE DIAGRAM AT THE TOP OF THE NEXT PAGE TO VERIFY YOUR SETUP

BEGINNING OF EVENT   END OF EVENT

EQ **CH** | **EQ** **CH** | **EQ** **CH** | **EQ** **CH** | **EQ** **CH**

CLIP ● **VTA1** | **CLIP** ● **VTA2** | **CLIP** ● **VTB1** | **CLIP** ● **VTB2** | **CLIP** ● **VTC1**

1   2   3   4   5

EQ **CH** | **EQ** **CH** | **EQ** **CH** | **EQ** **CH** | **EQ** **CH**

CLIP ● **VTA1** | **CLIP** ● **VTA2** | **CLIP** ● **VTB1** | **CLIP** ● **VTB2** | **CLIP** ● **VTC1**

1   2   3   4   5

Using the **TIMELINE FADER**, move through the **EVENT**. Notice that all faders are "in motion" from the time the **EVENT** starts, to the time it ends. ***THIS IS NOT WHAT WE WANT TO HAPPEN!*** What has been programmed thus far is a simple crossfade; no different than the previous tutorial example. What we *do* want is a 20 frame transition between two preset AVTR levels, along with a 5 frame fade-up of the CVTR that starts 15 frames into the **EVENT**.

9) Using the **TIMELINE FADER**, place the **TIMELINE CURSOR** 15 frames into the **EVENT.**

10) Press *(F1)* to **INSERT** a **MIDPOINT** at that location.

11) "Catch" **FADER 5** and place the level at the bottom (-∞).

12) Since **FADER 5** is at -∞ at both the **BEGINNING** and **MIDPOINT**, its level will not change until 15 frames into the **EVENT**, which now runs properly.

13) Alterations to levels at the **BEGINNING**, **MIDDLE**, or **END** may be accomplished by parking on one of the three points and changing the fader levels.

Moving a Midpoint

In this example, we'll relocate the **MIDPOINT** from the last example. To move the **MIDPOINT** from 15 to 10 frames from the **BEGINNING**:

▪ Press the EDIT key to access the TIMELINE.

28) Press the PREV AND NEXT keys to park the TIMELINE CURSOR on the MIDPOINT.

29) Using the NUMERIC KEYPAD, enter <1><0>.

30) Press the **MOVE** function key *(F5)* to move the **MIDPOINT**.

Scaling An Entire Event

In this example, we'll change the previous **EVENT's** overall **DURATION** from 20 frames to 30 frames. While this process will alter the time between **MIDPOINTS**, the relative offsets are preserved.

- Press the **EDIT** key on the FUNCTION SELECT KEYPAD to access the **TIMELINE**.

18) Press the **END** key on the FUNCTION SELECT KEYPAD.

19) Using the NUMERIC KEYPAD, type <enter> <3><0>.

20) Press the **DUR** key (F8 in the timeline menu).

Programming a Pause In The Timeline

In this example, we'll alter the previous **EVENT** to include a brief (5 frame) pause in the **PAN** when it reaches the "center."

1) Press the **EDIT** key on the FUNCTION SELECT KEYPAD to access the **TIMELINE**.

2) Using the NUMERIC KEYPAD, <enter> <3><0>.

3) Press the **GOTO** key on the FUNCTION SELECT KEYPAD. This parks this **TIMELINE** at the halfway point.

4) Using the NUMERIC KEYPAD, <enter> <3><5>.

5) Press the **GOTO** key on the FUNCTION SELECT KEYPAD.

6) Press the **INSERT** *(F1)* key on the GRAPHIC DISPLAY.

7) Press the **PREV / NEXT keys** to park the **CURSOR** on the first **MIDPOINT** (at 30 frames).

8) Press the **PREV / NEXT keys** again to park the **CURSOR** on the next **MIDPOINT** (at 35 frames).

9) Press the **COPY** *(F6)* key to **COPY** the first **MIDPOINT's** values to the second **MIDPOINT**.

Since both **MIDPOINTS** contain the same values, the transition will pause for 5 frames when the **TIMELINE** is **RUN**.

Swap Commands From An Edit System

A **SWAP** command from an edit system instructs the mixer to re-map all of the current **RVTR CHANNELS** with respect to all of a particular source VTR's **CHANNELS** . A number of operations are accomplished during a **SWAP:**

• The **CHANNEL NUMBERS** are appropriately reassigned.

• The fader levels of the new source VTR (former **RVTR**) are set to match those of the previous **RVTR**.

• If one or more **CHANNELS** of the original source VTR were set to **FULLTIME LIVE**, all **CHANNELS** of the new source VTR (former **RVTR**) are set to **FTL**.

• All FADERS involved in the **SWAP** will temporarily display the word "SWAP" to alert the user to the change in setup.

SWAP interchanges **CHANNEL NUMBERS**, *not* **CHANNEL LABELS**. Except for the momentary indication of "SWAP" in a FADER's display, none of the FADER **LABELS** will be altered.

RULES FOR SWAPPING

For consistent editor/Arria operations, the following rules must be followed:

• The edit system's Audio Crosspoint Table must contain unique entries (do not assign the same crosspoint number to more than one source).

• The edit system must be capable of downloading its table to the Arria (on GVG *SUPER EDIT* systems, this is accomplished with the keystrokes: <SHIFT>+<RESET>).

• Do not **SWAP** if the **EDITOR INTERFACE** is disabled.

• Any changes to the editor's Audio Crosspoint Table must be followed by a download to the Arria.

• A recall of a new Arria **CONFIGURATION FILE** must be followed by a download of the editor's Audio Crosspoint Table.

A good way to check the coincidence of the editor/Arria table is to view the Arria MONITOR DISPLAY(in the home menu). as each source key is selected on the edit system (ensure the **MONITOR MODE** menu is set to **VTR FOLLOW**). If the proper **LOGICAL NAMES** are displayed, the tables are coincident.

This example illustrates how the mixer behaves during a typical **PREREAD** event, where the **RVTR** dissolves to the **AVTR** in 30 frames.

As discussed in the chapter on the **APV** feature, the Arria can automatically set itself for a **PREREAD** event. However, the operator needs to verify a few items on both the edit system and the Arria to achieve the automation.

EDIT SYSTEM SETUP

The operator must decide which of the available "mark table" sources can be assigned with an audio mixer crosspoint of **20**. Typically, an **AUX** source is used for this purpose. By assigning a **SOURCE** this special crosspoint value, selection of that source on the edit system opens the RVTR's faders.

- For this example, set the **AUX** audio crosspoint to **20**.
- Set-up a **PREREAD** edit that dissolves from **AUX** to the **AVTR** in **30 frames.**

Arria SETUP

For a seamless **PREREAD** match-in, set-up the mixer as follows:

▪ Set the mixer to **Edit Mode** (as opposed to **Live** or **FullTime Live**).
▪ Press the **PREREAD** key.

IMPORTANT

DO NOT USE AUX (OR WHICHEVER EDITOR SOURCE YOU HAVE ASSIGNED WITH AN AUDIO CROSSPOINT OF 20) IN A NORMAL (NON-PREREAD) EDIT. THIS WILL RESULT IN FEEDBACK.

Interfacing With an Editing System

EditWare Super Edit Systems-Version 7.0+ software

The tables below represent the edit screen menus on GVG editing systems running V7.0 or later software. Only the highlighted areas are applicable to Arria operation, and should be set exactly as shown for proper operation.

VTR ASSIGNMENT PAGE

LABEL	REEL	PORT	MODEL	QC	VIDX	AUDX	TYPES AVAILABLE
RVTR	MASTER	01	07	03	008	010	00=BVU8
AVTR	001	02	07	03	002	001	01=BVU9SP
BVTR	002	03	07	03	003	002	02=BETA-SP
CVTR	003	04	02	03	004	003	03=APR5003
DVTR	004	05	02	03	005	004	04=BVH2000
EVTR	005	06	05	03	006	005	05=PCM7030
FVTR	006	07		03	007	006	06=BVH2500
AUX	BARS				018	009	07=DVR20
BLK	BLACK				001	000	08=AU660
							09=AJD132
PVSW	E-E	PORT					
VIDSW	GVG3000	PORT	09	38.4	ODD		
MIXER	ZAXCOM	PORT	08	38.4	ODD		

INITIALIZATION PAGE #4 (may look slightly different, depending on software level)

INITIALIZATION PAGE #2	
31 LINEAR JOG	46 N/A
32 LOCK JOG ON	47 PRNTR/COM BAUD=1200
33 N/A	48 N/A
34 PRINT OFF	49 N/A
35 QUEST RECHECK ON	50 SLAVE STEAL=ASK
36 OPEN END PROTECT ON	51 N/A
37 EDIT TIMER ON	52 N/A
38 SOFT LOAD OFF	53 N/A
39 LEARN EMEM	54 FILM MODE
40 MONITOR ON SWR OFF	55 REC ABORT ON
41 N/A	56 PREREAD AUTO-OFF=OFF
42 N/A	57 PEGS AUTO-OFF=ON
43 BVH SYNC HEAD ON	58 AUTO ARC=OFF
44 MIXER AUDIO PVW	59
45 AMIX SWAP ON	60

CAUTION:

SETTING THE EDITOR FOR "MIXER OFF" (available on most systems as <SHIFT> <SWR OFF>) WILL DISABLE *ALL* CONTROL OF THE Arria, INCLUDING PREVIEW SWITCHING.

The AXIAL 3000, 2020 and 2010 editing systems are supplied with a ZAXCOM Arria software driver. Additionally, the user may customize the audio mixer driver to suit the installation. Please consult the Axial editing system manual for mixer configuration instructions.

Below is an Arria/Axial feature list, as of 3/1/99:

5) Automatic download of crosspoint table from Axial when exiting Assign Manager.

6) User menu control of APV enables

7) User menu control of APV levels.

8) User menu control of Monitor Level.

9) User menu selection of Monitor Presets.

10) User menu control of Monitor Preset levels.

11) User menu control of Delay.

12) User menu control of Fader Levels.

13) User menu selection of Unity.

14) User menu selection of Live and Edit modes.

Please refer to notes within the Arria specfile for details on the above features.

Please consult CMX for the latest software and instructions on interfacing to the Arria.

SONY Editing Systems

Sony 9000/9100 edit systems communicate with Arria via an Intelligent Device Controller (IDC), supplied with the edit system. For comprehensive control of Arria, use Sony Audio Driver **BZE-9611 V2.02x5** or later. Among other functionality, use of this software permits upload/download of mixer **EVENTS** to/from the EDL.

To set up the IDC:

On the Sony keyboard:

- Press   <**SHIFT**><**SETUP**> for the IDC
- Press   **F8** (entry)
- Press   **F6** (Serial I/F Mixer)

Now enter the following data:

Data-1	00h
Data-2	00h
Data-3	0Bh
Data-4	63h
Data-5	08h
Data-6	00h
Data-7	00h
Data-8	00h

Press **RETURN**

Troubleshooting

SYMPTOM	PROBABLE CAUSE	WHAT TO DO
No audio is audible on monitor speakers	**Apv Channel Enables** are off.	Press *F1-F4* and/or *(F1-F4)* in the **HOME** menu to check-mark the APV channels.
RVTR not audible on monitor speakers	1. **APV** levels set to **OFF** 2. **RVTR** channels not set-up for **PFL**.	1. See above. 2. Go to **Mon Assign** menu and enable **PFL** for all REC VTR channels.
No audio from the RVTR is recorded on RVTR during a PREREAD event	RVTR outputs are not feeding the **MIX BUS(ES)**	Press the **PREREAD** key in the Function Select section. Also, check **PreRead Prefs** menu to ensure that all items are check-marked.
Feedback is recorded on RVTR when in record	RVTR outputs are feeding the **MIX BUS(ES)**	If the **PREREAD** key is illuminated, press it once to tuen it off.
Monitor levels of RVTR are inconsistent from channel to channel	**APV** levels of RVTR not set equally	Adjust **APV** levels to unity.
MONITOR BUS sounds different than **MIX BUS**	**Monitor** and **Mix Assign** menu do not coincide in BUS MENU.	1. Possible under normal operation 2. Reassign **Mon Assign** menu to match **Mix Assign** menu. 3) Consider this: In the second level of the **Monitor Menu**, set **Source Mode** to **Pan2Ch**.
Faders do not respond in edit mode	Timeline currently inbetween keyframes.	1. Press **BEGIN** to go to the beginning of the timeline. 2. **INSERT** a point on the Timeline.
Don't hear buses 3 and 4 in a 2-speaker installation	Mixer not setup for 2-channel operation	In the second level of the **Monitor Menu**, set **Source Mode** to **Pan2Ch.**

SYMPTOM	PROBABLE CAUSE	WHAT TO DO
No output from a **MIX BUS**, even with a fader above -∞	1. Electrical level of fader is at -∞.	1. "Catch" the fader's LED display and reset the level.
MIX BUSES have low or inconsistent levels	1. **MIX BUSSES** not set to UNITY.	1. Go to the **Mix Assign** menu and set all **MIX BUSSES** to 0.0dB
Analog audio is distorted	Input **GAIN** is set too high	Lower the analog input **GAIN** (accessed in the **SETUP** menu)
Editing system does not select the correct sources.	Editor's Audio Crosspoint Table is not coincident with the Arria crosspoint table.	1. Perform a download of the crosspoint table to the Arria or 2. Select **TABLE INIT** from the **SETUP** menu, and reset the editor to conform to the "standard setup."
No editor control of **TIMELINE**	1. **TIMELINE** not parked at the beginning. 2. Components of Arria **EDITOR** menu disabled. 3. Mixer interface not enabled on edit system.	1. Press **BEGIN** 2. Go to the Arria **EDITOR** menu and enable **SOURCE, START,** and **DURATION** as required. 3. Enable interface

Glossary

ATTACK: The length of time it takes for a compressor, limiter, or gating device to respond to the input signal.

BLACK BURST: A composite video signal often used as a timing reference for professional video and audio equipment. Also called **BLACK**.

BOUNCING TRACKS: Transferring two or more previously recorded tape or disk tracks to a single track, thus allowing re-recording on the previously used tracks.

BREATHING: An audible rising and falling of objectionable background noise that may occur when using a compressor. Also called **PUMPING**.

BUS, F/X SEND: On the Arria, refers to the two mixing networks available for feeding external signal processing devices.

BUS, MIX: On the Arria, refers to the mixing network available for feeding VTRs, ATRs, DAT, etc. Also referred to as a **PROGRAM BUS**.

BUS, MONITOR: On the Arria, refers to the mixing network available for feeding the edit suite's speaker system.

BUS: A mixing network that combines the outputs of other channels. The Arria has four mix buses, four monitor buses, and two FX send buses.

CANCELLATION: The severe attenuation that occurs when two identical out-of-phase signals are combined. Often remedied with the Arria phase inversion feature.

CHANNEL: A single, complete signal path throughout the mixer.

COMPRESSOR: A device that reduces a signal's output level in relation to its input level.

COMPRESSION RATIO: The ratio of the input and output signals in a compressor.

COMPRESSOR THRESHOLD: See **Threshold, Compressor**.

CONFIG: A file that contains setup information for the Arria.

DECIBEL (dB): A unit of audio level.

EDIT MODE: A mode on the Arria where **TIMELINE** events are created, edited, stored, recalled, and run.

EQUALIZER: A device that can boost, attenuate, or filter the frequency response of a sound source.

EQUALIZER, PEAKING: A device that supplies a peak amount of boost or attenuation at the turnover frequency, and to a lesser degree at the frequencies above and below the turnover frequency.

EQUALIZER, SHELVING: A device that supplies a constant amount of boost or attenuation at all frequencies beyond the equalizer's turnover frequency.

EVENT: On the Arria, refers to the contents of a **TIMELINE**.

F/X SEND BUS: See **Bus, F/X Send**

FILTER, HIGH CUT: A filter that attenuates high frequencies, while passing those below a specified frequency.

FILTER, LOW CUT: A filter that attenuates low frequencies, while passing those above a specified frequency.

FILTER, NOTCH: A filter capable of attenuating an extremely narrow band of frequencies.

FULLTIME LIVE (FTL): On the Arria, refers to a mode of operation available for the individual channels, forcing them to **LIVE** mode at all times. FTL disables all editor and **TIMELINE** control of the selected channel.

GATE: An expander with a threshold that is set to reduce or eliminate unwanted low-level sounds, such as room ambience, rumble, and leakage, without effecting the primary audio source.

GROUP MASTER: On the Arria, refers to the hardware fader that controls a subset of channels. Group Masters are labeled: MST1, MST2, etc.

GROUP: On the Arria, refers to a subset of channels that are controlled by a single hardware fader.

HARD WIRED: Description of components that are directly wired to each other without intermediate interconnections.

HEADROOM: 1) The difference in level between the loudest sound and the average loudness of other sounds in a recording. 2) The amount of increase in loudness level that a tape, amplifier, or other audio device can take, above working level, before distortion occurs.

HERTZ (Hz): Unit of measurement of frequency, numerically equal to cycles per second.

HI CUT FILTER: See **Filter, High Cut**

LED: Light Emitting Diode, often used as an indicator.

LIMITER THRESHOLD: See **Threshold, Limiter**

LIMITER: A compressor that maintains a constant output level, regardless of its input level. Generally, at ratios above 10:1, a compressor acts as a limiter.

LIP FLAP: Lip movement in the video when there is no sound in the audio.

LIVE: A mode on the Arria where the entire mixer is available for on-the-fly level adjustment.

LOGICAL NAME: The standard names assigned to sources by an editing system. Examples are: AVTR, BVTR, CVTR, RVTR, etc. Logical Names are those that are engraved on an edit system's keycaps.

LOW CUT FILTER: See **Filter, Low Cut**

MILLISECOND (ms): One thousandth of a second.

MIX BUS: See **Bus, Mix**

MONITOR BUS: See **Bus, Mon**

OCTAVE: The interval between two sounds that have a frequency ratio of 2 to 1.

OSCILLATOR: A device that generates pure tones in the form of sine waves.

PAN: 1) A menu on the Arria that facilitates the routing of sources to the Mix Buses.

   2) Varying the proportion of signal level routed to two or more locations.

PEAKING EQUALIZER: See **Equalizer, Peaking**

PHASE: The time relationship between two or more signals. When the relationship is coincident, the sources are considered *in phase,* and their amplitudes are additive. When the time relationship is not coincident, the signals are *out of phase* and their amplitudes are subtractive. The Arria has a *phase inversion* feature to correct this condition.

PHASING: An effect created by splitting a signal in half and time delaying one of them.

POSTFADER: Refers to an altered level picked-off just past the mixing stage in a mixer.

PREFADER: Refers to an unaltered level picked-off prior to the mixing stage in a mixer.

PREREAD: A feature on some digital recording devices that allows a single device to simultaneously playback and record. Also known as **Read Before Write**, or **Read Modified Write.**

PUMPING: An audible rising and falling of objectionable background noise that may occur when using a compressor. Also called **BREATHING**.

Q: In a bandpass equalizer, the ratio of the center frequency to bandwidth. Simply put: the range of frequencies an equalizer will affect.

RELEASE TIME: The time it takes a compressor, limiter, or gate to return to its normal level after the input signal has been attenuated or withdrawn.

SHELVING EQUALIZER: See **Equalizer, Shelving**

SHELVING EQUALIZER: See **Equalizer, Shelving**

SLATE: On the Arria, refers to an operational feature that automatically switches between three tone frequencies at predetermined times. Used at the head of a recording for later playback calibration.

SOLO: On the Arria, refers to monitoring a single audio source.

THRESHOLD, COMPRESSOR: The level at which a compressor begins functioning.

THRESHOLD, GATE: The level at which a gate begins functioning.

THRESHOLD, LIMITER: The level above which a limiter begins functioning.

TIMELINE: The method of plotting changes in the state of the mixer as a function of time.

TURNOVER FREQUENCY: 1) In a shelving equalizer, the frequency at which the equalization curve begins to flatten-out, or shelve. 2) In a peaking equalizer, the very peak of the equalization curve, typically bell-shaped.

UNITY: Output gain equal to input level.