Audicy Software Version 3.0
Mini Manual

Welcome to Version 3.0

Audicy Version 3.0 upgrades your Audicy's effects capability with five new effects classes, gives you new power in customizing user presets, and comes with many other new and useful features.

Highlights of Version 3.0 include:

- Support for 5 new effects classes: includes high quality Professional Broadcast Pro Digital Delay, Chorus and Flange effects; a "Stereo Toolkit" which includes an advanced split-band "vocal eliminator" as well as a mono to stereo synthesizer; and a new combination Compressor/EQ in one combined effect. Each new class comes with a collection of up to 20 powerful factory presets specially tuned for broadcast use.

- New effects User Preset controls: allows you to more easily create, store and manage customized effects presets of your own. Up to 20 custom presets can be created for each class of effect (e.g., 20 different user EQs, 20 different user Compressors, etc.). Custom presets can be moved between systems by simply exporting them as part of a production, allowing users to share their special preset tunings with users in other studios and facilities.

- New onscreen assistance for using effects: All factory presets now have a "Notes" field that tells you what the effect does or is best used for. For User Presets, the "Notes" field can be edited.

- Onscreen block diagrams for all effects appear when you advance to a knob adjust screen. These block diagrams give the user a visual representation of each effect type's structure (e.g., Compressor, Reverb, Delay).

- Enhanced fast wind: helps speed productions. Press *Rewind* once, and the transport starts to wind up to speed as it does now. But if you press it a second time, your transport instantly assumes full rewind speed without going through a "ramp up." *Fast Forward* works the same way. This feature will prove a valuable time-saver.

- Production Import/Export: Allows you to package an entire multitrack production as a single file, so it can be sent by email or FTP to other Audicy systems and networks, or archived on your network.

- More secure handling of network and secondary drive failures: reduces the risks of losing audio when a network connection is unexpectedly broken. If you are shadowing to a network drive and the network goes offline, our new software allows you to convert your project to a temporary production so you can continue working, even though your selected shadowed drive has gone offline. This added measure of security takes advantage of Audicy's unique RAM architecture to minimize risk in networked installations.

- New Edit Locates menu pick and updated Name And Edit Audicy Locate Points screen simplify and speed up the naming and deleting of Locate Points.

- Support for SCSI CD-ROM drives. Allows you to attach a SCSI CD-ROM drive to your Audicy, useful for pulling .WAV files off a CD, while keeping everything in the digital domain, or for importing condensed production (.PRD) files.

- Enhanced About screen features multiple pages to provide a cleaner, more comprehensive description of your system. Includes a "What's New" description of the software running on your system, as well as separate pages for Audicy and System configuration information.

New Audicy DSP Effects

New Effects

Audicy V3.0 effectively expands your Audicy FX engine, adding 5 new powerful effects categories:

- Broadcast Pro Digital Delay

- Broadcast Pro Chorus

- Broadcast Pro Flange

- Orban Stereo Toolkit (vocal eliminator, stereo synthesizer)

- Compressor/EQ (combination Compressor/Equalizer in one piece of DSP)

All the new effects use 2 General and 2 Echo Processors (exactly like the Orban Mini Reverb), except for the Compressor/EQ which uses 2 General Processors for the mono version, and 3 General Processors for the stereo version. (For a full discussion on Processor Resources, refer to the Audicy Operating Manual.) Please note that given the increased demands on processing power that these new effects require, some users may wish to upgrade their systems with an FX Turbo Rack (part # AD/FX/TURBO), in order to expand the number of effects classes that can be run simultaneously. The FX Turbo Rack is a hardware card that triples the amount of DSP power available to your Audicy's effects system.

V3.0 does not change the sound of any of your existing factory or user presets. The steps for patching in, selecting, and tuning an effect are the same as they've always been.

Listen To a New Effect

A) Press one of the *Select* buttons — for an individual channel, the stereo submix bus, or the Audicy's main outputs — to go to the Effects Patchbay.

B) Use the *left* or *right* arrow button to choose one of the new effect types for that channel: Broadcast Pro Digital Delay, Broadcast Pro Chorus, Broadcast Pro Flange, Orban Stereo Toolkit, or Compressor/EQ.

If you want an identical effect on both channels of a stereo pair, choose Link Tracks and press *Enter*. Then choose the type of effect.

Note: Orban Stereo Toolkit is only available for linked stereo tracks, the submix and the main output patch points, since it requires a 2-channel input to operate.

C) Press the *down* arrow once to go to the preset selector, and then use the *left* or *right* arrow to choose an appropriate preset for the effect.

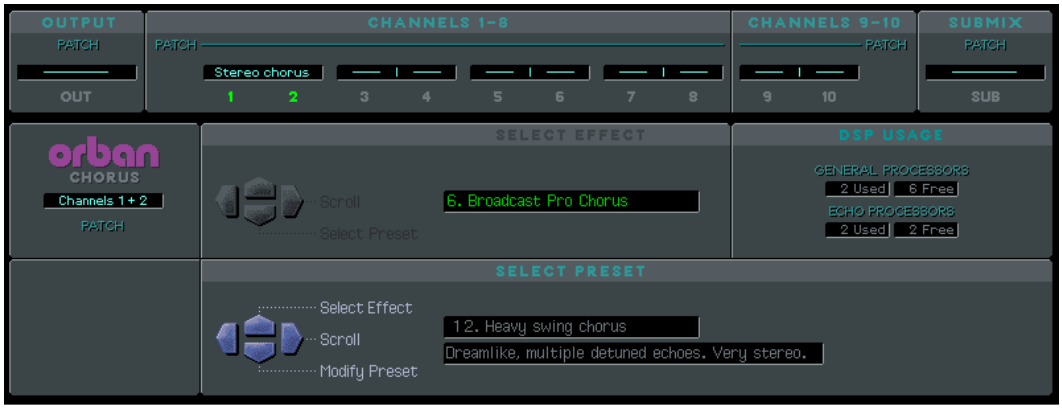


Figure 1: Broadcast Pro Chorus Preset Selector Screen

You can play tracks while you're selecting presets, to audibly preview the preset.

D) If you're happy with the sound, press *Enter* to install the effect, or press the flashing *Select* button to save and exit the Patchbay.

If you want to fine-tune the effect's settings, press the *down* arrow from the preset selector to go to the Effects Knob Panel. Refer to "Customizing User Presets" below for new User Preset features.

Customizing User Presets

V3.0 allows you to create up to 20 custom presets for each effect class. There's a new Save Preset screen that allows you to save your custom settings to a specified user preset location, name it, and include a description of the setting.

The steps for modifying an effect are the same as they've always been. But if you want to create multiple user effects, use any user preset in a different local production or on a different machine, or if you just want to create alternate choices within your current production, you'll want to use the new Save Preset feature as soon as possible.

Name and Save a User Preset

A) Patch in and "turn on" an effect: Complete steps A - C, page 1-3.

B) To fine-tune the effect's settings, press the *down* arrow from the preset selector to go to the Effects Knob Panel. You'll see a representation of a rack-mount effect, with a number over each effect knob. Turn the matching *Parameter Control* on the console to adjust the effect.

C) After you've fine-tuned an effect the way you want it, press the *down* arrow to open the new Save Preset form.

Figure 2: Save Preset Form

D) Select a user preset.

To create a new User Preset, choose the default choice, “User - custom,” or to save to an existing preset location (overwriting an existing user preset), use your *left* or *right* arrows to advance through the list.

E) Press the *down* arrow or *Enter* to move to the Preset name field and type in a custom name (up to 19 characters long).

F) Press the *down* arrow or *Enter* to move to the Notes field and type in a custom note or description of the effect (up to 34 characters).

G) Press the *down* arrow or *Enter* to move to the Save new presets? field.

H) Press *Enter* on Yes, save preset to complete the process. This will return you to the Effects Knob Panel.

I) Press *Enter* again to return to the Select Preset panel, or press the flashing select button to save and exit the patch bay.

Replace an Existing User Preset

Use the same steps as used with naming and saving a preset above, except: for step D use the *left* and *right* arrow keys to toggle to an existing User Preset (U1, U2, etc.); and for step H, you’ll be pressing *Enter* on Yes, replace preset.

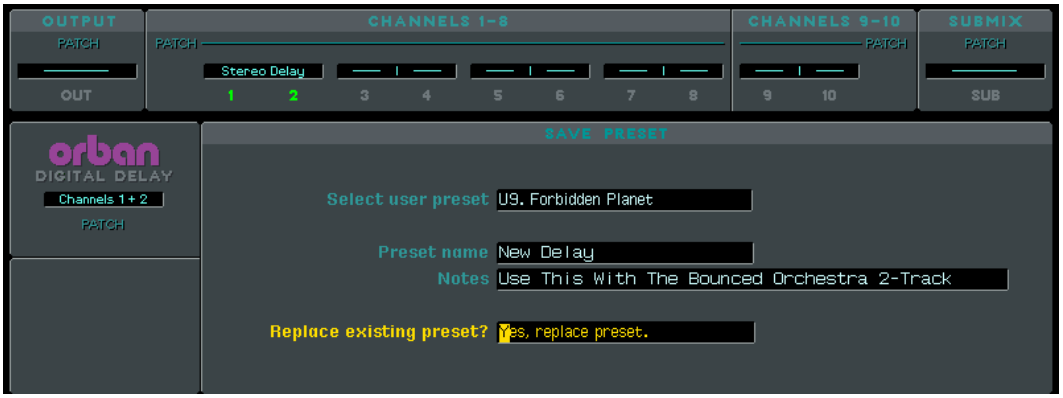


Figure 3: Replacing a Preset

Note: If no User Presets currently exist, you will only have the “User - Custom” choice available.

Delete a User Preset

To delete a preset, select an existing user preset, then advance to the Replace existing preset save confirmation field. Arrow to the No, erase preset choice, then press *Enter.*

Using User Presets in Different Audicys

User presets can be moved from one system to another by simply sharing productions with custom effects between systems. Just start a production in one

system, load in the custom presets you want to share into a mono or stereo patch point, then copy or move that production to another Audicy (using Networking, Jaz or DAT archiving to transfer the production). When you open the production on a different Audicy, your custom preset's values will still be patched in, just like you left it. Note that you can even create an empty production with no Audio in it, and just use this as a template for transporting presets.

Note however, that the name and description of a custom preset, and the user-register it occupies belongs to each specific Audicy workstation, and will not move automatically from machine to machine. This is because 2 different machines could each have a user preset with the same name, but with very different knob values. For example, 2 different systems could have a Chorus preset labeled U1 "Big Chorus." If we allowed the name information to automatically move when a production from Audicy 1 was opened on Audicy 2, we would risk overwriting existing user presets on system 2!

To safeguard against this, when you open a production containing a user preset created on a different machine, it will automatically occupy the "custom" preset register. To save this preset locally, simply enter the Save Preset form, and supply a name, description, and select register U1 through U20.

New Onscreen Effects Information

Effects Notes

Factory and User Presets now have a "Notes" field in the Select Preset screen to better describe each preset effect. For custom presets, users can edit the "Notes" field from the Save Preset form. Use the "Notes" field to enter a unique description of how to best use your effect, or what your preset sounds like.

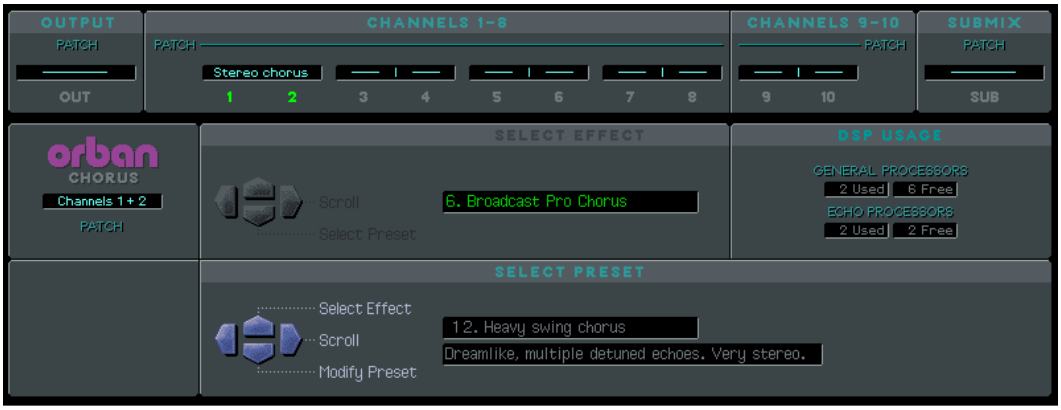


Figure 4: As you scroll through the list of presets, the notes field updates with a description of the current selection.

FX Block Diagrams

For each effect knob screen, we've designed a set of block diagrams to make changing effects even more intuitive. Each diagram displays the signal flow path for the currently selected effect's controls. Effects which have more than one page of knobs have a unique block diagram specific to each page (use the *Page Up/Down* arrows to advance to the other pages, when indicated on screen). The only FX screen which doesn't have a block diagram is the EQ screen which has an interactive graphic EQ display instead. Here are a few examples:

Figure 5: Lexicon Small Space Reverb Knob Screen (Page 1) with New Block Diagram

Figure 6: Compressor Knob Screen (Page 1) with New Block Diagram

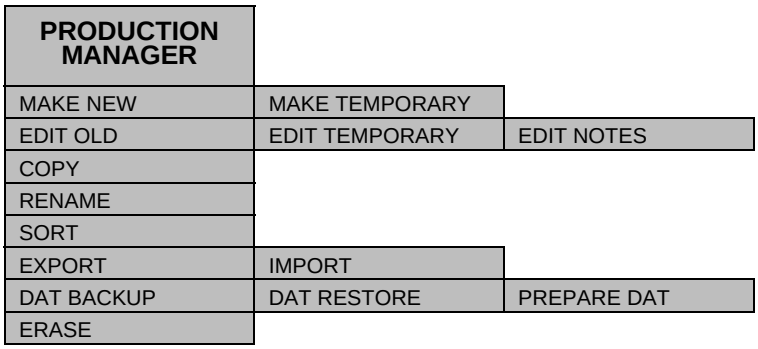
New Enhanced Fast Wind

We've enhanced rewind and fast forward button behavior to help speed up your operations. Press *Rewind* once, and the transport starts to wind up to speed as you are used to. But if you press it a second time, your transport instantly assumes full rewind speed without going through a "ramp up." *Fast Forward* works the same way in the other direction. When you want to rapidly fastwind, get into the habit of giving the *Fast Forward* or *Rewind* button a quick "double tap." This feature will prove a valuable time-saver once you get it in your "muscle memory."

Production Import & Export

This important new feature allows you to bundle or "zip" an entire production into a single file, which can then be sent via email or FTP to other Audicys or Audicy networks. This makes distribution and archiving of a complete Audicy production easier and more flexible, allowing users in different facilities to share projects, or customize productions created in one market for use in another.

To use this function, select Production: Export or Import in the Job Controller screen (See new Job Controller menu layout directly below). Familiar production selection screens will appear. Export allows you to select a production, and condense it as a single .PRD[1] file to a target drive. Import allows you to select a .PRD file from a source drive, and expand it as a full production to a destination drive.



Productions are actually collections of directories and files. By packaging a production into a single file, problems associated with condensing or expanding directory trees and file structures are hidden from the user. The process used is similar to the popular "Zip" archiving utility, except that this process does not data compress individual files, and therefore does not require a lot of CPU overhead.[2]

Productions which are condensed into a single .PRD file can be quite large. Before condensing, users may wish to cut out silence, bad takes or other unnecessary audio, since the size of the production will affect how long it takes to send it. As a benchmark, a :30 production, edited at 32kHz using 4 track minutes of source audio will condense to about a 16 Mbyte file. Users should be aware that some email systems routinely reject file attachments larger than 2 Mbytes. Note also that due to RAM record memory variations between systems, productions from systems with large memory complements should be created with production record limiting enabled, so that they can be opened on systems with

[1] You guessed it. .PRD stands for "production."
[2] Import/Export uses the well-documented Unix AR archive format.

smaller record memory compliments. For a complete discussion of Recording Limits, refer to the Job Controller chapter of the Audicy manual.

This feature is most useful for sites and station groups with Audicy networks. Such facilities can easily create a “drop box” directory on the network, where condensed productions can be sent to and pulled from, or automatically distributed to a mail list on a corporate wide area network. Users can also export a condensed production to a Jaz disk, then move that disk to a desktop computer, where .PRD production files can be sent as email attachments to users in other locations.

Another network related application for this feature facilitates easier production archiving on network backup systems. For example, condensed productions exported to the network can be backed up on the server’s backup system, whether that system is a tape based or a CD Recorder. Stored as single files, productions can be restored and imported at a later date. Users who burn production files to CD can also import those .PRD files directly from a CD by connecting a SCSI CD ROM drive to their Audicy system.

Facilities running Audicy as a stand alone workstation will have little need for this feature set, since its primary advantage is as a distribution and network archiving tool.

Edit Locate Menu Choice

V3.0 provides a new Edit Locates submenu choice, located under the Patch Bay menu. While this form existed in previous Audicy software versions, the only way to get to it was to press the shortcut key-combo of *Shift+Set*, so many users never knew how to erase or change locate points once they had set them.

Press *Enter* on this menu to open the new Name And Edit Audicy Locate Points screen. We’ve updated this screen to make navigation more intuitive.

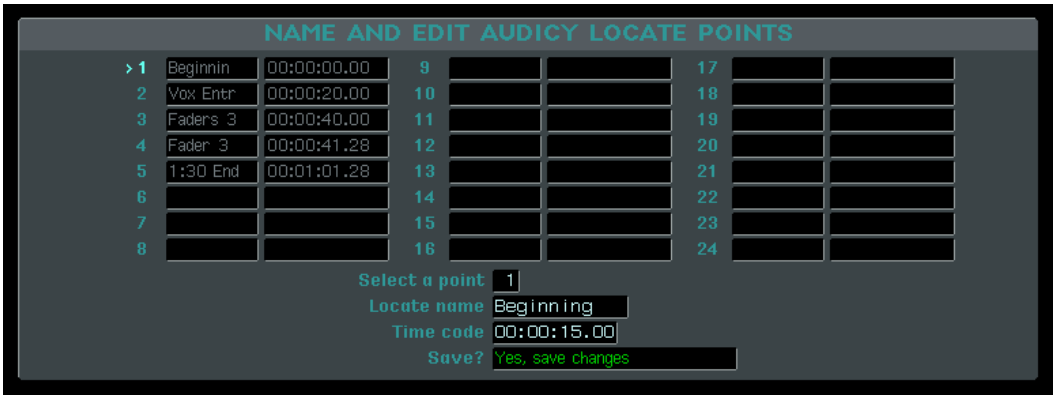


Figure 7: Name and Edit Audicy Locate Points Screen

You can use Edit Locate to create or change either locate point positions or names. You can also delete one, or all of your locate points from this screen. For

Video/SMPTE users, a parallel menu choice exists titled “VTR locates” next to the Chase Setup menu selection. Please refer to the Timecode chapter of the full Audicy manual for more information on this feature.

Miscellaneous

Improved Handling For Network/Secondary Drive Failures

V3.0 reduces the risks of losing audio when a network connection is unexpectedly broken or you lose a secondary drive. This added measure of security takes advantage of Audicy’s unique RAM architecture to minimize risk in networked installations. For example, if you are shadowing to a network drive and the network goes offline, our new software allows you to convert your project to a temporary production so you can continue working, even though your selected shadowed drive has gone down. When you’re finishing working, download your audio to a two-track master. If you need the material for a future production, just save pairs of tracks as .WAV sounds or Audicy library sounds. And, if you have any special custom effects settings, take advantage of our new user preset controls. In some cases, if the drive recovers or the network is restored while you are still working in this temporary mode, you will be able to re-enable shadowing to that drive, saving all changes.

Patch Bay Menu Changes

When we added the Edit Locates menu choice (see discussion above), we re-organized the layout of the Patch Bay submenu choices. The Read and Save Patch menus are now on the EFX Patch row with the other EFX choices; the SMPTE Timecode option picks have moved to the bottom. Here’s the new layout:

			PATCH BAY	
		AUTO A/B	RECORD MODE	
READ PATCH	SAVE PATCH	EFX MUTE	EFX PATCH	PHASE INVERT
SPDIF IN	AES/EBU IN	ANALOG IN	IO SETUP	
		MAP TRACKS	NAME TRACKS	
			EDIT LOCATES	
	VTR SETUP	MC SETUP	CHASE SETUP	VTR LOCATES

While we were designing this menu, we also took the opportunity to remove two redundant submenu choices: Patchbay: Save Default and Read Default. These picks have been removed because their functionality moved elsewhere in previous software. Patch Bay: Save Default and Read Default originally functioned to establish default Patch Bay settings (like IO Setup, Chase Setup, Scrub parameters, etc.) for all new productions. If you want to create default settings for any of these

features, refer to the appropriate submenu choice, change settings as required, and choose Save my defaults from the Defaults? field from each specific form.

SCSI CD-ROM Support

V3.0 provides support for SCSI CD-ROM drives, allowing you to import linear .WAV files[3] or condensed production (.PRD) files directly from a data CD. Once a SCSI CD device is installed in your system, it will show up in the list of available drives, and you will be able to pull Wave files off a CD, just as you would from a Jaz, Network, or floppy drive, while keeping audio in the digital domain. Note that many commercial production packages from providers such as TM Century offer their libraries on data CD, in addition to audio CD.

Figure 8: Loading a .WAV File from a TM Century Production Library CD-ROM

Load times are largely hardware-dependent, and will be based on the speed of your CD device, as well as on the type of SCSI controller in your Audicy. Please note that if a .WAV file you are importing needs sample rate conversion, (e.g., if you are importing a 44.1 Wave file into a 32kHz production), load times may be longer, and the speed of this process will depend on the speed of your system's motherboard processor (CPU).

[3] Audicy CD ROM support does not support importing MPEG or other compressed Wave files.

Users who use the new Production Export feature to condense productions to a single file may then burn these files to CD using a CD Recorder on their Audicy server, or on another computer. .PRD files residing on CDs may then be imported directly from a SCSI CD drive on their Audicy to a destination drive, providing you new options for production backup and restoration.

While Orban does not supply SCSI CD ROM drives at this time, users who are interested in this feature set are welcome to install their own. Users should purchase a reputable brand of SCSI CD drive (IDE drives are not supported), and refer installation to qualified service personnel. Careful attention must be paid to SCSI termination and SCSI ID issues. Note that we recommend using SCSI ID#2 for CD drives. Other than installing Audicy V3.0, no special software is required. Audicy V3.0 installs the MSCDEX driver in all configurations, so once a CD drive is recognized at a hardware level, it is ready to operate in Audicy software. Since Orban cannot support hardware which we have neither qualified nor installed, the user assumes all risks associated with altering their system’s configuration.

Instructions for Specific Effects

Compressor/EQ Settings

When you enter the Knob Level for a Compressor/EQ, a panel like the following appears:

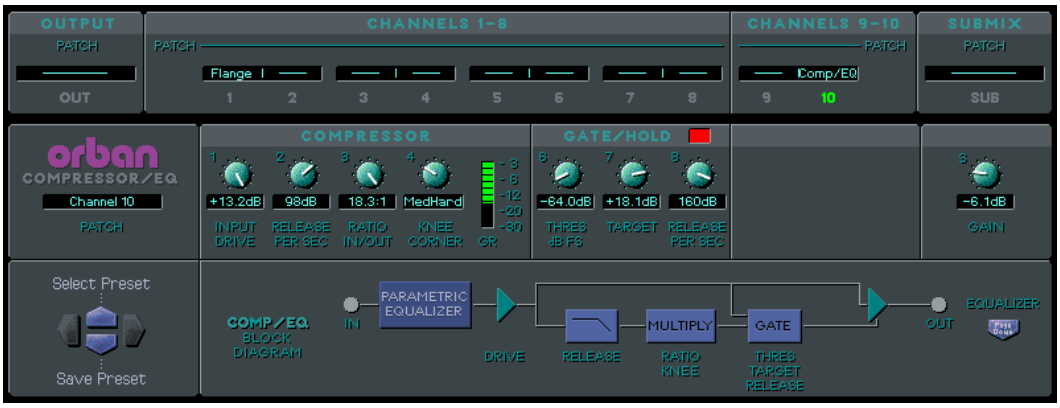


Figure 9: Compressor/EQ Knob Level

Knob functions are described below.

The Compressor page includes a block diagram of the signal flow path. The EQ page has an EQ graph. Use the *Page Up/Down* arrows to toggle between them.

Compressor Section

Like the Compressor settings in the Audicy's Compressor FX, the compressor is derived from Orban's sophisticated OPTIMOD digital processor line:

Input Drive

Input Drive sets the compressor's input sensitivity.

Release Per Sec

Release Per Second sets how quickly the level returns to normal after a peak.

Ratio In/Out

Ratio In/Out sets how much the output volume will vary; higher settings reduce output volume, producing a more compressed sound.

Knee Corner

Knee Corner sets how subtly compression starts.

GR

This indicator lights up when the gate is activated.

Thres dBFS

Gate Threshold dBFS sets the level below which the gain reduction changes to a constant 'target gain' (to prevent ‘breathing’).

Target

Gate Target Out dB adjusts the constant gain reduction when the gate is activated.

Release Per Sec

Gate Release Per Second sets how quickly the gain reduction changes to the constant value when the gate activates.

Gain

Gain sets output gain.

> The same Gain control knob appears on both the Compressor and the Equalizer pages. Turning the knob on either page will affect the overall gain of the processor.

Equalizer Section

The knob functions are self-explanatory.

A graph of the equalization curve also appears in the lower half of Audicy’s screen. This graph updates whenever you change a knob setting.

You can adjust the equalizer by ear (while playing or looping audio through the affected track), by checking the panel’s numbers, or by looking at the graph.

When the Low or High Shelves are set for gain or moderate loss, they act as true shelving equalizers and “level off” beyond their frequency settings. When they’re set for maximum loss, they act as a gentle (6 dB/octave) filter.

The shelves and midbands can overlap, creating interesting interactions. Check the response graph to see what’s really going on.

Dips with very high Q are essentially inaudible — but are sharp enough to act as notch filters for hum, noise, or sibilance.

The best way to learn the effects of these controls is to install a preset, listen to it carefully, and then move a single control to its minimum, middle, and maximum position while listening. Do this for just one knob at a time. If you get lost, press *Undo* to restore the preset’s settings.

Tips For Using The Compressor/EQ

- The factory presets are designed to work with medium-to-loud signals on the original tracks. If you don’t hear as much processing as you’d

like, raise the Compressor section's Input Drive or use tracks recorded at a higher level[4].

- Some factory presets (designated "Male" and "Female") are designed to be patched into individual channels of unprocessed voice. For best results, fine-tune them for the way you record voice tracks. You can save a slightly different version for each of the announcers you frequently use.

- If you have two different announcers on a pair of adjacent tracks and want to process both of them, assign a separate Compressor/Eq to each. Don't link them as a stereo pair: this will limit your ability to fine tune for each voice, and may cause interaction in the compressor.

- Some factory presets (designated "Mix") are designed to be used with completed voice/music mixes.

  If you typically mix by Bouncing and send the finished mix electronically as a .WAV or Cart file, assign the effect to the Output patch point *before* you mix. The tracks will include the same processing you hear through Audicy's output. Temporarily bypass Audicy effects when you play back those mixed tracks[5], or else the signal will be processed twice.

  If you typically mix by Bouncing to Audicy tracks and then dub the mixed tracks into a cart system or DAT or CD recorder in real time, you may prefer to assign the Comp/Eq to the mixed tracks. This lets you fine-tune the effect before you dub, but will prevent you from hearing the processing while you mix.

  If you typically mix by playing back all of Audicy's tracks into a separate recorder, assign the effect to the Output patch point.

- Despite the Compressor/Equalizer name, the signal is equalized before it's compressed. It's usually a good idea to fine-tune the compressor settings after making any major changes in the equalizer.

- When you're building original presets from scratch, turn the Compressor's Release and Ratio knobs all the way down — effectively removing the compressor from the circuit — and adjust the equalizer first. Then adjust the compressor.

---

[4] You can raise the level of an existing track by applying a +12 dB boost in the effects patchbay, and then bouncing the track to itself. Keep an eye on Audicy's Main output meter while you do — you might need to pull down the track's fader to prevent overloads.

[5] To bypass all Audicy effects with a single keystroke, press *Shift+Mute*. Press the combination again to restore the effects.

- Of course, all the tips for the separate Equalizer and Compressor effects, described earlier in this chapter, also apply.

Broadcast Pro Chorus Settings

When you enter the Knob Level for the Broadcast Pro Chorus, a panel like the following appears:

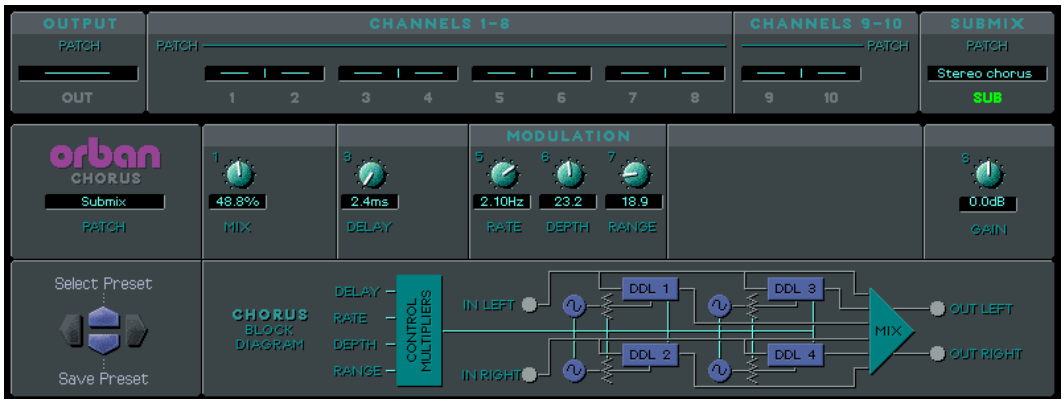


Figure 10: Broadcast Pro Chorus Knob Level

The Pro Chorus uses four separate delay lines, each of whose length is modulated by a separate low-frequency oscillator (LFO). Sophisticated math processors keep the delays in sync with each other. Its circuit looks like the figure below; a similar diagram appears on the lower half of the Knob Level screen, as shown above.

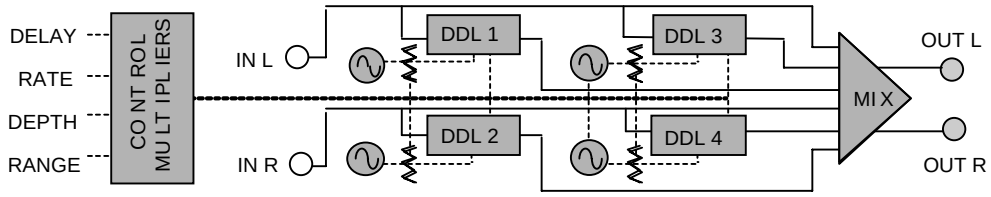


Figure 11: Chorus Block Diagram. The solid lines are audio; the dotted lines are control signals.

The knobs work like this:

Mix

Mix sets how much chorus is applied to a sound. If a chorus is being used on a pair of tracks, you'll probably want to set this at somewhat less than 100%, or leave it where the preset had it. But if the chorus is patched into the submix, you'll usually run this control at 100% — that way, the *Submix* return fader can be used to adjust the effect while you're mixing it with the source tracks.

Delay

This scales the maximum length of the four delays, though each delay will be set to a separate value within that maximum. Shorter delays add a thickening to the sound. Longer ones can create interesting "wobbling" effects.

Rate

This controls the four LFOs at once, changing how quickly the delay lengths change. Each LFO works at a slightly different frequency — creating the chorus effect — which is also controlled by the Range control.

Depth

This controls how much each delay line will be modulated by its LFO. All four delay lines will have the same depth.

Range

This controls how closely the four LFOs track each other. A lower Range will create a tighter chorusing sound.

Gain

Gain sets output gain.

The best way to learn the effects of these controls is to install a preset, listen to it carefully, and then move a single control to its minimum, middle, and maximum position while listening. Do this for just one knob at a time. If you get lost, press *Undo* to restore the preset's original settings.

Tips For Using Chorus

- The factory presets cover a full range of useful production settings, from traditional music-studio effects to weird voice processors and modulators. Try them on a variety of music and voice tracks, as well as on steady sound effects and backgrounds.

- While Chorus can be used on mono signals, its outputs each have slightly different processing to enhance the stereo image. For best results with mono signals, copy the sound so it's on two channels of a linked stereo pair, then assign Chorus to the pair.

Broadcast Pro Flange Settings

When you enter the Knob Level for a Flange, a panel like the following appears:

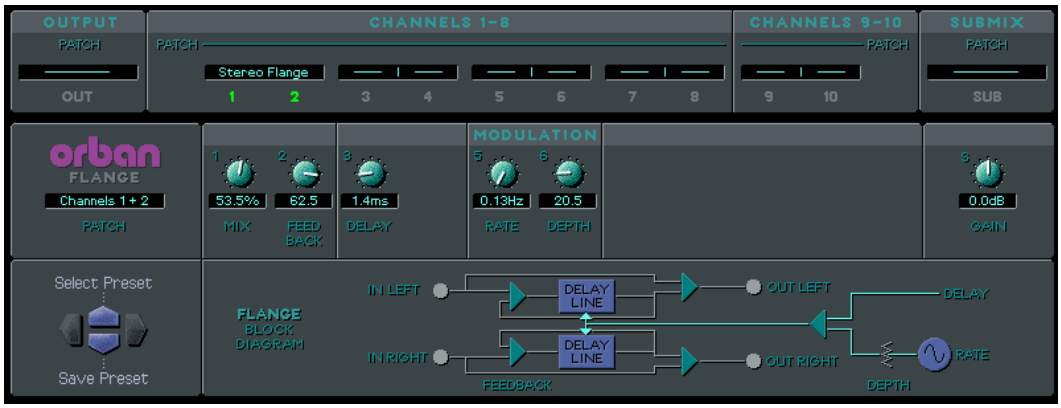


Figure 12: Broadcast Pro Flange Knob Level

The Flange is a straightforward configuration: a pair of synchronized delay lines are modulated by a low frequency oscillator (LFO). The output of the delays is sent both to the output of the effect, and — in controlled positive or negative amounts — back to its input.

We added one feature for broadcast production that you won't see in music-studio flangers: the LFO actually generates a triangle wave, rather than a sine. At low depths and slow frequencies, it sound like a classic flange. But at high depths and frequencies, this waveform lets you create wild multiple pitch-shifting effects[6].

A block diagram of the signal flow path for the current FX controls appears in the lower half of the Knob Level screen, as shown above.

Mix

Mix sets how much flange is applied to a sound. If a flange is patched into a track or tracks, you'll probably want to set this somewhat less than 100%, or leave it where the preset had it. But if the flange is patched into the submix, you'll usually run this control at 100% — that way, the *Submix* return fader can be used to adjust the effect while you're mixing.

Feedback

Controls how much of the signal is recirculated through the delay line. As the feedback increases, the flanging effect becomes more apparent. At extreme settings, it may even start to oscillate on certain signals.

[6] We use the term "wild" deliberately. The Flange's continuous multiple pitch shifts are probably best for attention-getting special effects in spots. If you want a precise, single pitch shift use the Effects: Pitch In/Over menu choice.

The knob varies from –100% through 0 to +100%. Both extremes provide maximum feedback. The negative range inverts the phase of the feedback, which can subtly change the sound of this effect.

Delay

This controls the maximum delay through the flange effect.

Rate

This controls the speed of the LFO. Slower speeds can be used for "wooshing" effects; higher ones add vibrato.

Depth

This controls how much the delay time will be varied by the LFO, which often translates to how deep the flanging effect is.

If the depth is set to 10 or below, the effect will be like a traditional flange. Much higher depths can be used for attention-getters and other trick production effects.

Gain

Gain sets output gain.

The best way to learn the effects of these controls is to install a preset, listen to it carefully, and then move a single control to its minimum, middle, and maximum position while listening. Do this for just one knob at a time. If you get lost, press *Undo* to restore the preset's settings.

Tips For Using Flange

- Flange processes both sides of a stereo pair the same way. You can use it in a single mono channel or a linked stereo pair, with equal results.

Broadcast Pro Digital Delay Settings

When you enter the Knob Level for a Digital Delay, a panel like the following will appear:

Figure 13: Broadcast Pro Digital Delay Knob Level, showing Single Controls

The panel above has a single set of knobs, to control a mono delay or to control both channels of a stereo pair simultaneously. Depending on the preset, a dual-knob panel may appear: This lets you adjust each side of a stereo delay independently.

Knob functions are described below.

A block diagram of the signal flow path for the current FX controls appears in the lower half of the Knob Level screen, as shown above.

Mix

Mix sets the ratio between original and delayed sound, with a setting of 100% meaning that only the delayed version is heard if the delay is patched into a track. If the delay is patched into the submix, you'll usually run this control at 100% — that way, the *Submix* return fader can be used to adjust the effect while you're mixing with source tracks.

Delay

This sets how long it takes to hear the first delay. If Feedback is set to 0%, this is the only delay output you'll hear. However, as the Feedback is increased (either positive or negative), you'll hear a string of repeats which can last much longer than the Delay setting.

The Delay knob is logarithmic. At its lower ranges, you can set it to a precise millisecond. At its higher ranges, you can set a delay that is almost two and a half seconds long.

Feedback

This adjusts how much of the delayed signal recirculates through the effect for multiple echoes. At 0%, you'll hear only a single delay. At moderate ranges, the echoes will die out rapidly. With

both Delay and Feedback set to a maximum, the sound can last several minutes after Audicy's transport is stopped.

> What's the difference between the Reverb effects and Echoes produced through the Delay effect?
>
> Real-world reverberation is a very complex signal, consisting of multiple reflections off all of the surfaces in a room. Audicy's Reverb effects simulate that effectively.
>
> Echoes are individual, spaced repeats. Audicy's Delay can be used, with appropriate Feedback, to simulate very sparse hard-walled spaces such as a metal-tiled hallway or an open canyon... but the process will probably be more useful for special effects, ranging from robot voices to dream sequences.

EQ Amount

Controls how much the high frequencies are attenuated as they pass through the Feedback loop. This prevents noise buildup, and can be useful in simulating spaces because highs are also absorbed by the air as they travel long distances.

EQ Freq

Controls at what frequency the Equalizer will be active.

Gain

Gain sets output gain.

The best way to learn the effects of these controls is to install a preset, listen to it carefully, and then move a single control to its minimum, middle, and maximum position while listening. Do this for just one knob at a time. If you get lost, press *Undo* to restore the preset's settings.

Tips For Using Broadcast Pro Digital Delay

- Factory Preset #2 has a single set of controls, for linked stereo or single-channel mono delays. Factory preset #3 has dual controls, for independent stereo or dual-channel mono delays. Choose either one of these if you want to build your own preset from scratch.

- If a sound is "trapped" in the delay because Feedback has been set to 100%, it can last for hours after Audicy's transport is stopped. The fastest way to clear the delay is to change presets, or go to the knob level and reduce the Feedback.

- You can use the Delay to record short “scratch” and other manual scrubwheel effects.

A) Patch the Delay into to the source tracks, and set it for about 90% mix, maximum Delay, and 0% Feedback.

B) Set Audicy to Bounce mode, and press the *Record Ready* button for a channel or two.

C) Turn the scrubwheel to create the scratching or scrubbing effect. You’ll hear it very softly through the monitors.

D) *As soon as you’ve finished scrubbing*, press *Play+Record*. The last two and a half seconds of your scrub will be recorded after they pass through the delay.

Orban Stereo Toolkit Settings

The Stereo Toolkit was designed for two common broadcast production chores:

- It can be used as a mono-compatible stereo synthesizer, to make mono music and effects sound wider and fuller.

- It can be used as a sophisticated “vocal eliminator” for song parodies and spot production.

  Unlike basic phase cancellation techniques, our process does not remove bass notes from the music.

  Any vocal-elimination process ends up with a signal that’s at least partially mono, so our process includes the stereo synthesizer to restore a sense of space to the music.

When you enter the Knob Level for an Orban Stereo Toolkit, a panel like the following appears:

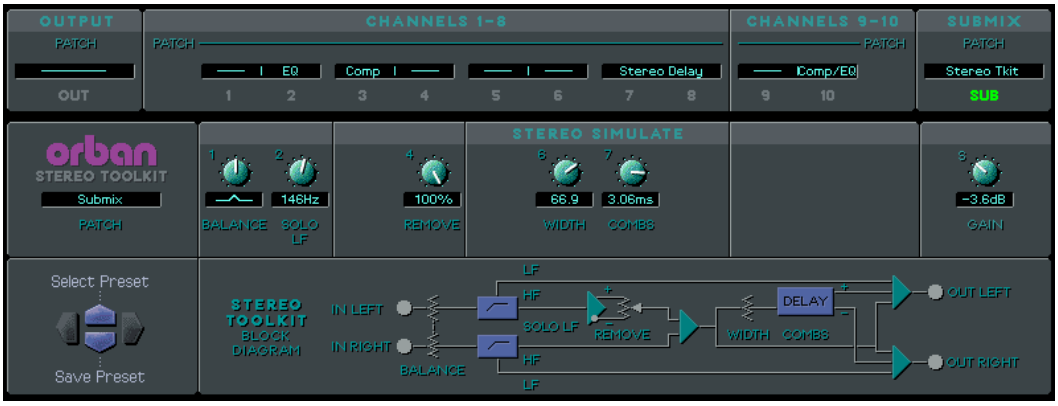


Figure 14: Orban Stereo Toolkit Knob Level

A block diagram of the signal flow path for the current FX controls appears in the lower half of the Knob Level screen.

The Stereo Toolkit splits the incoming stereo signal into two bands. Low frequencies are passed directly to the output. Midrange and high frequencies are mixed, with varying degrees of phase inversion on one channel, to provide center channel cancellation. The resulting mono mix is then sent through a stereo simulator; this pseudo-stereo[7] mid/high signal is mixed with the true stereo of the original low frequencies.

> Unless there are radical phase problems in the low frequencies of the original signal — which is very rare — the Stereo Toolkit's output will be completely mono-compatible.

Its circuit looks like the figure below; a similar diagram appears on the lower half of the Knob Level screen, as shown above.

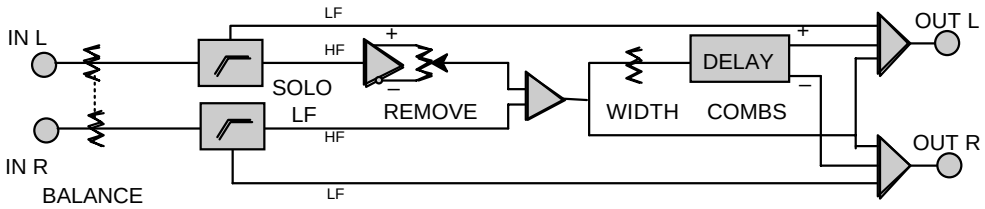


Figure 15: Stereo Toolkit Block Diagram

Balance

This lets you compensate for off-center performers when using the Stereo Toolkit as a solo (or vocal) eliminator, or balance analog recordings where the channels don't match.

Solo LF

This sets the lowest frequency that will be processed by the phase canceller and stereo simulator. Sounds below this point are passed, in stereo, directly to the output.

Remove

Controls how much of the center signal is eliminated.

Width

Controls how much stereo simulation will be applied. At 100%, the signal will sound wider than real life.

[7] It can sound very wide, but the placement of individual instruments is lost.

The stereo simulator works by applying "comb filters" to each channel, which alternately cuts and boosts many closely-spaced frequency bands[8]. The cuts on one channel are exactly matched by the boosts on the other channel, so normal broadband signals — such as instruments and voices — have their harmonics spread across the entire stereo field.

Since the two comb filters are perfectly complementary, the output is mono-compatible. Listeners whose receivers combine the two channels won't hear any artifacts from the processing.

Combs

Controls how closely the comb filter frequencies are spaced.

Gain

Gain sets the output gain.

The best way to learn the effects of these controls is to install a preset, listen to it carefully, and then move a single control to its minimum, middle, and maximum position while listening. Do this for just one knob at a time. If you get lost, press *Undo* to restore the preset's settings.

Tips For Using Orban Stereo Toolkit

- Solo (Vocal) Elimination depends on the soloist's voice being electrically identical in both the left and right channel. Most studio recordings of popular music are created by panning one or more mono solo (vocal) tracks to the center of the stereo field, and can be processed this way without problems.

  In most pop recordings, the reverb is stereo even when the vocal solo is mono. So you may be left with a "ghost reverb" of the soloists, even though the solo is completely eliminated. Adding a new solo or announcer voice should successfully cover this reverb.

  Symphonic and other acoustic recordings don't use studio panning techniques, and there's no practical way to remove the soloist. If a live version of a pop song doesn't work through this effect, try the studio version.

- The Solo (Vocal) Elimination presets are just starting points. Play with Balance and Solo LF for maximum cancellation.

- You can fade a soloist in and out with the Remove knob, to create custom mixes for concert spots.

[8] A frequency response graph of the filter's output looks like a barber's comb.

The Stereo Simulation presets are dual-mono in, stereo out. Any signal on either of the two input channels will be sent as stereo to both of the outputs at once. Note that the Stereo Toolkit can only be patched in on stereo patch points, such as track pairs, the stereo submix, or the main output.

Additional Effects Techniques and Information

Stereo Vs Mono: Patching stereo effects into a mono channel

Chorus and reverb are true stereo effects. In other words, they function as stereo-in, stereo-out audio processes. While you can patch them into a single channel and still hear them doing *something,* you'll only be getting half the effect (and you'll be wasting some of Audicy's DSP horsepower). For best results, use these effects with a linked stereo pair, or in a stereo patchpoint such as the main output or the submix bus.

If you want to use one of these effects on a mono sound, such as an announcer track, we recommend you either:

- Copy the sound onto the other track of a stereo pair, link the tracks, and assign the effect to both at the same time; or
- Use the Advanced Mixer to send the mono track to the submix send, assign the effect to the submix, and hear it through the Console's submix return[9].

Note also that the Orban Stereo Toolkit is available only at stereo patch points (track pairs, the submix and the main output patches). Its solo (vocal) removal and stereo enhancement functions are stereo-in, stereo out. Its stereo-simulate function is 2 channel mono-in, stereo-out: a mono signal on either of the linked tracks will be processed and appear on both outputs as stereo.

The Delay and Flange effects can be used in a single channel for mono, or in a linked pair of channels for stereo. Depending on the preset and how it's patched, the Delay knob panel will appear with either independent controls for each channel or a single set of controls for the stereo pair.

Technique: Bouncing tracks while toggling the preset selector to build fast, cool effects

Say you want to take an announcer track, and apply several different effects or filters to different parts of the track, so you can cut the results up later to spice up your production. Try the following (we'll use EQ as an example).

[9] Experiment with alternate settings of the Mixer menu's Submix: Pre/Post choice: Reverb will often sound best in Post, with the track's faders up; Flange and Chorus may work better in Pre with the track's faders down.

A) With your announcer on track 1, put your system into Bounce mode, and record ready track 2.

B) Press the *Select* button for track 1, and turn on the EQ: Proceed to the FX preset selector level.

C) Press *Record+Play* so you are now bouncing track 1 to 2, while still in the EQ Preset Selector screen.

D) As the announcer track rolls, press the *left* or *right* arrow keys between words to toggle to different EQ presets. The resulting changes will be recorded to the bounced recording on track 2.

E) To really enhance this technique, build a sequence of different EQ filters and save them as user presets (e.g., U1 to U8), then toggle the preset selector through this sequence of filters as you bounce[10].

When you're done bouncing, track 2 will have multiple EQ filters recorded to different parts of the track. Copy, move, or loop filtered bits from this track to other places in your production. This gives you a quick way of creating sophisticated sound elements. Note that you can also try this with music, (try changing presets on the downbeat of each bar of music) and you can try this technique with other classes of effect, such as Chorus, Delay or Reverb.

Add an Effect to Just One Part of a Track

You can patch an effect into a single channel or stereo pair and then use the bounce technique to record that channel to itself *through* the effect. This allows your to "print" an effect to a track or track segment.

A) Apply the effect and adjust it for the desired sound.

B) Make sure the *Bounce* button is turned on and its LED is lit. When this button is on, the word Bounce appears in the Status Bar.

C) Turn on the channel *Play* and *Record* buttons for the one or two tracks you want to process. All others channel buttons should be off.

D) Go to the start of the section you want to process and press ▶+*Record*. When you reach the end of the section, press *Stop*.

   If the channels' faders are fully on, the effect will be recorded at full volume.

   You can adjust the channels' levels and panning while you're recording, to permanently save these moves.

E) The effect's sound has been permanently recorded (unless you *undo*) onto the section of the track. You can now go to the Effects Patchbay and remove the effect.

[10] An extra tip: If your announcer is panned to the center, the bounced version will normally be 6 dB softer. But if you're building custom EQ filter presets for this purpose, there's no problem including a 6 dB boost in each one!

If you leave the effect on, that section of the track will be processed twice.

[!]	You can preset where Audicy will start and stop recording, letting you process as little as a single syllable. Set *Dest In* and *Dest Out* around the audio or track location, then rewind to someplace before the section and press *Shift+Record* to start the auto-punch.

Effects Quick Select

A new feature for quickly selecting effect classes is to use the numeric keypad on the Audicy Console. From the Effects Class selector, punch a number from 0-9 to quickly select an effect type. For effect 10, the Orban Stereo Toolkit, press 1 twice. Link Track, Unlink Track, and +12dB can be accessed quickly using the Audicy pullout keyboard, as described below. (For newer keyboards, you can also use the Fn Function key and blue numerals, or plus key.)

0 = No Effect

1 = EQ

2 = OPTIMOD Compressor

3 = Compressor EQ

4 = Orban Mini Verb

5 = Lexicon Small Space Reverb

6 = Lexicon Large Space Reverb

7 = Broadcast Pro Chorus

8 = Broadcast Pro Flange

9 = Broadcast Pro Delay

1 and 1 = Orban Stereo Toolkit (available on stereo patch points only)

Keyboard L = Link

Keyboard U = Unlink

Keyboard Shift and '+' key, or Keyboard Fn key and blue '+' = +12dB Gain

orban

1525 ALVARADO STREET, SAN LEANDRO, CA 94577 USA
Phone: (1) 510/351-3500; Fax: (1) 510/351-0500; E-Mail: custserv@orban.com; Site: www.orban.com
P/N: 96092.300.01

V3.0 Software Errata

The following errata are noted for Audicy V3.0

- This version of Audicy does not support the latest version of the proposed AES/EBU Cart Chunk standard.
- Factory presets for the Comp/EQ were not finished at the time of release.
- Because of the way effects resources are allocated when patching in two Comp/EQ circuits, the DSP usage gauge may incorrectly tell you that you have resources left for patching in delays, reverbs or chorus effects. However, in this state, you will only have enough resources to patch in mono EQ or Compressor effects.

Audicy Software History

Audicy Version 3.0, released January, 2000 Highlights include:

- Support for new effects classes: Includes Professional Broadcast Pro Digital Delay, Chorus and Flange, Orban Stereo Toolkit, and combination Compressor/EQ.
- Up to 20 custom presets can be created for each class of effect. These presets can be moved between systems. Each User Preset can be named and given a 'Notes' descriptor line to describe the preset.
- Block diagrams of Compressor, Reverb and new V3.0 effects.
- More secure handling of network and secondary drive failures.
- Enhanced fast wind.
- New Edits Locates menu pick, updated Name And Edit Audicy Locate Points screen.
- Production Import/Export, allowing full productions to be condensed as single files, enabling easier distribution via email or FTP sites.

Audicy Version 2.5, released April, 1999. Highlights include:

- Support for optional Novell IPX/SPX networking, comparable to our Microsoft network support.
- Support for TCP/IP internet protocol on Microsoft networks.
- Wave file import and export from within a production. Save Wave files as linear 8-bit or 16-bit at a variety of sample rates, or with MPEG layer II compression (with optional hardware). Wave files can also be saved with EBU/BWF information.
- Send Cart function to create Wave files to export directly to digital delivery systems. Includes form pages for setting traffic/continuity information consistent with Orban's proposed "Cart Chunk" Broadcast Wave standard.
- Y2K compliance.

- Support for "SpinRite," a unique and powerful third party utility to help ensure the integrity of your drives and files.
- Audicy's link to ENCO on-air systems now supports all current versions, including ENCO DAD486, ENCO DADPRO and ENCO DADPRO32.

Audicy Version 2.01, released August, 1998. Highlights include:

- Support for optional Networking. Now, Audicy workstations can be connected to simple desktop PCs or advanced file servers, enabling production and library sharing between multiple Audicys, or Wave file transfers to and from other computers.
- New Folder capabilities, allowing users to create and sort productions and libraries in their own unique folders.
- Improved layout and more intuitive navigation in Audicy form screens.
- Better, faster support for Wave files. Now it's faster and easier than ever to create multimedia tracks, or use Internet sounds in your Audicy productions.
- More on-screen Help, including instant descriptions of every button on the Console, to make learning Audicy even easier.
- Hidden performance improvements, including intelligent management of internal memory.
- Support for our new Remote Control hardware option.

Audicy Version 1.5, released January, 1998. Highlights include:

- Support for our new generation of Audicy memory modules, doubling current recording capacities.
- Optional SMPTE/Machine control support for audio for video applications.
- Wave file import and export with full sample and bit rate conversion.
- New "Fade Up/Fade Down" edit features.

- Enhancements to our scrub facilities, including new speeds and gear ratios.

- Many new "hot-key" functions, including a new "Check Edit" feature for fast previewing of your last edit. Included: *Alt+Input* toggles input routing; *Shift+Input* enables the I/O Setup form; *Shift+A/B* enables Auto A/B mode.

- For users with Orban's Digital I/O Module, the sync output of the digital module is now stable when transitioning between the Job Controller and Editor.

- Default control settings easier to use. The I/O, Chase, VTR, Machine Control and Scrub Setup screens have a new Defaults selection field.

Audicy Version 1.1, released August, 1997. Highlights include:

- Printer Utilities lets you hook up a printer to your system's parallel (printer) port and print production note files and lists of productions or library sounds.

- New Notepad: Text notes may now be edited and printed from within a production.

- Auto A/B lets you automatically switch what you're listening to when recording. Use it with Auto A/B for doing punch-ins or overdubs in Bounce record mode.

- Input Routing indicator provides a visual reminder of how you have your input routing selected; labels above the input meters now reflect normal L/R input routing, mono input routing, and reverse stereo input routing.

Audicy Version 1.0, original software, released April, 1997.