

## Eventide DSP4000/DSP4000B/DSP4000B+

# PROFESSIONAL PRODUCTION PRESET PACKAGE

Broadcast and Production Audio Effects for the Eventide 4000 series UltraHarmonizer brand effects processor®. This package comes standard in the DSP4000-B unit and is available as an upgrade for all DSP4000 units. It also applies largely to the DSP4000B+ unit, introduced in 2001, which has even more [presets](#).

**Owners' Manual Version 1.0 February 1996 for the upgrade package for DSP4000**

Requires DSP4000 version 2.100 or higher operating system

[Congratulations](#) Equipment manuals seem to always start with a "Congratulations" section, and we don't want to upset tradition.

So: That's a terrific mix you did yesterday. Nice haircut, too.

## These programs will help you do a better job

The Professional Production Presets Package includes 87 powerful tools designed specifically for broadcast and advertising sound:

- sophisticated processors (stereo synthesizers and enhancers, compressors, multiband levelers, and more)
- voice effects (crowd generators; pacing changers; gadgets to turn normal speech into doubletalk, chipmunks, and dragway announcers; and more)
- simulators (call-ins, intercoms, airplane and helicopter interiors, bullhorns, movie theaters, CB radios, warped records, sound trucks, boomboxes, fantasy backgrounds...)
- special effects (a stereo solo eliminator for song parodies, multi-band shifters, detuners, echoes, loop repeats...)

and the list keeps on going. The idea was to give you the widest selection of fast, easy to use effects and inspirations for your own spots. All the programs are based on high-quality algorithms, designed for maximum quality and minimum noise and distortion, and work well with lots of different kinds of program material.

They work equally well in a completely digital studio, or in an analog path, or while you're converting from one domain to the other.

The programs are stored on an easy-to-use memory card that plugs into any Eventide DSP4000 UltraHarmonizer running at least System Software 2.100. The card doesn't require special handling or precautions, and can be slipped into a shirt pocket and carried from gig to gig.

## Where they came from

The P4 card was written by Jay Rose, a Boston-based production rat and audio hacker. "Production Rat" is radio's term for a producer-announcer-editor-mixer. They're frequently kept in soundproof cages and subsist on small amounts of cheese pizza or salary.

Jay bought one of the first DSP4000s in 1993, as an upgrade from his much-loved H3000B. Then he discovered the unit's incredible programmability, particularly when hooked up to a PC. Some of his early programs found their way into the current system chips (including almost all of the *Post Suite* bank).

This package represents his more refined efforts, written over the course of a year, used in his own productions, and tested by similar production rats around the country. Improved versions of a couple of the original programs also appear on this card.

In addition Jay wrote this manual, which makes it weird that he keeps referring to himself in the third person.

## How to use the programs

We'll assume you already know how to use the DSP4000, particularly the Program menu and the front panel controls. If you don't, you're missing a lot: go back and read Chapter 2 of the UltraHarmonizer manual.

In our descriptions, bank or program names are in italics. So *Communication/Megaphone* refers to the *Megaphone* effect (number 6) in card bank *Communication* (number 2). We'll sometimes refer to programs as 'patches' or 'effects', just to keep these pages from getting too boring.

## You need an appropriate source

These effects can do a lot for you, but they can't work miracles. A voice that's totally right as a car seatbelt reminder would be absolutely wrong coming from a sound truck. No amount of

pitch shifting will turn Woody Allen into Darth Vader. You might discover a wonderful new sound... but don't expect processing to turn a voice into something it's not.

Some of the programs (*Theremin* , *Singing Mouse* , and others) work best with particular kinds of music. Check the notes under each program in this manual for details, if you start hearing unexpected results

Some programs have a lot of convoluted processing, and might overload even if the clip light isn't flashing. Depending on content and levels, you might hear a 'thunk' on low-frequency peaks. If this happens, lower the input level. (*Public Address* includes a <Tap Mic> button. If that program thunks, stop hitting the button.)

Many programs have a Left/Right/Mono selector. While it's a no-brainer to choose one channel on an analog board or patchbay, it's difficult with digital connections.

## Listen to every program

Do this when you first get the unit, before you start using it for productions. This isn't just playtime (though it'll be fun)... it's learning to use your tools. Besides, with a good ear and imagination you'll probably get ideas to use in your own work.

Have a voice recording handy to play into the DSP4000, rather than trying to use a live mic. Some of these patches do strange things to the input, and you won't hear the full effect if you're talking at the same time. A few also have a slight processing delay, and you *know* what that can do when you're talking with headphones on.

Have some music handy, too. Not just production cuts but also playlist stuff. Some patches work best with solo vocals; others with rich instrumentals.

While you're checking out a programs, tap its <About> button. You'll find some production-room humor along with the operating hints.

## Mix 'em up

There's no reason you can't put *Gremlins* into a *Sound Truck* , or have *C3P-Yo* read the *Traffic Report* . *Airplane Background* becomes other environments if you run it through additional patches. We usually run *Voice Processor Pro* on all our voice tracks, no matter what other effects are used.

If you've got a DAT recorder or workstation plugged into the DSP4000's digital connections, you can dub a sound through one effect and then bounce it through a different one with little signal degradation. Or send us a bunch of money and get a lot of UltraHarmonizers to run in series.

## Get a little crazy

The names and bank organization are intended to be evocative, not descriptive: something to help you remember where to find the program you're looking for. There's no reason you can't use *Magic Echo* for science fiction, or even as transitions in a concert spot. *Talking Dashboard* could be a kid's toy, a greeting card, or a robot sales manager.

While a lot of the programs have preset settings to save time, there are also on-screen sliders so you can customize the sound. Try them. If you discover something you like better, save a copy in the UltraHarmonizer's memory. If you totally ruin the sound, just reselect the original.

## Using the memory card

This card contains special functions that aren't in the normal DSP4000 operating system. The patches won't work if you try to run them from another card or internal memory, unless these functions are already loaded into the DSP4000. Because of this, you can't dump the card to another card or to a MIDI file.

You *can* edit programs through the DSP4000's front panel patch editor, and save your new versions the usual way. But the original card has to have been inserted (and, optionally, removed) at least once since power-up for your new versions to work.

This also stops dishonest people from making bootleg copies. Jay and Eventide spent hundreds of hours making these programs useful, and would like to make a few bucks for their efforts.

Unlike many other memory cards, this one is powered by magic rays from a distant star and does not need batteries. It cannot be written to or re-formatted.

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## The Patches

### Bank 1: Commerce

The loudspeaker and intercom effects aren't just variations of a single program, and there's a lot of different algorithms generating them. Try them all: what we think is a *soundtruck* might be your ideal *radio-on-the-porch* ...

### 1: Airplane Background

This generates a complex machine hum that's great in stereo. With a little extra filtering, it can be just about any background from a tank interior to a starship. The <Throttle> button makes the engines speed up and slow down.

Press <Bong> for a realistic flight-attendant call.

### 2. Clock Radio

What does your morning show really sound like to the listeners? Here's an authentic-sounding 3" speaker in a plastic box, with some annoying alarm-clock beeps, so you can find out.

### 3. Fries With That?

A typical drive-through's outdoor speaker, with adjustable distortion and muffle. Quality and intelligibility varies with your choice of restaurant The Ritz, MacBurger, or Road Kill Unlimited.

The Distrt (distortion) and Muffle settings are slightly interactive, so if you decide to customize one you should also adjust the other.

### 4. Office Intercom

This is a traditional squawk box: it beeps when you call someone, and there's some reverb thrown in to make the speaker sound natural. Select the kind of office, which influences the quality of the sound and also the reverb.

The input is muted until you hit the <Call> button.

### 5. Sound Truck

Truck speakers plus realistic city echoes and the ability to pan the whole thing across the stereo image. The Candidate's Office knob selects how good a speaker system they could afford: choose President, Governor, or Dogcatcher.

You can't Pan manually while <Autopan> is working. Allow a few extra seconds for autopan to reach its limits.

## 6. Talking Dashboard

Makes your voice sound badly digitized, mixes it with warning beep, and adds a stereo car-interior slap... just like a seat-belt or burglar alarm warning.

The distortion, band limiting, and stereo diffusion also makes this great for simulating a pair of open headphones.

# Bank 2: Communication

*Bullhorn* and *Megaphone* are totally different. The first one simulates the distortion and metallic ring of a hand-held electronic amplifier echo. The second is a rolled-cardboard thing, with lots of resonance but no distortion. It's often used by cheerleaders and old-time big band singers.

## 1. Bullhorn

Move the Dist slider to bring it from far away to in-your-face.

## 2. Cellfone

Sound quality varies from almost-good on the open highway, to unintelligible when you press the <Tunnel> button. Or advance the Random slider for automatic tunneling.

## 3. CB Radio

Like the popular H3000 program, only we've also added a Pickup switch: Direct gives you the sound as broadcast; Speaker adds distortion and some room echo so it sounds more like a radio set.

The <Bzzap!> button does exactly what you'd think.

## 4. Crazy Dialer

Rapid random dialing, with real phone company tones, to use as a sound effect. Or hook it up to your phone... who knows where you'll end up calling.

## 5. Long Distance

The filter and noise sliders do exactly what you'd expect. SideT controls the electronic echoes you often hear on long distance phone lines. Crosstalk simulates weird foreign-language jabbering in the background. (It's actually your own voice raised higher, flipped, and delayed but it sounds like crossed wires.)

## 6. Megaphone

Add more Macho when you're leading a racing-boat crew.

## 7. More's Code

It's not Morse code, since the beeps are totally random. But it sure sounds convincing.

## 8. Off Hook!

This is the annoying *breep-breep-breep* the phone company sends when your cat knocks over the handset. Use it for production, or let it play softly out of a cue speaker and watch the Operations Manager go nuts...

## 9. Public Address

This is an enhanced version of *Public Address* in bank 17. We've added a <Panic> button to kill feedback quickly, and a <Tap Mic> button that does just what it implies

Feedback Disabled shows after you hit Panic. Hit it again to re-enable.

## 10. Real Dialer

Similar to the version in bank 17, but much faster and easier to use. Numbers can be spun in, or entered directly from the 10-key pad.

Use the knob or type with the keypad and then hit Enter to set the numbers. Enter the first three digits, then press the < cursor to set the last 4. Leading zeroes aren't displayed (277-0041 looks like 277-41) but still play properly.

<Tap> to advance through the dialing sequence. (Try stepping though a client's number in time with their jingle!)

### 11. Shortwave Radio

Bad reception. Program includes the heterodyning that's typical of an SSB radio (adjust it with the Manual slider). You can add an automatic shift with the Drift slider. The Gate slider acts like a squelch control.

### 12. Traffic Report

Adds a classic helicopter warble to the input, much less painfully than hitting your throat. There's also a pretty good blade and engine simulation.

Input and engine are keyed on and off when you press the button, just like the switched mic in a real chopper.

## Bank 3: Fantasy

*Cousin It* and *Cussing It* are both monsters, but the first one is friendly and the second one is angry.

### 1. Cousin It

Your voice input becomes the friendly, hairy little guy popularized in the movies. If you play rock music through *Cousin It*, it can sound like a tape being rewound.

### 2. Cussing It

Bigger guy, and now he's angry. Extra harmonics are added for energy, and a stereo simulator to make him bigger. If you rewind a voice track through *Cussing It*, the results are positively freaky.

### 3. Elves

This program turns your voice into a flock of munchkins.

The Ragged slider appears in a number of voice multipliers. It lets you control how much in unison the group is when it speaks: think of the difference between a trained choir, a group singing 'Happy Birthday', and a bunch of drunks.

#### 4. Fantasy Backgrounds

Generates a rich stereo background for magic or science-fiction scenes.

#### 5. Magic Echo

Tuned repeats climb up or down at various intervals and speeds. Try different presets on voice, or select one of the scale settings and manually adjust the speed to fit a piece of music.

#### 6. Morph to Magic

These magicians have deep, echoed voices with mysterious chanting overtones. This is a true morphing, not a crossfade.

If the chant fader is very high, faster morph speeds might develop a clicking sound. Slow down to eliminate the clicks.

#### 7. Singing Mouse

Raises the midrange an octave or more, but keeps the bass in place. It works best with songs that have a soloist over a low bass line. Try it on Billy Joel's *Still Rock n' Roll* or almost anything of Johnny Cash's.

#### 8. Trolls

Your voice gets converted to your choice of one, two, or many low-pitched talkers (trolls can't count higher than two). They get even more menacing as you advance Ragged.

## Bank 4: Entertainment

#### 1. 45 RPM Oldie

Sheer Torture. Use the sliders to adjust how badly the record was cut. Sliders adjust bandwidth overcut distortion, and bad center-hole placement (warp). Or select a preset: AM includes some awful transmitter processing.

This effect is nothing like the 33 *RPM* in Bank 17.

## 2. Big Movie

Did you ever notice how movie theaters sound like nothing else on earth? Program lets you control the room size, speaker quality... and even add the rumbling bass notes that leak from other theaters in the cineplex. (The 'leakage' is actually your input, modified and delayed. But it sounds real.)

## 3. Boom Box

Just listen to that *bass* , man! And that awful distortion. Includes <H-Bass> button to make it even boomier.

## 4. Fake Call-in

Feed it two clean voice signals mic, automatic ducking so the host overrides the guest, and an optional studio echo overall. It sounds okay if there's a little leakage between mics when you record, but works best when the inputs are isolated or cleaned up in a DAW... particularly if the voices interrupt each other.

## 5. Page Three!

There's a famous syndicated radio personality who likes to speed up or slow down at random while reading the news. He's on a lot of stations, so it must be a good idea.

Feed in a voice and press <Do It!> to change the pacing when you want to, or select Automatic for totally random changes. The Drag meter indicates how much memory is left for the voice to slow down into. When it gets full, the buffer empties and the voice speeds up.

## 6. Real Call-in

Designed to use with a live mic on one input and a phone patch on the other. The program is similar to the one in Bank 17, but adds switchable processing and tone controls on the phone input, along with the automatic ducking and adjustable reverb. (You can also use it to process just the phone signal to clean up telephone interviews.)

The DSP4000 shouldn't be connected directly to a telephone line. You'll need a transformer, phone patch, hybrid, or QHT coupler to provide the necessary electrical isolation.

## 7. TV in Next Room

There's a similarly-named program in the H3000B, but this one sounds a lot more authentic. The Tinniness knob cuts the lows and adds a slight pitch shift; Distance adds house-like reflections. It sounds most convincing at a low volume, panned to one side.

# Bank 5: Science Fiction

Artoo Chatter and C3P-Yo are totally different kinds of robots (well, C3's an android). R2 turns a voice or rhythmic music signal into sliding tones and whistles; C3 has a metallic ring and staccato beeps.

## 1. Artoo Chatter

Use Smooth to adjust how much the tones slide, and Deep to set their pitch.

## 2. C3P-Yo!

Metal adjusts the twanginess of the voice; Beeps changes the pitch of the computer tones.

## 3. Lasers

Press <Zap>, <Bzoom>, and <Thup> for everything from an outer-space war to a video game.

[Author's note: Programmers working in high-level languages DSP4000's <I>Lasers</I> aloud:

```
AMPMOD zapamp zapfilt-band zapenv-out 1 0
LFO bzoomwarb hed-null 10 0 0 0 0

TRIGGER bzoomtrig longname "Bzoom"

C_TO_A bzoom bzoomtrig-out

ENVELOPE bzoomenv bzoom-out bzoomwarb-out 1.85 0 1 .01 0 -10 0 .001

MIX bzoommix bzoomenv-out bzoomwarb-out .61 -.34

MODFILTER bzoomfilt zapsource-out bzoommix-out hed-null 0 15000 1000 0

AMPMOD bzoomamp bzoomfilt-band bzoomenv-out 1 0

STEREOMIXER premix 4 zapamp-out bzoomamp-out crossbronx-out1
```

crossbronx-out2 zapvol-out bzoopvol-out bronxvol-out bronxvol-out  
zappan-out bzooppan-out bronxpan-out bronxpanadd-out

#### 4. Martian Rock Band

It's impossible to describe this effect. Plug something rhythmic with a strong melody a rock song with a male vocalist and let it fly. You'll get an unrecognizable set of instruments playing random lines based on the original melody... but hey, you might like it. Doesn't work very well on piano or classical music.

Adjust Weird until you're satisfied.

*Martian Rock Band* is totally different from *Robot Band* .

#### 5. Robot Band

Attempts to analyze the input melody, add a harmonically related bass line, and a new melody based on the rhythm. Groove controls how well the robots stay with the input.

The normal output is a mix of the input and those jamming robots. Press <Solo> to let the 'bots take a few bars on their own.

Since the program has to analyze the melody in realtime, it works best with simple lines and worst with chords. Try it with a variety of different inputs.

#### 6. Theremin

Leo Theremin created an one of the first synthesizers in the 1920s, played by waving your hands in front of an antenna. While it a few composers put it to work as a serious instrument (including the Beach Boys in *Good Vibrations* ), it received more acceptance from science fiction producers. This is the classic "ooh-wee-ooh" sound of a bad flick.

Pick up a microphone and sing into it. Adjust Shift to put the sound in its proper octave: Theremins are much higher than most singing voices. <Mute> keeps it from responding to background sounds.

#### 7. Tribbles

Breaks your voice up into random furry squeals.

## Bank 6: Production Gimmicks

### 1. Backwards

This is like the popular H3000 effect, only it's matrixed to stay in true stereo and it's more controllable. Breaks the input up into little pieces, and then plays each of them backwards. Try it on voice, mixed music, and on solo instruments like violin.

### 2. Can't Carry Tune

Play a song into it: whenever the soloist takes a breath, the whole thing changes key. Funniest on well-known songs or if you record the boss singing.

Press <Tune> and adjust the slider to pick out the melody. Then adjust Key Mangle for any setting from Slight to Yike! If you pick Tin Ear, it'll shift the melody in exact half-steps.

This program looks for the rhythm, and applies pitch shifts to the whole band in time with the music. *Monotone* also in this bank

### 3. Ducked Tails

Holds the last note of a song for a long time with a repeating echo. Adjust Sense to keep the echoes from interfering with the input. Make the echo slide up or down with the Pitch control.

A slowly rising pitch can be used to blend the pause between two elements (try it for quickie concert spots, where you don't want to worry about crossfades). A fast downward pitch gives a different 'running down' effect than *Plug Puller* .

### 4. Dynamic Stereo

Manual or automatic width enhancer for stereo signals. Dynamic mode lets you adjust the Dynam slider until the width pulses with the rhythm. Fully compatible; doesn't add flanging or artifacts for mono listeners.

### 5. Go Crazy

Dial-a-trip on bad acid. Press <Go> to send input to never-never land; press it again for sanity.

## 6. Plug Puller Pro

Make CDs and DATs slow down, stop, and run up to speed again on cue. Add Grease to make the "turntable" run longer after you pull the plug. This is similar to the program in Bank 17, but sounds better and is more controllable.

## 7. Round & Round

Autopanner uses volume and delay effect to rock stereo or mono signals from side to side. Mono inputs and tight stereo vocals can handle more of the delay effect (Precedence) without obvious flanging; you might have to use more Level effect on stereo inputs.

## 8. Solo Zapper Pro

This enhanced version of *Solo Zapper* (in Bank 17) lets you automatically fade the soloist, add reverb, or even redo a mix. Use <Instant> to switch soloists in or out without changing the stereo image. Adjust Amount to control how much soloist appears in the mix.

The algorithm expects the solo to be centered in the stereo field and occupy the mid-band. Live and acoustic recordings won't zap very well; most studio pop songs will. If the original mix includes a stereo echo, some of it might remain reverb to help hide these 'ghosts'.

Program won't work correctly unless the input channels are balanced. Make sure the pan or balance pots on your board are adjusted, and check the DSP4000's Level screen to make sure both channels match. Some original mixes may develop an artificial bass; if this happens, lower Solo bottom.

# 7. Voice Tools

## 1. Big Voice Pro

This is a downward pitch-shifter with serious reverb and slap on the ends of words only. Small amounts add depth to an announcer; large amounts are Oz-like. It's similar to *Big Voice* in bank 9, but a lot more versatile and with additional processing.

Reverb is the open, spacious effect you get in a large hall. Slap is a repeating echo (echo... echo...). Choose either or both, and make them duck out of the way with the Sense slider.

## 2. Chipmunks

Turn your voice into furry little guys who like to sing harmony. Go from solo to duo to trio by hitting the <Add Munk> button.

## 3. We're a Big Crowd

Smooth variation from 2 to 100 people. Press <Auto> to make the group grow or shrink on cue, or dial a desired sound.

The *Small* and *Big Crowd* effects are totally different. *We're a Small Crowd* adds individuals until you have eight distinct voices at different pitches and timings. *We're a Big Crowd* flows smoothly from a small crowd party to a stadium, but as an effect rather than as individual voices.

## 4. We're a Small Crowd

Adjust Ragged to control how well the voices keep up with each other: the more people in the crowd, or faster the copy, the less you should use.

To add or subtract people on cue ("I told one friend, and she told two friends..."), select <Size> and tap the up- or down-arrow keys.

## 5. Doubletalk

Use it in the foreground as a trick effect, and it's also useful to keep background voices from interfering. Automatic switches from normal speech to doubletalk at random. Manual lets you tap <Garble> and <Normal> on cue. (Why two buttons? So you can use two fingers and cue the effect more tightly.)

## 6. Mega-Dragway

All the screaming excitement of a "SUNDAY..." racetrack spot. Like the H3000B effect, but cleaner and with an optional third voice and echo. Adjust Pitch to make them more macho, and press <Classic> or <Mega> to select two or three announcers.

## 7. 'Max' Stutter

Width sets the length of each stutter, Repeat sets how long the effect lasts, and Pitch makes the stutters rise up or down.

## 8. Nervous Talker

The input voice is essentially unchanged, except it repeats words at random. Slide Nerves to make it repeat more often.

## 9. Triplets

If you need just three voices, this works better than *We're a Small Crowd* . All three voices speak in unison, but with random variations so it doesn't sound mechanical. Adjust Timing to control how well the highest voice keeps up with the others. Use less Pitch on high voices.

## 10. Voice Processor Pro

Microphone technique in a box! Almost any voice will sound better through this program, which includes upward gain leveling, rolloff, equalization, compression, de-essing, and a noise gate. Tighter and more powerful than the version in Bank 9.

The Hold indicator shows when leveling is frozen during pauses, so background noises aren't boosted. Adjust Thresh so it responds to the voice: this slider also has a locking position fully right, which instantly freezes the gain.

WARNING: Program delays the audio 2/3 second to catch transients and maximize level without sounding limited. If you're working in video, use a -20 frame offset. If you need a non-delay version (for headphones or live broadcast) use *Fast Voice Process* .

## 11. Fast Voice Process

Zero-delay version of *Voice Process Pro* . Because it has to react instantly, you might hear clicks on sharp transients. If this happens, lower the UltraHarmonizer's input slightly.

## 8: Mix Tools

### 1. 1 kHz Oscillator

Lineup tone. Default level is -18 dBfs, for digital use. If your studio uses a different standard level, adjust and save a new version. The <On/Off> button does what you'd suspect.

## 2. Awfultones

Want to check your mix on real-world speakers? They don't get much realer than these... and there's a handy mono-check switch.

It's also a handy production effect, any time you want a quick lousy sound (portable radios, jukeboxes, etc). Distortion, Honking, Bandlimit, and Mono/Stereo are separately switchable.

## 3. Brightener

Adds a second harmonic to anything above the Tuning frequency. It's like the popular Enhancer circuits... only silkier. Best when used *very* subtly.

Press <Test> to hear just the effect.

## 4. Easy Timesqueeze®

Easier and better-sounding than an H3000B, and with perfect pitch accuracy! Enter the current length and the desired length. Then set your deck's varispeed to match the PCT or SPEED display.

The [Audio] page is for fine-tuning quality. More delay, or higher lowest sound, does a smoother job. Manual Pitch lets you tweak the pitch determined by the [Timings] page: sometimes, a little lower than normal helps make squeezed voices more natural.

## 5. Hiss Eliminator

This is a single-ended high-frequency noise reducer. You can use it to reduce tape hiss without having to record through an encoder, and also to cut down sync whine, air conditioner or computer noises, and other high frequencies.

Bring Gate all the way down, then adjust Highs until the filter opens on the desired sound but closes when the sound goes away. Then advance Gate and Bypass for additional broadband reduction.

## 6. Hum Eliminator

Uses three different processes to fix noisy bottoms. Notch gives a sharp dip every 60 Hz, using a comb filter: it's useful for powerline hum and dimmer noise. DeHum is a sliding lo-cut filter

for low-level noises: adjust it to pass the desired signal and close on the junk. LoCut is a sharp filter useful for pure waves.

Since low frequencies often have harmonics throughout the spectrum, they're harder to remove. Experiment with different combinations of the three until you get the best results... and don't expect miracles on particularly noisy signals.

The Notch filter depends on system timing. It'll work properly when the DSP4000 is set to a precise 44.1 kHz or 48 kHz sample rate, but may have problems at other frequencies. (If you want to accommodate other hum or sample frequencies, set C\_CONSTANT Tune in the Patch editor.)

### 7. Sfx Filter/Compress

Extremely sharp hi/lo cutoff filter followed by a stereo compressor. Use the Presets (Table Radio / Pocket Radio / The Shadow) as effects or as starting points for your own settings.

If you want just the filter, set the compressor's Threshold to 0 dB. To use just the compressor, set LoCut and HiCut to 40 Hz and 19 kHz.

### 8. Simple Compressor

Basic, tight little one-knob stereo compressor with compression meter and channel linking. Adjust More until you've got enough.

The processing takes 3/1000 second not enough to be noticeable, but it'll cause flanging if the output is mixed with the input.

### 9. Simple Equalizer

Anything but simple. While it looks like a four-band graphic, you can change any frequency as well as the bandwidth of the two midranges. The O`LOAD indicator samples the level at various points, and bounces if your settings drive the signal into clipping. If this happens, lower the input level.

### 10. Stereo Simulator

Makes mono signals into stereo, using allpass filters and split-band processing to keep the individual outputs sounding good. It avoids the 'doorspring' and thinness you get on individual channels with other simulators, and is fully mono-compatible.

### 11. Stereo Spreader

Makes stereo wider, with two separate processes. Center Suppress adds a static widening by reducing the center: it's most useful for acoustic recordings. Dynamic Pan brings up the louder side, good for pop music with a bass or drum on one side. Of course, you can mix the two effects in any proportion. Extreme combinations of settings will warn you to check mono compatibility.

There's a <Test> button to make checking easier.

### 12. Super Punch

Here's a general-purpose mix maximizer, with lots of tunability for advanced production gurus. The author has used it as the final processing on just about every mix for the past year, and saves differently-tuned versions for different clients and media.

Left and right inputs are de-ess'd separately, then matrixed and sent through a gentle compressor and hard limiter. The result is dematrixed, equalized, and gated.

### 13. Three Band Compress

Most useful on music, to make the mix fuller. Set the Tweaks by ear or by watching the three meters, and then adjust Output so the overall level matches when you press Bypass. If you add too much high-end processing you might bring up hiss from the original recording; if this happens raise the HF Gate.

## 9: Delays

### 1. Ducked Delays

Repeating echoes that get out of the way when the input is above a certain threshold. Adjust Delay for rhythm, and Duck for sensitivity. Use with mono or stereo inputs. The echoes bounce from side to side on the output.

### 2. Easy Chorus

Classic pop-music effect uses multiple vibratos to turn one sound into many. Adds thickness, richness, and widening. Use with mono or stereo inputs; matrixing is added to stereo to preserve the image.

### 3. Easy Phaser

Adds deep wooshing effect to any sound, but it's particularly good on broadband signals (full mixes, voices, and synthesizers). Make the effect sharper with the Depth control. Choose Spin mode for manual effects while you rotate the DSP4000's front-panel knob, or Automatic for continuous phasing with adjustable Speed.

### 4. Long Delay w/ Loop

Mono inputs are delayed up to five seconds. Adjusting Delay while a sound is being processed adds interesting pitch effects.

Press <Trap> to record up to five seconds and have it repeat forever.

## 10: Echoes

Each of these effects has a <Mute Inp> button to turn off the input suddenly, so you can check the echo decay. You can also use this button to end a sound while adding a smooth ringout. All echoes have selectable right/left/mono input switch and stereo output. Those with additional "Stereo" input selection have true stereo processing.

### 1 Basic Stereo Echo

Big room echo, for use with mono or stereo input.

### 2. Big Church

Very large room with warm sound.

### 3. Classroom

Tight, warm echo with wooden walls and floor.

### 4. Crypt Echo

Very big, very full, but still intelligible.

### 5. Infinite Corridor

Big and bright with medium-long decay.

### 6. Kitchen Reverb

Medium room with hard walls.

### 7. Plate Reverb

Classic tight, dense studio echo, good for voice or music. Mono or stereo input.

### 8. Spring Reverb

The pre-digital favorite, complete with boinginess. Found in guitar amps and most 1960s rock radio stations. Mono or stereo input.

### 9. Tape Reverb

Back in the days when a production room meant two tape recorders and a cart machine, we sometimes added echo by mixing the 'tape' output of a deck with its input signal. (Sometimes this was the unintentional effect of a bad power supply filter.)

This emulates that effect, including the cumulative high-end loss and tape noise, tuned for studio-deck head spacing and with selectable speed. Mono or stereo in; each output is processed separately. Truly retro, man.

### 10. Tile Men's Room

Very fast, dense reverb. Mono or stereo input.

### 11. Union Station

Big, BIG warm room. (It's even bigger than its name, but we couldn't fit Grand Central Station in the display.)

# Troubleshooting

## Error message when you try to load a program

Make sure you have Version 2.100 or higher of the DSP4000's operating system. Check using <Info> on the Setup menu, and contact Eventide if you need an upgrade.

Make sure you're trying to load the program from the original factory card, and not a copy.

## You don't hear an effect, or the effect is noisy or weak

Check <Mix Mode> in the Levels area. The DSP4000 should be in wet Studio mode, not mixed Guitar mode. Make sure the unit isn't in Bypass mode.

Also, make sure there's sufficient level coming in. The Input bargraphs should be at least two-thirds full. Use the proper analog input connectors XLR for +4 dBm, or phone for -10 dBu. Also check all the Level settings, and don't lower them unless you hear clipping.

If you have to lower Levels significantly to avoid clipping, you're throwing bits away and won't get the UltraHarmonizer's full performance. Reduce the level at the source, or add an analog pad.

## Hollow, flanged, or echoed sound on every patch

Check <Mix Mode> to make sure unit is in Studio mode. If you still hear the problem the DSP4000's input is somehow being mixed with to its own output, probably through your board or DAW.

## Clipping or thumping

The input is too loud in the DSP4000: check the clip lights, and lower the input signal at the source.

Some patches have a lot of internal gain manipulation. Try lowering the input gain 3 or 6 dB, even if the clip light isn't flashing.

If problem continues, you're probably overloading the next device in the signal chain. Lower its input level or add a pad.

