Transoniq Hacker

The Independent News Magazine for Ensoniq Users

Keyboard Scaling for Fun and Profit

Sam S. Mims

Keyboard scaling is a wonderful thing. Now, I'm not talking about those musical exercises the piano lady made you play each week. ("Play me an F# minor scale with both hands, young man, up two octaves and back down. You did practice it, didn't you?") [TH — Editrix/piano teacher Jane rolls her eyes.] No, instead, I'm talking about the Keyboard Scaling feature found on most every synthesizer since the days of Moog and Arp.

The Minimoog sported two Keyboard Control switches that would allow you to apply discreet amounts of keyboard scaling to the filter. These days, things are a lot more versatile. Ensoniq, in particular, uses keyboard scaling (usually encrypted as KBD, or KEYBD) as a modulator which can be routed darn near anywhere and applied in a wide range of amounts, both positive and negative. How can that possibly be fun or profitable, you ask? Well, let's examine further....

The original idea behind keyboard scaling, and still its most useful function today, is to add a bit of ooomph to the filter as notes are played higher up the keyboard. In other words, let's say you create a big, fat sawtooth brass patch that rattles the rafters down low. Imagine that the filter cutoff frequency is set to 100 Hz or something, which means that the filter is not letting any frequencies over 100 Hz slip through. If the filter cutoff frequency were unchanging, when higher notes were played, still nothing over 100 Hz would get through, and high notes would be pretty much silent as a result. Keyboard scaling lets the filter cutoff frequency track the keyboard, so that when higher notes are played, the cutoff frequency is raised as well, so that all notes will seem to play with a balanced timbre.

Keyboard scaling is also commonly used to emphasize higher notes even more than lower notes. A trumpet, for instance, is much brighter when played higher, as it takes a lot more air and effort to get those high notes out. To mimic this in a synth patch, the keyboard scaling would be set to open the filter even more as higher notes are played.

With the modulation possibilities on Ensoniq keyboards, however, there is so much more that can be done with keyboard scaling. The most utilitarian func-

In This Issue ...

Articles:

Keyboard Scaling for Fun and Profit
Sam Mims ..... cover

Personalizing Your KT-76 or KT-88
Robby Berman 4

SQ/KS/KT Sounds: Sawing Analogs
Mark Clifton 6

Rhodes's Rhodes
Jeff Rhodes 8

Cheap Junk
Tony Ferrara 11

Five Gets (Maybe 6) for Classic Loopers
Pat Finnigan 13

The DP/4 and MIDI
Steve Byhurst 14

Bifurcated Boards – SQ-80/ESQ-1
Kirk Slinkard 17

Reviews:

Tech Star – Sample Collection Sets
Robby Berman 15

Basement Tapes: Bird & Surface Noise
Daniel Mandel 23

Regular Stuff:

Random Notes 2
Ensoniq Clinic Dates 3
Transoniq-Net 5

Hacker Reinitialization – SQ/KS/KT Series Subtractive Synthesis
Clark Salisbury 20

Classifieds 24

The Interface 25
Current O.S. 30
Hacker Booteeq 31

tion I have found is using the keyboard scaling to modulate the output. Even the ESQ-1 allows you to do this in a wonderful fashion, applying either negative or positive amounts of scaling. I have used this to create a split patch without using the Split/Layer page at all. Simply fade one oscillator out at the upper end of the keyboard, and fade the other ones in, all with the KBD or KBD2 modulation on the output.

The newer Ensoniq synths allow you to specify a key zone in which the keyboard scaling works. This is particularly handy for fading out a wave at the top of its range, when it starts to suffer from aliasing. For an illustration, play the factory FOLK-FLUTE patch on a TS-10; you'll hear noticeable aliasing noise on the top key. Now, select the CHIFFLUTE wave, and go to the Output page. Set the KBD-SCALE to -98, which fades the sound out rapidly as higher keys are played, and then set the key zone (LO/HI KEY) from C6 to C8, which restricts the keyboard scaling effect to this area of the keyboard. Now check out that highest note. It still has a little bit of noise (from the other waveform), but is much improved. (Solo just the CHIFFLUTE wave to hear how the wave dramatically fades out up high.)

You can apply keyboard scaling to the pitch, to affect the tuning of a patch, in order to do microtonal things. One of the first articles I wrote for the Hacker, back in February 1987, showed how to do this on the ESQ-1, even to the extent of reversing the keyboard such that the lower one played, the higher the pitches got. This doesn't work, incidentally, on the TS boards. Using KBD as a modulator with a mod amount of -99 on the Pitch Mods page merely negates the keyboard tracking, leaving every key playing the same pitch. (Of course, you always have the pitch table to do any of these weird things that you might want to.)

A nice, though subtle, effect is to use keyboard scaling as a modulator of the LFO's rate, when programming a horn or woodwind patch with vibrato. This way, higher notes will have a slightly faster vibrato than lower notes, adding a degree of realism to the patch. In general, a slight bit of keyboard scaling applied to any number of sources adds a randomness that is important in creating animated, non-static sounds. In programming a pad, for instance, I might have different waves sweeping back and forth in the stereo field, and that motion (via the LFO) can be randomized by applying KBD to the LFO rates in varying amounts.

In the sampler world, keyboard scaling has worked wonderfully for tracking the envelope times when I've done sound effects samples. Let's say I have a sample of a church bell, but the real sound is longer than my memory allows me to capture. In other words, when the sample memory runs out, the bell is still ringing, and the sample then cuts off quite abruptly and unnaturally. It is a simple matter to program an envelope that fades out the bell nicely just as the sample ends. However, what happens when that sample is played back a fifth higher? Now, the sample ends much quicker, but the envelope takes just as long to do the fade-out. The result: another abrupt and unnatural cutoff. The solution: press Edit-Env 3, and scroll to the KBD TIME SCALING page. Set it to +38, then program the envelope to work correctly. It will now translate to every other key just fine.

Keyboard scaling isn't the sexiest feature on any keyboard, but you can see that it sure is a handy thing, especially when used creatively. Now, isn't that a lot of fun? As far as making a profit goes, I'll guess you'll have to program and sell some sounds or something. Or maybe write an article about keyboard scaling.... ▬

Bio: Sam Mims is a professional keyboardist and programmer, and the owner of Syntaur Productions in Houston. He currently works with Malaysian pop star Zainal Abidin, and tours throughout the world.

Front Panel

RND (♪♪♪)

Ensoniq Announcements

In a break from their usual policy, Ensoniq is pre-announcing the development of the **1682-fx** mixing board. Projected to ship in January, the **1682-fx** is a 16-channel, 8-bus rackmountable mixer with onboard effects. It is designed to provide you with a full-featured recording mixer that can be rack-mounted, for the ultimate in portability. Top features include:

- 16 channels (32 total inputs for mixdown)
  with input trim, input overload LED, pan/balance, mute
- 8 mono channels
  with 3-band EQ (hi/lo shelving +/- 15 dB, 12 kHz high, 80 Hz low, sweepable mid - 200 to 8 kHz, +/- 15 dB, bypass)
- 4 stereo channels
  with hi/lo shelving EQ (+/- 15 dB, 12 kHz high, 80 Hz low)
- High-quality mic preamps on channels 1-8
- Phantom power
- Phase switch on channels 1 and 5
- 60 mm faders
- Solo-in-place (post pan)
  effective on all channels, effects returns, tape returns, and busses
- Insert points on channels 1-8, busses 1-8, and L/R (mains)
- All balanced inputs
- all insert points are noise-cancelling
- CD and phono inputs

- 8 busses (with solo-in-place, insert points, and mute switches)
- 4 Aux sends
  3 stereo (post)/1 mono (pre or post)
  4 stereo effects returns (with bus assign, solo-in-place, and mute switches)
- 8 tape returns (+4/-10 switchable, with solo-in-place and mute switches)
- 8 flip switches (1 per tape return)
  routes tape returns to channels 1-8 (for access to EQ) / routes channels 1-8 to tape returns
- 2-track send-return
  +4/-10 switchable
- 24-bit, true stereo in/out
- 1 ESP chip (same as in our DP/4+ and DP/2 effects processors)
  Over 35 algorithms
  384 Presets (3 banks of 128)
- MIDI In (for receiving bank/program changes)
- Ground-compensated outputs
- Special sampler outputs
  eliminates feedback when routing multiple channels (up to entire mixer output) to sampler with monitor thru
- 2 headphone outputs
  1) front panel (stereo)
  2) mirror of Aux 1 (mono) for cue send
- Control room outputs
  with mute switch (doesnt affect 2-track or headphone outputs)
- 2 mono switches
  1) switches control room outputs to mono
  2) monos frequencies below 100 Hz on L/R mix output
- Talkback mic (assignable to Aux 1 or busses 1-8)
- 2 twelve-segment LEDs (switchable to monitor any 2 busses, L/R mains, or any soloed channel)
- Multi-position jack pod for tabletop or rack mounting (10 spaces)
- External 2U rack power supply
- DB-37 expansion-bus connector (compatible with Mackie tm 8-bus expander)

The 1682-fx is projected to retail for under $2500. More news when it's ready to ship — start saving now!

Hacker News

Good news for aol members who receive *eTH* — aol is now able to receive the e-mail *Hacker* complete in one big file. We'll be changing our mailing program to reflect this. Please let us know if for some reason you'd prefer to get *eTH* in smaller bundles.

Speaking of aol... there's an aol user going by the name "transoniq@aol.com." This is *NOT* us.

French readers may want to check out the French Ensoniq fanzine, *Ensoniq Spirit Club*. Contact: Philippe Lefevre, 25 rue des Chenes, 82340 Dunes, France.

And finally — we made a little goof in last month's Hypersoniq announcement for the new *KT Set 1* from Syntaur. The correct price for the PCMCIA card version is $97.95. Apologies to Syntaur and any confused customers.

Ensoniq Clinic Dates

Arizona
11/17 Guitar Etc. — Tuscon

California
11/07 Nadines — Hollywood
11/08 Trill Music — Riverside
11/09 Music Mart — San Diego
11/14 Stockdale Music — Bakersfield
11/15 American Music — Fresno
11/16 Guitar Center — San Bernadino
11/21 Guitar Center — Covina
11/29 Professional Sound — San Diego

Connecticut
11/25 Caruso Music — New London

Georgia
11/21 Atlanta Discount Music — Atlanta

Illinois
11/08 Byassee Keyboards — Marion
11/09 Samuel Music — Effingham

Indiana
11/06 Conservatory of Music — Terre Haute
11/07 Opus 1 — Evansville

Louisiana
12/05 Be Bop Music — Baton Rouge
12/07 Sound Chek — Metairie
12/12 Lafayette's Prosound — Lafayette

Maryland
11/14 Bill's Music House — Baltimore

Massachusetts
11/07 Falcetti Music — Springfield
11/28 Rick's Music World — Swansea

Missouri
11/09 Big Dude's Music City — Kansas City
11/14 McMurray Music — St. Louis
11/16 Sounds Great — Springfield

Nevada
11/24 Pro Music & Drum 1 — Las Vegas

New Jersey
11/06 Dave Phillips Music — Phillipsburg
11/09 Jack's Musical Instruments — Red Bank

New York
11/15 McNeil Music — Vestal
11/16 Costello Music — Fredonia
12/07 Unistage Music — Buffalo

North Carolina
11/15 Music Loft — Greensboro

Ohio
11/08 Moeller Music — West Chester
11/09 Marion Music — Marion
11/21 Lentine's Music — Richmond Heights

Oklahoma
11/07 Music City West — Tulsa

Oregon
11/08 Portland Music — Portland
11/09 Keyboard Associates — Eugene

Pennsylvania
11/15 Menchey Music — York
12/06 Osiecki Brothers Music — Erie

Texas
11/28 H&H Music (Willowbrook) — Houston

Vermont
11/21 Advance Music Systems — Burlington

Virginia
11/16 Virginia Music — Richmond

Washington
11/07 Music 6000 — Olympia

Wisconsin
11/21 Henri's Music — Green Bay

Handiwork Personalizing Your KT-76 or KT-88

Part II: System*MIDI

Robby Berman

Hi again. Time to wend our way further through the System*MIDI landscape of our KTs in order to find ourselves a more comfortable way of musical life. When we left off, we had traversed the mighty tuning page, climbed the towering pitch bend and swam (swum? swimmed?) the raging pitch tables. No need backtracking now, eh, pioneers?

Let's select a Sound to work with. Press the Select Sound button. Press the Bank button just below it until you've got the little "r:" in the upper left-hand corner of the display. Press the button above the "0" and the button below the "2" to get to Studio Keys, the Sound in ROM location 02. Press the System*MIDI button and then the button below the number "1." The upper line on the display should be flashing. If it's not, press the left arrow button once.

To Thine Fingerbones Be True

The first parameter we see a-flashing here is "Touch." Your KT wants to know how hard you play, since many of the Sounds in the KT change as you play harder or softer, and it seeks only to be your obedient servant. Sounds commonly get louder with hard keystrikes and quieter with soft ones; some get brighter when you play with full force and smoother when you lay back. And yet we all play with different touches, with differing amounts of force — what may be your hardest keystrike would be someone else's softest. The Touch parameter allows you to customize the KT so that when you play as hard as you personally feel comfortable playing, the Sounds respond properly.

In the MIDI world, the force you play with is referred to as "velocity," so most of the settings you'll find here have "VEL" (for "velocity") in their names. Use the up or down buttons to set Touch to SYNTH VEL1. Play a Middle C on the keyboard very softly and listen to what it sounds like. Now gradually play harder and harder and listen to how the sound changes: Studio Keys gets louder and brighter with harder keystrikes (aka "greater velocity"). Now press the up button to set Touch to SYNTH VEL6. Play some more and see if you can feel how much harder you have to play to get Studio Keys to its fullest volume and brightness. Unless you're a mighty, mighty muscled musician, you're likely to find this tiring, real quick.

So what's a spud to do? Well, at SYNTH VEL1, the lowest SYNTH VEL setting, you can play quite gently and still get all the dynamics available in Studio Keys; of course, you may find that you have to hold back your playing style to keep notes from honking out too loudly when you least expect (or desire) them to. On the other hand, to make Studio Keys work for you at SYNTH VEL6, you'd need hands of steel to maintain such a high degree of force for very long.

Fortunately, there are all the steps in between. To figure out which one is right for you, try them all. Play normally at each setting; you'll soon find the one that lets you play comfortably and still get at the expressivity programmed into Studio Keys. Ensoniq has set up their Sounds so that once you find a Touch setting that works with one sound, you've probably found the one that'll work with them all.

Readers with over-ambitious (or under-coordinated) button-pressing fingers may have noticed that there are other settings below and above SYNTH VEL1-6.

The settings below are PIANO VEL1 through PIANO VEL6. They're identical to the SYNTH VELs, with one key difference (Ow, I'm sorry, I didn't mean it!): With the PIANO settings, in order to emulate the touch of a real 88, extremely soft keystrikes produce, well, nut hin' — just as they do on a real piano — whereas, with the SYNTH settings, extremely soft strikes produce extremely soft notes.

The two settings above the SYNTH VEL suite (by the seashore) are FIXED V 64 and FIXED V127, for "Fixed Velocity 64" and "Fixed Velocity 127." Remember that we said that playing force is described in terms of velocity? Well, velocity is measured on a scale of 0 to 127. These two options allow you to set the keyboard so that, no matter how hard or soft you play, notes will sound as if you had struck the keyboard exactly half as

hard as possible — with FIXED V 64 — or as if you were banging the poor thing with a large mallet-FIXED V127. This can be handy when you want every note to have exactly the same volume or timbral quality, such as when you're sequencing snare drum or bass drum beats. It's also handy for achieving that robotic, synthetic quality so many people detest (and which, therefore, you may want to produce).

Transoniq-Net
HELP WITH QUESTIONS

All of the individuals listed below are *volunteers*! Please take that into consideration when calling. If you get a recording and leave a message, let 'em know if it's okay to call back collect (this will greatly increase your chances of getting a return call).

All Ensoniq Gear – Ensoniq Customer Service. 9:30 am to noon, 1:15 pm to 6:30 pm EST Monday to Friday. 610-647-3930. Ensoniq's Fax On Demand line, (1-800-257-1439) can also be used to retrieve specs, OS info, hard-drive info, and the like.

All Ensoniq Gear – Electric Factory (Ensoniq's Australia distributor). E-mail address: elfa@ozemail.com.au; their web site at http://www.ozemail.com.au/~elfa; or e-mail their resident clinician, Michael Allen, at mallen@geko.com.au. Phone calls, Business hours – Victoria. (03) 480-5988.

All Ensoniq Gear – The Electric Factory in New Zealand, phone (64) 9-443-5916, fax (64) 9-443-5893, or e-mail geoffm@elfa.co.nz (Geoff Mason).

TS Questions – Pat Esslinger, Internet: pate@execpc.com, Compuserve: 74240,1562, or AOL: ESSLIP.

TS, VFX, and SD-1 Questions – Stuart Hosking, stuh@ozemail.com.au.

MIDI users and ASR-10 Questions – Ariel and Meiri Dvorjetski, Internet: s3761921@techst02.technion.ac.il, or dvorjet@techunix.technion.ac.il. You can also call Sincopated BBS at (Israel country code: 972) 4-776035, 24 hours, 28.8K Modem. Please Login as: ENSONIQ, Password: MIDI.

SD-1 Questions – Philip Magnotta, 401-467-4357, 4 pm – 12:30 EST.

VFX Sound Programming Questions – Dara Jones, Compuserve: 71055,1113 or Internet: ddjones@netcom.com or call 214-361-0829.

SD-1, DP/4, ASR-10 Questions – John Cox, 609-888-5519, (NJ) 5pm – 8 pm EST weekdays. Any time weekends.

SQ-80, VFX Questions – Robert Romano, 607-898-4868. Any ol' time (within reason) EST.

Hard Drives & Drive Systems, Studios, & Computers – Rob Feiner, Cinetunes. 914-963-5818. 11am–3pm EST. Compuserve: 71024,1255.

EPS, EPS-16 PLUS, & ASR-10 Questions – Garth Hjelte. Rubber Chicken Software. Call anytime. If message, 24-hour callback. (305) 792-9231. Compuserve: 72203,2303.

ESQ-1 AND SQ-80 Questions – Tom McCaffrey. ESQUPA. 215-830-0241, before 11 pm Eastern Time.

EPS/MIRAGE/ESQ/SQ-80 M.U.G. 24-Hour Hotline – 212-465-3430. Leave name, number, address. 24-hr Callback.

MIDI Users – Eric Baragar, Canadian MIDI Users Group, (613) 392- 6296 during business hours, Eastern Time (Toronto, ONT) or call MIDILINE BBS at (613) 966-6823 24 hours.

SQ-1, KS-32, SD-1, SCSI & hard drive Questions – Pat Finnigan, 317-462-8446. 8:00 am to 10:00 pm EST.

ESQ-1, MIDI & Computers – Joe Slater, (404) 925-8881. EST.

What We Work Best Under

Once you've finished finding your own optimal Touch setting, press the right arrow button once-and feel the Pressure building.

The KT keyboards can sense how hard their keys are being pressed down, and can use that awareness as a device to change the quality of the Sound being played. This can be programmed into a Sound when you want it to change without having to take your hands off the keyboard to twiddle a wheel or poke a button somewhere.

Let's demonstrate this (not the twiddling and poking part). Press the Select Sound button, and then the lower 5 button to call up the ROM 05 Sound Breathy Tenor. Play Middle C_3 and then press down on the keyboard. See? With pressure, the note acquires a vibrato.

The Pressure parameter functions much like Touch did. The question the KT wants answered is: how hard do you wanna have to press the keyboard for the KT to notice what you're doing?

Press the System*MIDI button. Press the up button to set Pressure to HARD. Now play Middle C and notice how strongly you've got to dig in to get the vibrato happening. Since this can be a subtle thing to gauge, set Pressure to SOFT and, as a comparison, check out how easily pressure can be brought in with that setting. Just as with Touch, you'll have to experiment with all of the Pressure options to find the one that lets you use pressure when you want to, and without inadvertently switching it on should your fingers tarry a moment or two too long.

That's it until our next installment, when we get to play KT footsie! ▬

Bio: Robby Berman is a musician waiting to be swallowed up the brilliant autumnal splendor of New York's Mid-Hudson Valley. His most recent album is "Rings and Rings."

How Sounds Work

Part XVI: Sawing Analogs

Mark Clifton

Analog flourished while I incubated. Nestled in the womb, my only musical choices spanning heartbeat and the occasional curious tap tap from the outside, I was, you could say, somewhat behind on the latest technology. While the big kids, the really big kids, trekked to the local music store to play with their new polyphonic wonder toys, I was hanging out in the toddler section of the neighborhood Toys 'R' Us, banging on rainbow-colored xylophones. As for my long relationship with Ensoniq, well, I was around eight years old when the Mirage came out. *[Ed. — Sheesh.]* My axe of choice at that time had half-size keys and a picture of Kermit the Frog on it.

The time did come, though, when I found a nice little music store to make my playground. Quite a big music store, actually, packed floor to ceiling with wondrous, appallingly expensive mirth, an FAO Schwartz for the tonally-inclined. It was also, by some strange twist of economic fate, the only registered Ensoniq dealer within a hundred miles of my digs in Northern Virginia, not exactly the most sparse of population centers. The forty-five minute drive I was forced to endure was well worth it, though, as I got to hobnob with all sorts of members of the musical elite, real musicians, some of whom played on actual stages and record albums for a living (yippee!). And, of course, their wares: DX's and D-50's, K-250's and S-50's, S-1000's, M-1's, EPS's and VFX's (it was around that time), all ripe and quivering for the touch of my greasy fingers.

This place was cool, no doubt about it, but the real juicy red apple was right next door in the equally spacious room labeled "Used Keyboards." Here they had everything from broken $100 Casio Cheesemasters to floor models of the latest turbocharged studio rocket-synths. And it was here that I played my first Minimoog (and a couple other of Mr. M's namesakes), my first Rhodes, my first Wurlitzer, my first cheesy combo organ, and a whole heap of Junos. It was here that I fell in love with analog and all those glory days of yore where (cue Grumpy Old Man voice), "If you weren't careful you could program a sound that would pop your eardrums right out of your head, take the fingers right of your hand, and cause half the whales on the North Atlantic coast to beach. And no matter how hard you tried those oscillators would always go out of tune. Pretty soon you were waving your bloody fingerless hands around your bloody dripping head surrounded by a hundred flopping beached whales and oscillators that fluctuated like a UFO videotape and you loved it!" I did truly love it, the expression afforded by those little knobs and patch cables, the physicality of actual pulsating oscillators, electricity translated directly to sound, no samples or bits of code to decipher, just wires and transistors — real electronic music. And the opportunity for sonic deviance, of course, unbelievable!

The Used Keyboard department has since been moved to another room and the vintage aspect of its lineup has been pared down considerably, probably due to the decreased supply and increased worth of its elderly former denizens. What seem to be worthless old bones to the average individual can be priceless treasure to the anthropologist, and everyone seems to be into anthropology these days. So now I go to look at the new stuff, the Wavedrums and Nord Leads and Turbo ASRs, while turning to current available technology to resurrect that old sound, specifically, my loyal SQ-1. Of course, it has always been insisted that analog, like most of the other non-digital instruments we've explored here, can never be adequately sampled or imitated. This is an old, completely valid argument that I won't even attempt to refute. It is accepted that the sounds we create here must be a sort of cyborg variant, as realistic as possible in appearance and character despite the chips and servos that lie just beneath their skin.

"UFO Bass" is a buzzy, gnashing, fat Oberheim-ish timbre that, despite its name, also makes a potent lead sound in its upper register. I chose this sound because it displays all the basics of analog character and programming as well as being a good all purpose Swiss Army Knife type patch for your arsenal. Everyone should have at least one buzzy analog synth in their sonic lineup, no matter what kind of music they do. Try this one for your next portentous 20-minute prog solo, or play some pentatonics in the lower octaves and check yourself into industrial heaven. Programming analog sounds is also a good way to learn the basics of general synth programming, since most modern synthesizers use the same parameters and signal routings as their forefathers. Only the waveform sources and a few disparate parameters have changed.

Oscillators 1 and 2 are basically identical, though one has

been tuned down an octave and both are tuned apart a couple of cents for a fat, chorused unison effect. Oscillator 3 was mainly added to further beef up the sound, especially in the lower range. This is supposed to be a bass, after all. Glide has been set to MINIMODE, which simulates a Minimoog's monophonic operation. Most analog synths, until the later days, were monophonic. Polyphonic operation was limited to two, maybe four four voices if you were rich enough to pay for the extra oscillators.

Sawtooth, the overwhelming analog waveform of choice, was used as the basis for "UFO Bass," though the patch is really meant as a template onto which you can apply any waveform you want. Most analog synths in the universe were capable of creating only five waveforms: saw, square, sine, pulse and random noise. Most of these, with the exception of pulse, are available in the SQ's wavetable under the WAVEFORM category (the Noise Loop wave is located in the INHARMONIC section). Pulse waves sound somewhat like square waves, though their timbre can be changed by varying the width of the pulses. Try the Pulse-X Transwaves for imitating a variety of the pulse wave's characteristics. If the SQs analog waveforms strike you as a bit weak or you want the sound of resonant filters, which most analog synths had but the SQ lacks, try transwaves as livelier stand-ins for the usual choices. Resonant filter sweeps and the like can be imitated by sweeping the transwave with the Mod parameter located in the Waveform section. Try using the modwheel, modpedal or timbre slider as your modulators. Envelope 2, in tandem with the usual filter mod duties, can also be called on (even subtly, such as to "whaaa" an attack) to create the response of resonant filters. You will then have your filters and your transwaves sweeping at the same time, making them sound like one integrated whole, as if only a single knob is being twisted.

Okay, so we have the waveforms all lined up, but there still seems to be something missing, a certain "liveliness" in the sawtooth samples. This is where a bit of completely modern programming comes in. You will notice that I have once again used the old "waveform shifting" trick as outlined by Jim Grote a good half-decade ago in issue 66 ("VFX Sawtooth Tips") and myself in installments I and III of this series (issues 90 and 94, respectively). Basically, the waveform's pitch has been permanently bent upwards with a Pitch Mod on FULL ON with a value of +62 (approximately an octave) while the waveform's keyrange has been shifted down an octave using the Oct-Semi-Fine tuning controls located at the beginning of the Pitch section. That's about all I'll say about it in this article, and I invite you to refer back to those other three articles for the

Prog: UFO BASS

By: Mark Clifton

WAVE	1	2	3
Select Voice	On	On	On
Wave Class	Waveform	Waveform	Waveform
Wave	Saw	Saw	Saw
Delay Time	000	000	000
Wave Direction	-	-	-
Start Index	-	-	-
MODSCR	-	-	-
MODAMT	-	-	-
Restrk Decay	00	00	00

PITCH	1	2	3
Octave	-1	-2	-2
Semitone	+00	+00	+00
Fine	+03	-03	+00
ENV1	+00	+00	+00
LFO	+03	+03	+03
MODSCR	MaxOn	MaxOn	MaxOn
MODAMT	+62	+62	+62
KBD Ptch Track	On	On	On
Glide	Mini-Mode	Mini-Mode	Mini-Mode
Glide Time	00	00	00

ENV1	1	2	3
Initial	-	-	-
Peak	-	-	-
Break	-	-	-
Sustain	-	-	-
Attack	-	-	-
Decay 1	-	-	-
Decay 2	-	-	-
Release	-	-	-
Vel-Level	-	-	-
Vel-Attack	-	-	-
Vel Curve	-	-	-
Mode	-	-	-
KBD Track	-	-	-

LFO	1	2	3
LFO Speed	48	50	39
Noise Rate	00	00	00
Level	22	22	22
Delay	00	00	00
MODSRC	Wheel	Wheel	Wheel
Wave	Triangle	Triangle	Triangle
Restart	Off	Off	Off

FILTER	1	2	3
Filter 1	3Lo	3Lo	3Lo
Filter 2	1Hi	1Hi	1Lo
FC1 Cutoff	000	000	000
ENV 2	+99	+99	+99
FC1 KBD	+23	+23	+23
MODSCR	Pedal	Pedal	Pedal
MODAMT	-61	-61	-17
FC2 Cutoff	000	000	000
ENV2	+21	+21	+44
FC2 KBD	-13	-13	-13
FC1MOD-FC2	Off	Off	On

ENV2	1	2	3
Initial	99	99	99
Peak	99	99	99
Break	99	99	99
Sustain	99	99	99
Attack	00	00	00
Decay 1	00	00	00
Decay 2	00	00	00
Release	04	04	12
Vel-Level	33	33	33
Vel-Attack	00	00	00
Vel Curve	Lin	Lin	Lin
Mode	Norm	Norm	Norm
KBD Track	+00	+00	+00

AMP	1	2	3
Initial	99	99	99
Peak	99	99	99
Break	99	99	99
Sustain	99	99	99
Attack	00	00	00
Decay 1	00	00	00
Decay 2	00	00	00
Release	25	25	40
Vel-Level	19	19	19
Vel-Attack	00	00	00
Vel Curve	Lin	Lin	Lin
Mode	Norm	Norm	Norm
KBD Track	+00	+00	+00

OUTPUT	1	2	3
VOL	80	78	99
Boost	On	On	On
MODSRC	Off	Off	Off
MODAMT	-	-	-
KBD Scale	+00	+00	+00
Key Range	A0-C8	A0-C8	A0-C8
Output Bus	FX1	FX1	FX1
Priority	Med	Med	Med
Pan	-42	+42	+00
Vel window	>000	>000	>000

EFFECTS

8-VOICE CHORUS

FX-1	50
FX-2	50
Chorus Rate	22
Chorus Depth	26
Chorus Center	00
Feedback	+00
MOD (Dest)	FX1-Mix
BY (MODSRC)	ModPed
MODAMT	+99

pickier scientific details behind this procedure, but in the end it helps to produce a buzzier, more harmonically rich sound. This technique has traditionally been used with sawtooth sounds, but I've found that it works equally well for all of those analog waves, each of which could use a bit of perking up.

Simplicity is the key to programming good analog sounds. Modern conveniences should only be used to imitate old fashioned ones, such as using transwaves to simulate filter Q. Route as many parameters as you can to real-time controllers, such as the modwheel, modpedal or timbre slider. The more live tweaking of a sound you do the more it sounds like you have all of those sliders and knobs laid out at your disposal. Not everything is modulatable on the SQ that would have been on an analog synth, though, such as envelope times and LFO speeds, or even changing waveforms. Oh well, such is the folly of modern synth programming. Gone, at least for now, are the days of real-time sound sculpting and dynamics. Unless, of course, you feel like punching through reams of menus from your little LCD display while onstage playing your big solo (don't laugh, it can, and has been done — just not too often).

Fast jittery, out of sync LFOs, routed to the modwheel, serve to further beef up the sound (you know I like 'em big and juicy). The filters, at least on Oscillators 1 and 2, are wide open and flailing. Oscillator 3 is somewhat muted, serving to balance out the brightness of the other two. The filters are modulated entirely by Envelope two, mainly to get a distinctive "owww" (you see, programming analog is all about phonetics) damping sound on keyup. All filters are closed about two thirds of the way by the modpedal, allowing you to do sweeps with your foot. There is also a nice pad sound to be had if you put the modpedal all the way up and turn off the pitch glide for polyphonic operation.

Envelopes are bone simple, with hard attacks and tight releases. Feel free to mess with these, especially the attack, if you please. A very slight bit of velocity sensitivity has been programmed into both envelopes 1 and 2. Velocity sensitivity wasn't something that was very common in the analog domain, so if you're aiming for complete accuracy you might want to nix this parameter.

Effects were like potato chips in the days when analog flourished. If there's anything the '60s and '70s should be remembered for it should probably be a shamefully immoral and gratuitous overuse of flanging. So knock yourself out with the effects. Some purists like to keep their analog sounds dry or with just a hint of reverb. But hey, if you dig phasing and distortion and chorus and chains of twittering stomp boxes, that's cool. I personally chose the 8-Voice Chorusing for this one, mainly because I didn't think it was fat and obscene enough already. It also serves to add a nice warm resonance to the sound, further helping to simulate those analog filters. Chorusing amount is controlled by the modpedal, along with the filters. This gives that soft pad sound you get with pedal up a silkier, more voluptuous quality, surrounding it in a resonant cloud.

You can tell when you plug this sound in why everyone loves analog so much: it just sounds cool, like a synthesizer should. It's fun, it's offensive, and completely expressive, and, if you really have to bring that part up, kind of educational. File this one away with your B-3 sounds in that naughty cookie jar of chocolaty sonic decadence and I'll be back next month with another kind of chorusing. ▬

Rhodes's Rhodes

Jeff Rhodes

Haven't been around for a while... it's been the summer of broken hearts and broken hips. And mine's still broken (the hip, that is) or at least it still feels that way! The Medicine Men say stay off those steps to the studio as much as possible so of course I blindly obey... yeah, right.

Let's go back, way back, to the keyboard Mesozoic period. Particular to this period along with Return to Forever and Disco (they say it's coming back) was the Fender Rhodes and the Rhodes electric pianos. They were cumbersome examples of "pianos" that sounded nothing like a piano but rather like a cross between a bell and an electric guitar. They were heavy and broke down on a regular basis. But they became one of the most popular "portable" keyboards ever made. By the time John Travolta was Watchamatterwidyu'n in *Saturday Night Fever,* 8 out of 10 keyboard players were hooked on Stage and Suitcase (amp and speakers built in) Rhodes pianos.

By 1983, the last Rhodes piano rolled off the line and the

TS-10 Prog: CUT-RHODES

By: Jeff Rhodes

Notes &Special Settings: Wheel controls sound exchange (new buzzword). LFO assigned to pedal.

WAVES

	1	2	3	4	5	6
Wave	AnaWave	SawWave2	ElPiano1	AgogoBel		
Wave Class	Waveform	Waveform	Keyboard	Percussion		
Delay	0000	0000	0000	0000		
Shift/Index	00	00	00	00		
Direc/Modsrc	Forward	Forward	Forward	Forward		
Modamt	-	-	-	-		
Sample Start	00	00	00	00		
Start Modsrc	*Off*	*Off*	*Off*	*Off*		
Modamt	00	00	00	00		

MOD MIXER

	1	2	3	4	5	6
Src-1	-	-	-	-		
Src-2	-	-	-	-		
Src-2 Scale	-	-	-	-		
Shape	-	-	-	-		

PITCH

	1	2	3	4	5	6
Octave	-1	-1	-1	-1		
Semitone	+00	+00	+00	-07		
Fine	-01	-03	+04	+01		
Glidemode	None	Legato	None	None		
Glidetime	00	-13	00	00		

PITCH MODS

	1	2	3	4	5	6
Modsrc	Veloc	LFO	Veloc	LFO		
Modamt	+02	+03	+03	00		
Bend	Sys	Sys	Sys	Sys		
PitchTbl	System	System	System	System		
Env1	+01	-02	-03	00		
LFO	+01	+02	+01	00		

FILTER 1

	1	2	3	4	5	6
Mode	LoPass/3	LoPass/3	LoPass/3	LoPass/3		
Cutoff	013	000	045	000		
Kbd	+12	+12	+15	+10		
Modsrc	Veloc	Wheel	Veloc	Veloc		
Modamt	+85	+24	+60	+29		
Env2	+99	+60	+38	+99		

FILTER 2

	1	2	3	4	5	6
Mode	LoPass/1	LoPass/1	LoPass/1	LoPass/2		
Cutoff	000	000	000	000		
Kbd	00	00	00	00		
Modsrc	Veloc	*Off*	*Off*	*Off*		
Modamt	+12	-	-	-		
Env2	+99	+88	+99	+99		

OUTPUT

	1	2	3	4	5	6
Kbd Scale	+08	+03	+06	+22		
Lo/Hi Key	E1-G7	E1-G7	E1-G7	A2-G6+		
Vol (db)	+08	-37	-02	+04		
Modsrc	Pitch	Wheel	Wheel	Wheel		
Modamt	+44	+99	-85	-50		
Dest Bus	FX1	FX1	FX1	FX1		
Pan	+00	+00	+00	+00		
Modsrc	Pitch	LFO	LFO	*Off*		
Modamt	+32	+32	+29	-		
Voice Prior	Med	Lo	Hi	Hi		
Vel-Window	-	-	-	-		
Lo	000	000	000	000		
Hi	127	127	127	127		

LFO

	1	2	3	4	5	6
Rate	+15	+05	+13	-		
Modsrc	Pedal	Pedal	Pedal	-		
Modamt	+50	+83	+50	-		
Depth	75	+99	+65	-		
Modsrc	Pedal	Pedal	Pedal	-		
Modamt	+50	+50	+25	-		
Waveshape	Pos/Sine	Sine/Tri	Sine/Tri	-		
Restr Mode	On	On	On	-		
Phase	000	000	000	-		
Delay	00	00	00	-		
Noise Rate	00	00	00	-		

SELECT VOICE

00	1	2	3	4
0*	1		3	
*0		2		4
**	1			4

ENV1

	1	2	3	4	5	6
Attack	47	01	-	-		
Decay	82	25	-	-		
Decay 2	14	67	-	-		
Decay 3	35	20	-	-		
Release	10	50	-	-		
Peak	36	50	-	-		
Break 1	29	55	-	-		
Break 2	88	44	-	-		
Sustain	12	50	-	-		
Vel-Level	67	00	-	-		
Mode	Norm	Norm	-	-		
Vel Curve	QkRs	Cnvx1	-	-		
Kbd Track	+04	+00	-	-		
Vel-Attack	26	00	-	-		
Vel-Rels	40	00	-	-		

ENV2

	1	2	3	4	5	6
Attack	00	00	00	00		
Decay	20	25	23	10		
Decay 2	50	50	50	50		
Decay 3	70	70	70	60		
Release	26	26	26	20		
Peak	99	99	99	99		
Break 1	70	70	70	80		
Break 2	50	50	50	30		
Sustain	00	00	00	05		
Vel-Level	50	50	50	70		
Mode	Norm	Norm	Norm	Norm		
Vel Curve	Linear	Linear	Linear	Linear		
Kbd Track	+15	+15	+15	+25		
Vel-Attack	00	00	+00	+15		
Vel-Rels	00	00	+00	+20		

ENV3

	1	2	3	4	5	6
Attack	02	01	00	00		
Decay	25	25	25	15		
Decay 2	60	60	60	50		
Decay 3	60	60	60	60		
Release	30	33	28	20		
Peak	99	99	99	90		
Break 1	95	95	95	95		
Break 2	82	82	82	75		
Sustain	72	72	72	70		
Vel-Level	64	64	64	60		
Mode	Norm	Norm	Norm	Norm		
Vel Curve	Cnvx2	Cnvx2	Cnvx2	Cnvx2		
Kbd Track	+10	+10	+20	+10		
Vel-Attack	+00	+00	+00	+00		
Vel-Rels	+00	+00	+00	+00		

PGM CONTROL (Page 1)

Type	ElPiano
Option	*None*
Press	Key
Patch	Live
Restrike	20

PGM CONTROL (Pages 2 & 3)

Atck	+06	V1	00
Rels	+08	V2	+14
Bright	+20	V3	+14
Timbre	+15	V4	+20
Rate	00	V5	+06
XCtrl	00	V6	00

EFFECTS

Effect #	66
Variation #	User

USER EFFECT

EFFECT MIX Fx-1 VCF Dist = 99
Fx-2 VCF Dist = 83
DIST LEVEL In = 27 Out = 90
Bypass = Off Pre-EQ High Fc = 000
PRE-DIST VCF Fc = 88 Q = 08 Env Amt = +72
POST-DIST VCF Fc = 75 Q = 08 Env Amt = -11
ENV ATTACK = 600 msec RELEASE = 14 msec
MOD-1 Src = Veloc Dest = Post-Dist Env Amt Min = -12 Max = +83
MOD-1 Src = *Off*

name "Rhodes" was sold to Roland for some later use. The DX7 with its sine wave architecture and bell-like timbres re-created the Rhodes, but did it with an over-EQed Dyno-My Rhodes approach. (The Dyno-My Rhodes company supertuned the factory Rhodes, then fitted it with EQ, Chorus etc. If memory serves, this "treatment" ran over $3k. Whew!)

Today, in part because of those early DX7 patches, every synth company in the universe offers Rhodes patches in their modules and keyboards. This, natch, holds true for Ensoniq.

Many of the factory Rhodes patches included it the TS series are quite good. They tend, though, to have a DXish edge to them. (Even when they don't want to... this may be because our ears have been trained to "expect" this particular sound.) The old Rhodes worked with actual hammers. The hammers' hard rubber tips struck a thin metal rod called a tine, causing it to vibrate. The vibration was captured by a small pick-up at the tip of the tine. The harder you hit the key the more the tine vibrated, the louder the note. But often, new factory Rhodes boards had the tine and pick-up in a configuration that just made it sound muddy.

A lot of factory Rhodes owners went to great lengths to make their instruments come alive, paying particular attention to the high end. Moving the pick-ups, changing the position of the tine with regard to pick-up, even painting the hammer tips with nail polish were attempts to catch the higher frequencies. I even know a guy who hammered tacks into the hammer tips. Sound obsessive? Nah. Many of us combined this customization strategy with early chorus units and graphic or parametric EQs. All this stuff gave us the desired effect but it distorted like crazy. If you want some idea of what this sounded like, this listen to Chick Corea's *"Hymn of the Seventh Galaxy."*

Why all this background? Because it's important. "Cut Rhodes" sounds like the early George Duke Rhodes with just a touch of chorus. It's relatively thin with much of the bottom end EQed away. But it's highly percussive; you can hear those hammers strike. Also, it demonstrates that using alternate waveforms can provide surprising results. This patch is pretty straightforward.

Let's look at its makeup (with or without nail polish).

Voice 1 relies on the ANA-WAVE2. Its pitch is modulated slightly by Velocity and by Envelope 1 which causes some movement in the voice. Its pitch drifts back and forth adding to the chorusing effect. Both Filters 1 and 2 use Velocity as their MODSRC. The harmonic content of each note on the Rhodes changed with dynamics as it does on acoustic pianos. And the pitch was subject to amplitude; notes hit hardest changed a bit in pitch, both as the note was hit and as it decayed. Thus Voice 1's Output is modulated by Pitch.

The suitcase Rhodes had a warm stereo vibrato. Alas, we're limited to mono here because of our chosen effect #66 (user) VCF-- DISTORTION-- VCF. All LFO rates are fairly slow and on our TS (for voices 1, 2 and 3) the MODSRC = Pedal. The original had its speed and depth potentiometers mounted close to the keyboard, on the front panel to the far left. Both voices 1 and 2 are use Envelope 1 (each has an active Env 1 value on the PitchMods page).

ANA-WAVE2 and EL-PIANO 1 comprise the "body" of our Rhodes; the stringlike ANA-WAVE2 adds some warmth to "Cut-Rhodes." Be aware that many analog synths had to rely on similar waves to roughly approximate an electric piano. The AGOGO-BEL wave works really well for the simulation of the tine being struck by the hammer tip (as opposed to the EL-PIANO2 wave). The envelope values for voices 1, 2, 3 and 4 are very similar to one another. Really, the Rhodes had fairly simple ADSR structure. Note the shorter Decay(1) value for voice 4, the AGOGO-BEL.

A surprise. Voice 2, the SAW-WAVE, can only be heard (along with ANA-WAVE2) when the ModWheel is pushed forward. Its MODSRC=WHEEL, MODAMT=99 is on the Output Page. Also, on the Pitch Page, the Glidemode is employed (LEGATO) using a Glidetime of -13. The result is a classic poly-analog patch with a little portamento. Why this morphing? Who cares?

Effect #66 was chosen because A) it contains distortion and B) the VCF filter and Q are good for simulating the graphic and parametric EQ's of prehistory. Once again, since the Fender Rhodes was a dynamic instrument, the effect's Destination=POST-DIST ENV AMT is modulated with Velocity.

Try using "Cut-Rhodes" anywhere you'd usually choose a Rhodes, piano, Clavinet or guitar. ▬

Bio: Jeffrey Rhoads has been a keyboardist/composer on the Philadelphia Jazz and R + B scene for a period of time resembling forever. He has an interest in cinema and has developed some film courses. Jeff still believes in magic and longs for city lights.

Cheap Junk

Tony Ferrara

Welcome to the first in an occasional series dealing with sampling with your Mirage, EPS, EPS-16 PLUS, and ASR-10. The first two installments will differ sharply from most technical articles in that technical procedures are usually explained and discussed. Although I will be touching on these concepts, I am going to concentrate largely on what is being sampled. Here we go.

As a music student in college and grad school (Temple University College of Music, Columbia) I was exposed to many unusual ideas. Some I agreed with and some I thought were idiotic. One of my professors repeatedly stressed the idea that music usually lagged behind the other art forms (literature, poetry, and visual arts.) For example, Debussy's *Prelude to the Afternoon of a Faun* was inspired by the poem by Mallarme; the nationalist composer Mussorsky's *Pictures at an Exhibition* was inspired by paintings of Russian scenes and mythology, etc. I think I am discovering that my professor was right: Using "junk" as art has had precedents in the world of visual arts for many decades, as in the early paper collage works of Picasso, as in Robert Rauchenberg's pop art collages and "constructions," which consisted of old tires, machine parts, cans, etc.

Using aural "junk" or non-musical sound has its roots in the '60s and '70s from the academic genre of experimental electronic music, musique concrete. The most prominent example of this would be the *Poeme electronic* (1958) by the French/American composer, Edgar Varese, which successfully represented modern urban life in the Industrial Age by employing natural, industrial, and synthetic sounds in a carefully spliced and edited analog tape collage.

The current musical manifestation of this has an interesting twist. Now use is made of musical instruments long ago discarded as obsolete, and re-invigorating their timbral tone color palette by integration into the musical mainstream via the technology of sampling. In the fast- paced world of the contemporary record business, hip-hop and techno are currently gaining an ever-increasing market share. Especially ironic is the fact that the artists in question accomplished this by buying old stuff for a hundred bucks or so at a time when that was all they could afford. Now that many of these recording stars are leaders in record sales, these formerly "grungy" sounds are being used, edited, sampled, in some form or another in most of the high-end studios and playback sample synths in the music and recording industry. Need I mention some of the ROM waveforms found in your Ensoniq synth, as well as many of the samples from the EPS/ASR sound library? It's high time to examine exactly where some of these neat sounds are coming from, where you can get them, what to watch out for, and how to incorporate them into your own (ahem) tonal arsenal.

Way back in the ancient days before Waveform ROM, Digital Audio Tape, compact disks (and the Walkman, for that matter), giants roamed the earth. Keyboard-oriented bands with name like Emerson, Lake, and Palmer; Yes; Genesis, and Tangerine Dream and others travelled the world non-stop playing their music to sell-out crowds in stadiums that made the roman colosseum look small in comparison. They halted their nomadic wandering only long enough to record what was called a new "album" of their music which was duplicated onto large black plastic disks called LPs. Although Ensoniq was still just a twinkle in the eye of its founders, manufacturers large and small with names like Moog, ARP, Oberheim, Octave Electronics, and Sequential Circuits churned out analog mono and polyphonic synthesizers, drum machines, controllers, and voltage-controlled sequencers in order to feed the insatiable aural appetites of these musical giants, their fans, and the endless cover bands who imitated them. A universal protocol like MIDI was only a futuristic dream, with Control Voltage in proprietary, non-standardized values still the norm.

Now that we are well into the '90s the aforementioned companies, for the most part, are ancient history; the bands themselves, curiously enough, are back together. For the past ten years, much of this gear has languished in the basements and attics of people who were unable to sell it once models like the MIDI-equipped Yamaha DX-7 hit in 1984, as well as in the back storerooms of dealers who were unable to convince potential buyers of their great features and sound-generating capabilities.

Along the same line, I recall a local musical instrument dealer in the mid-'80s desperately trying to sell me on an ARP Avatar analog guitar synth as part of a new guitar purchase I was making. His asking price: $100, on an instrument which once listed for $2600. I passed on a deal that I would now jump on in a minute. Many of you may remember how the mere word "digital" when referring to syn-

thesizers and other hardware invoked semi-magical connotations. Now the tables are turned, with analog gear that has been sitting in the original shipping cartons for years commanding top dollar.

For our current purposes, we are going to adhere to three main criteria:

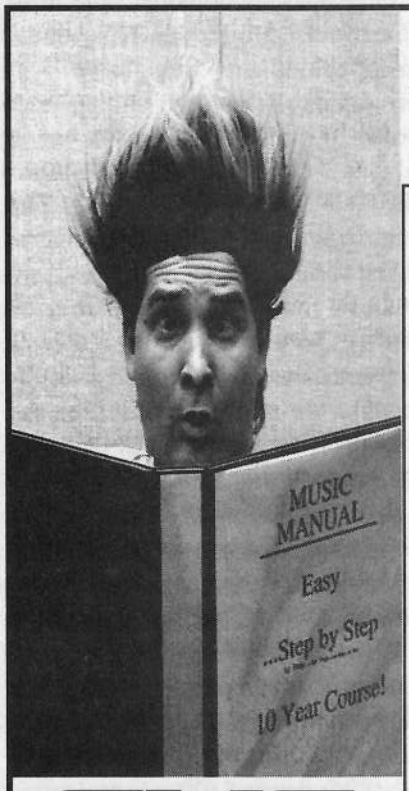
1) Look at the title of this article. I said cheap! — as in low cost. The units discussed in these first two articles will run you anything from $50 (beat up but functional) up to $400 or so (good to mint condition).

Some of you may not consider $400 (or perhaps somewhat less) to be exactly "cheap," but that's certainly relative to the vintage keyboard market as a whole, where Mellotrons and modulars by Moog and Arp are selling for up to several thousand dollars each. To put things in their proper perspective, the vintage guitar market has been thriving for many years, with good condition Fenders and Gibsons that originally sold for maybe a few hundred dollars or so potentially commanding ten times that figure on the current scene. To show you how big this can be, have you seen the recent Visa credit card commercial on television featuring Gruhn Guitars of Nashville, the Mecca of vintage guitar collectors?

2) Great programming flexibility, with great mileage as a sample source. Sure, a Fender Rhodes was a great sounding electric piano, but for the purposes of this discussion it is not really an ideal sample source, as the sound possibilities are not variable enough. The great thing about lower cost sample sources such as the the Moog Prodigy or ARP Odyssey is that although they only have two oscillators, you can still get a really fat sound through layering with your EPS, EPS-16 PLUS, or ASR-10 sampler.

3) Non-MIDI, which means its only real-time use would be as a performance instrument, as opposed to functioning as a tone module within a MIDI configuration. Sure, there are a number of control-voltage to MIDI converters on the market, but most people (myself included) prefer not to bother, and would rather sample. The cheapest that I've seen available in the U.S. is the MV-G8 MIDI and Control and Control Voltage Processor by PAIA, which sells direct for $399. Keep in mind, not all of the models that we will be talking about even have control voltage input. Three that come to mind immediately are the first rev. ARP Odyssey, the MOOG OPUS 3, as well as the Moog Prodigy. With these units, it's either sample to Dat/Mirage/EPS/EPS-16 Plus/ASR-10, or (horrors!) play them live to tape.

Next time: the models, the prices, etc. ▬



EVS
Effective Video Solutions

Blown Away By Manuals?
Video Help for Computer Music!

MUSIC SOFTWARE VIDEOS
Band-In-A-Box
Cubase
Cakewalk (5 videos)
Emagic (Coming Soon!)
Encore (2 videos)
Finale (8 videos)
Master Tracks Pro (2 videos)
MusicTime (2 videos)
MIDI Monster
Performer (2 videos)
Sequencing Drums
Nightingale

KEYBOARD VIDEOS
Casio CTK 650/750
Korg M1
Korg X3
Korg X5
Korg AX30G
Roland E-86
Roland GR-1
Roland TDE-7K
Roland JV-90
Roland DR-5
Yamaha QY20
Yamaha QY300
Yamaha PSR6000

OTHER PRODUCTS
CAL Tutor Diskette
Finale & Jazz Arr. (book with diskette)
Golden Age Font (Mac or Win disk for Finale)
Crescendo Font (Mac or Win disk for Finale)
Finale CD-ROM (Quick ref.-Mac Basics)
Band-in-a-Box Styles (Style disks & Fake disks)
Killer Drum Lix Vol 1-3 Double Bass Lessons (15 hot lix - 5 per video)
Home Recording (Volumes 1-3)

CALL 1-800-650-2427 FOR FREE CATALOG!

"EVS video tutorials are the best in the business..."
-Tom Johnson, Notation Product Manager, Coda Music Technology
"The hints & tips alone are the worth the price of admission..."
-Denis Labrecque, VP Channel Marketing, Passport Designs Inc.
"The videos really do accelerate the learning curve."
-Chris Rice, Marketing Director, Twelve Tone Systems

Five Gets (Maybe 6) For Classic Loopers

Pat Finnigan

Did anybody watch the *NBC Evening News* with Tom Blowchow, or was I the only one? I caught an *"Insider Edition"* (or as Tom likes to add, "late-breaking news") of demo recording. Three perspectives were shown: one of the traditional recording studio, one of a mobile studio, and one of the lone guy cranking out demos. And, you got it, the lone guy was cranking away on an EPS, and even through standard 30Hz interlaced NTSC signal (er, TV), there was *no* mistaking it for anything else but an old EPS...

Needless to say, he was the most productive and most affordable of the trio, which kinda triggered this article. If an old instrument like our old discontinued friend the EPS could get *that* kind of airtime, I'll bet there's a whole lot more life in the beast than meets the eye. That's what I discovered some four years ago, and it's because of audio sampling with my old EPS Classic that I now work for a manufacturer of video sampling (er, digitizing) hardware. So, in the spirit, again, of maximizing the potential of your Ensoniq sampler, be it a Classic or '16+, here's the drill...

(A) Get the 4X. It's silly not to have as much memory as possible; since the Classic maxes at 4096 blocks, get them all. If you think it's silly to spend that kind of money on an older instrument, I paid $649.95 for my 4X new in 1987 dollars during the infamous memory shortage, so I don't wanna hear it. Just get it: you'll be glad you did.

(B) Get the OEX-8. An absolute necessity for the Classic, since they only way you can route FX is thru an external processor (shameless plug for the DP/4 insert here). It's an OEX-6 for the '16+, an OEX-8 for the Classic. Either way, you get *ten* discrete outputs. Imagine dry bass, liquid strings, reverberant pianos. Better still, imagine routing a dirty strat sample thru a wah-wah pedal into your mixer. This single little box gives each instrument its own identity, rather than a track button and a clever patch name. Remember; layers and patch selects can address the OEX's, not just tracks...

(C) Get the CV-1 Pedal. This is not just a volume control: it's a modulator, it's a pitch pedal, it's myriad controllers to be assigned myriad routings. It's cool, it's cheap, it's indispensable. I personally guarantee you'll wear it out before you exhaust its possibilities.

(D) Get the *Hacker*. This is not a shameless plug: you'll learn more about torquing your instrument here than any other source; even Ensoniq concluded this in 1985. It's more bang for your buck than you'll get anywhere else: consider it a stipend for the illustrious bevy of "regular (and not so regular)" contributors. Plus, you are granted membership in that most exclusive fraternity/sorority of Ensoniq users, the Endless Loop Club, where, for an additional $6, you get eTH privileges and get the honor of proofing this stuff before it gets published...

(E) Get some sounds. I know people who have bought $350,000 homes only to discover they forgot about furniture. *Don't* do this to your EPS/16+. It's a blank sheet of staff paper, so you can write with a Bic or a MontBlanc; *But write!* Ensoniq's libraries are the absolute best sonic value for the buck you can buy. In their economy of scale, nobody can touch them.

But that's not to say that the 3rd party channel isn't keeping them honest, either. I've reviewed some spectacular offerings that covered all the bases for just over a yard (C$), and there are a veritable plethora of stunning samples available for the Classic/16+. Remember, they're the *world's* most supported sampler, so be brave and drop a coupla bucks. Feed your sampler good stuff: you'll be glad you did...

I purposely did not include the SCSI adapter or CD-ROM drives since they collectively would cost more than half the street price for the Classic. But rest assured; if you're as content as I am using that superlative Ensoniq interface (I'm still as happy as a clam since I wrote my first EPS sequence in 1987), the value of the SCSI card and a CD-ROM or SCSI hard drive *far* outweigh the cost. Club Mac sells 365 Mb external drives for $189; I bought my 80 Mb Eltekon in 1988 for $1200, so, again, I don't wanna hear it. But a fully blown, stroked, ported and relieved EPS Classic *still* blows anything the competition has to offer away. And it's a circa 1987 instrument!

So get yours up to speed... ▬

Bio: Pat is a tech support person for RasterOps. He still uses a B-3 for a keyboard stand and watches the alpha channel.

The DP/4 and MIDI

Part I: System.Midi Parameters

Steve Byhurst

Hello again and welcome along to a couple of articles looking at the DP/4 MIDI commands. This time I will "boldly go" to each of the MIDI parameters in System.Midi mode and suggest some ways of using them.

If you are new to the DP/4, or haven't tried using its MIDI functions yet, press the System.Midi button to start looking at the available parameters.

System.Midi Structure

Once in System.Midi mode you have access to 64 system and MIDI parameters. Many of these directly or indirectly relate to MIDI use and it is the setting of these that I will specifically cover. The remainder are foot switch/pedal setups and simple preference parameters which control the way the user interface works. None of the System.Midi parameters are affected by preset changes — once set they become your default setup.

There are two categories of parameters in System.Midi mode, those that are specific to units and those that have a global or system-wide function. The first 35 parameters are made up of 5 sets of 7 identical commands. Each effect unit (A-D) has a set as well as Config, which here functions as a "virtual unit" because it has its own set of MIDI parameters just like one of the units. The remaining parameters are all global.

We'll start by looking at the unit-specific parameters. You can press one of the unit buttons or the config button as a short-cut to access the relevant set of commands. Remember, there is one of the following commands for each of the units and their settings are completely independent of one another.

MIDI Channel/MIDI Enable

These two parameters allow you to set a MIDI channel from 1 to 16 and to enable reception of volume and program change data on that channel (a separate channel is used for other controller data which we will look at in part two). There is no restriction on which numbers can be used by the units A-D, but the config unit must have a different number to the others to ensure correct reception of data.

Many factors can affect the number of different channels you need to achieve what you want, and it can be difficult to decide on a default. I find it best to work out your most usual way of working and set the parameters accordingly. They can always be changed later and there is a System Exclusive Dump option that can be used to save different setups for recall at the appropriate time (also detailed in *Part Two*).

If you are short of spare channels and/or do not wish to send different MIDI data to each unit, use just two channels by setting units A-D to the same number and the config unit to another. There is still much you can achieve with this setup. Alternatively, if you need absolute control, program each unit with a different number.

The configs you normally use are also a factor in deciding how to use different channels. All four MIDI channels are only active when a 4-source config is in current use. This means it would be a waste of channels to have each unit set to a different number if you hardly ever make use of 4-source configs. Also, if you only use the DP/4 as a single processing unit you will only need one channel number.

The Enable parameter can be used to control usage of individual units sharing the same channel number. A simple trick I sometimes use is to program the same number for each unit in a 4-source config and set them all to disabled. Then, when sending program change or volume data on that same channel, you can choose to enable only the unit or units you wish to receive that data.

Program Change

This parameter simply governs whether a unit will ignore or receive any program changes sent to it on its channel number. If set to receive it will enable presets to be changed and will select 1/2/4 unit presets depending on the current config's source setup.

In a similar way to the MIDI Enable parameter, this allows you to choose which unit, or units, will respond to program changes sent on a particular channel even if all units share the same number.

Note that there is also a global program change master switch which must be turned on if any program changes are to be received.

Program Change Map

There are three parameters which govern the mapping of incoming MIDI program numbers to DP/4 preset numbers for each unit. The first simply turns the mapping on or off, whilst the second and third are used to input the actual numbers to be mapped. When set to "Off" a default preset map is used.

There is one thing to note before using this facility. The DP/4 displays program change numbers as 1-128 whilst the actual numbers received are MIDI standard 0-127. This means that if your MIDI controller (and this includes some Ensoniq models!) displays standard numbers the two displays will always be out by one. This may be confusing but is not a problem once you understand why it happens.

The main application for mapping is to allow a MIDI controller's program change to select an appropriate effect in the DP/4 without having to get program numbers in both pieces of equipment to match. There is no problem if you want a favourite effect to be used by many of your programs as the same preset can be used to map onto multiple program numbers. You can set individual program numbers to be ignored and also make a program number bypass, un-bypass or kill any particular unit you wish. These functions are great for when you are using a workstation-type keyboard to control the effects used on its sequencer tracks. They allow you to add, delete or change the effect just by issuing a program change. Bear in mind though that the DP/4 offers other ways of doing this which may be more suited to a given situation.

Unit Bypass

The last of the unit-specific parameters, this lets you select a controller source which will act as a bypass switch for each unit. Among the MIDI options are pitch bend, note number, note velocity, aftertouch and controller numbers 0-127. I usually make use of controller numbers which are not being used for modulation purposes.

This parameter comes into its own if you want to bypass units separately but do want to use any of the other bypass options the DP/4 provides. These may already be in use or may be used for another purpose, and because there is a wide choice of controller you can always find something which is not being used elsewhere.

Prepare yourselves for next time when we'll go global! ▬

Bio: Steve Byhurst is a British composer of electronic music. He is still trying to convince people that his work is serious enough to be paid for.

Synth When?

Robby Berman

Product: Sample Disk Collection Sets.
For: ASRs, EPSs and TSs.
From: Tech Star Software, PO Box 463236, Mt. Clemens, MI 48046, phone: (810) 783-0470.
Price: $19.95 each, or $159 for all 10 (free demo available).

The folks at Tech Star Software obviously know what it's like to order a set of sounds for your sampler based on the claims of its creator or, worse yet, on the unreliable, all-too-subjective opinion of one such as I. Really, it's a pig-in-the-poke kinda situation (and no, I have no idea where that expression comes from; I'm a vegan myself). Tech Star's solution? Offer a free cassette demo of their sounds in action. That's right, not for five bucks — free. Gratis. Boy, do I feel a great weight lifted from my reviewing shoulders. Why keep reading? Call 'em now. Go ahead.

Still reading, huh? Okay, let us proceed, starting with the dry stuff.

Overview

The Tech Star library consists of 10 sub-libraries, each largely populated with classic or new synth-based sounds. To wit, Tech Star's *"The Strings Collection"* is not samples of real, organic wood and gut (ecchh) stuff, but rather of synthesized renditions of same. Each of these collections is available separately for 19.95 or as a big bunch for $159.95. All of the sounds listed in Tech Star's brochure are quite memory-efficient and, if my memory and math serve correctly, will fit easily even into an unexpanded EPS, not to mention the TS, '16+ and ASR-10/88.

The demo cassette is in fact very helpful. The music is in a sorta techno, four-on-the-floor direction, with some expansive texturing laid over the top. Chords both sizzly and warm, deep and ethereal swirl in the stereo field against the boogidy beat. All purple prose aside, I think it's a very honest representation of where Tech Star's coming from and what their sounds are like.

The Sounds

For review, Tech Star sent the *Hacker* a sampling of their samples from each of the sets they offer, with the exception of their two drum collections (dunno why they're missing). I've got no reason to believe that these sounds aren't characteristic of the collections overall, so with that little leap of faith, we're off....

All of the string sounds here are typical of Tech Star's thorough approach: excellent looping, careful matching of multisamples and a full use of the real-time modulators available to Ensoniq samplists (oh, and you, too, TS owners). The Patch Select variations actually provide some of my favorite sounds in this collection. Tech Star has a talent for diversity: SMOOTH JUNO is indeed silky smooth, MATRIX STRNG is crisp and in-your-face and JP8 STRINGS is warm and full, as perhaps a JP should be. Again, make no mistake, these are synth strings: don't expect the real thing. But they are satisfying. Everything is well de-noised, too.

The choirs included in my review set are evenly divided between synthy sounds and more realistic efforts. MALE CHOIR reminds me of a kind of squeaky-clean ESQ-1, if that's not a contradiction in terms. My fave is more realistic, the delicate and lovely FUTURE CHOIR, based on female voices, I b'lieve. It's about as realistic as samples of "oohs" (or are they "ohs?") get, which is to say, not very. But this sound is really expressive and I found myself rather hooked on it.

Tech Star's electric pianos are all synth-based, it appears, and though two of the review sounds are not too exciting to my ears, the other two actually are. FM PIANO, with a sound name to strike terror — or at least numbing ennui — into the hearts of veteran sound collectors, is a most pleasant surprise. It's not the same old DX Rhodes. Rather, it's almost a steel-drum type of electric piano. Somehow it really captures the FM high end so often lost in sampling. Really nice. And the D50 E PIANO, oddly enough, is much like the classic DX chestnut, though derived from a Roland D-50 and imbued with an unexpected warmth. Often synth electric piano sounds wind up piercing rather than soothing; the D50 E PIANO is a happy exception. Now if I layer that with FUTURE CHOIR....

The Tech Star organs are a bit surprising, never quite turning out to be what you think they'll be, judging by their names, though they are usable and enjoyable. CHURCH ORGAN, which I quite like, is more of a "Will-Clipper-leave-Heather-at-the-altar-and-have-the-aliens-snatched-Bill Sr.'s-only-hope-for-happiness" organ for me than one which conjures up images of stained glass and such. Likewise, B3 ORGAN 2 is a tinkly, cheesy little beast, while VOX CONTL, a tinkly, cheesy little device in real life, sounds like a rich B3. The basic LESLIE B3 sound is hyper-bright, with its 0X Patch Select sounding like the Hammond in The Beatles' *"Blue Jay Way."* Oddly, only one of the organ sounds use the ROTO SPKR effect algorithm. Maybe it is time to leave that cliche behind, or at least not be so knee-jerk about it.

The brass sounds are fun, though not very horny. Of course by now, synth brass has become a separate sound type, distinct from real brass, in the same manner as synth strings, choirs, bass and so on have. The "brass" sound AX80 sure has a nifty 0X Patch Select with Env 2 set to repeat, causing the sound to pulse rhythmically.

Well. I didn't expect for the bass sounds to be so much fun. These may prove to be the standouts in this set (though I hear FUTURE CHOIR and the electric pianos calling to me, "Oh, Robby..."). All of them are deep as you need and yet still very much up front. SECRET BASS is a secret no more, with its delightful use of the ASR's stereo chorus. SEQ BASS is so plunky it's almost banjo- like, and EIGHT BASS is downright stringy. In fact, it sounds like the bassist's strings are a little loose; a clever approach to bass which I think works well. I do like these.

Wrapping up, we move into selections from *Synth Collection 1* and 2. Of course, all of Tech Star's sounds are synthy, so let's see what we've got when their programmers are set free. D'oh! I'm not as turned on by these as I am by the other Tech Star sounds. Actually, it's the sounds from *Synth Collection 1* that failed to do much for me. The samples in *Collection 2* are much more up my alley, especially the chrome-plated METAL FILTER (with its hyper-staccato XX Patch Select) and the delicately clanky OXYGEN.

Benediction and Farewell

Perhaps you can tell that I suspect these sounds might be worthwhile additions to the synth side of your sample collection. They contain programming that's thoughtful and accomplished and, hey, they sound good, too. I must confess that even those that don't rattle my cage are well-conceived and executed. But ya know what? You don't have to take my word for it. Call up Tech Star and order their demo. You may very well like what you hear.▬

Bio: Robby Berman is a musician living 'neath the starry autumn skies of New York's mid-Hudson Valley. He's also expected in the kitchen right about now to do the dang dishes. Oh, well. His latest album is "Rings and Rings."

opti-case

Cases for Ensoniq Equipment

Now available direct from factory (except in current dealer areas) our full line of ATA cases Category I and II

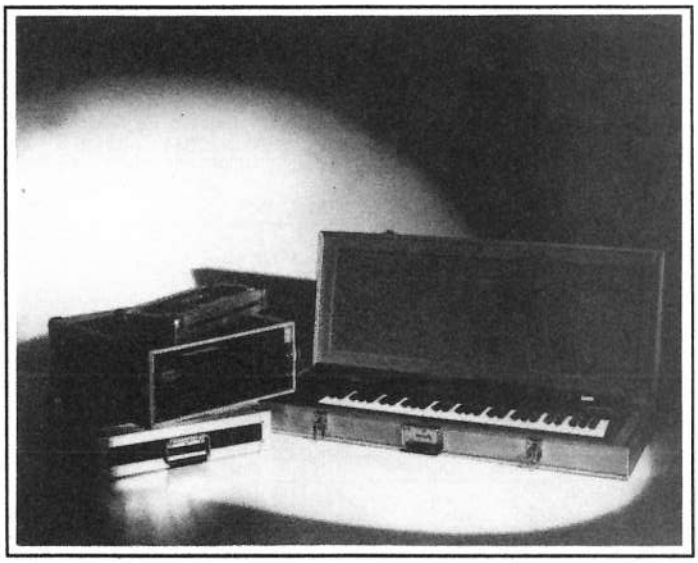
Keyboards: EPS, EPS-16 PLUS, VFX, VFX-sd, SQ-80, SQ-1, SQ-1+, SQ-2

Module rack cases: 3-space, 4-space, 5-space, 6-space. (2-space racks available with surface mount hardware only.)

Mention the (TH) code number 839 when inquiring to receive our special factory-direct pricing.

CALL US AT 1-800-637-6635

8:00 am to 4:30 pm CT, Mon. – Fri.
We accept: COD, Visa, Mastercard, American Express.
Dealer Inquiries Welcome!



Shown: 4-space rack with EPS-16 PLUS module, 2-space rack, Eagle-I VFX-sd case

EAGLE

OPTI-CASE • RT. 6, BOX 235 • HENDERSON, TX 75652 • FAX: 903-657-6030

Bifurcated Boards

An Alternate Way for the ESQ and SQ-80 to Do Splits

Kirk Slinkard

The ESQs and SQ-80 have a remarkably versatile voice architecture that enables them to do some pretty nifty tricks that most other synthesizers can't even *think* about doing. With the technique shown in this article you can split two different sounds on the keyboard using only one patch by using the keyboard as a volume modulator.

Specifically, here we use the "KEYBOARD 2" modulator (abbreviated "KBD2") because it has a much steeper slope than the other "KEYBOARD" modulator, and KBD2's range is exactly five octaves. The regular KEYBOARD modulator expands the effect over the full MIDI range, so its slope is much more subtle (Ensoniq unwisely decided to discontinue the KBD2 modulator in its synthesizers made after the SQ-80, so this article just rudely ignores them. Besides, they can use their KEYBOARD SCALE parameter, at least on this one function). Although this method only requires one patch for both sounds, you have to divide up the three oscillators (or just two if you prefer) between the two different sounds. When doing this, I find it helpful to think of each oscillator/amplifier combination within the voice (for example, OSCILLATOR 1 and DCA 1) as a separate, independent "sub-voice." Each of these three sub-voices can have its own independent LFO and ENVELOPE before they combine into the master FILTER/ENVELOPE 4/AMPLIFIER 4 combination (kind of analogous to the way more recent Ensoniqs combine the different voices within one patch into a common effects processor). I have included four patches as application examples, each being optimized to show off a different feature of this sound-splitting technique:

The first patch "SPLIT1." shows the sharpest possible split within one patch using this method. It uses a bass guitar

ESQ-1 PROG: SPLIT 1

By: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	00	01	ELPNO	LFO1	+01	OFF	-
OSC 2	-2	11	31	ELPNO	LFO1	+01	OFF	-
OSC 3	-1	00	00	BASS	LFO1	+01	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	KBD2	+63	KBD2	+63
DCA 2	63	ON	KBD2	+63	KBD2	+63
DCA 3	63	ON	KBD2	-63	KBD2	-63

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	013	00	00	KBD2	+33	KBD2	+63

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	08	KBD2	+63

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	24	OFF	OFF	TRI	00	00	-	WHEEL
LFO 2	-	-	-	-	-	-	-	-
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	+63	+49	+00	25 (L)	00	00	26	50	63	15
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+63	+00	41 (L)	00	00	00	57	20	33

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	OFF	OFF	OFF	00	OFF	OFF	OFF	OFF

SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY
OFF	-	OFF	-	OFF	-	-

ESQ-1 PROG: SPLIT 2

By: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	00	02	SAW	LFO1	+01	OFF	-
OSC 2	-2	11	29	SAW	LFO1	+01	OFF	-
OSC 3	-1	00	00	SQUARE	LFO1	+01	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	00	ON	KBD2	+63	ENV1	+63
DCA 2	00	ON	KBD2	+63	ENV1	+63
DCA 3	00	ON	KBD2	-63	ENV2	+63

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	066	00	09	KBD2	+38	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	08	KBD2	-63

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	23	OFF	OFF	TRI	00	00	-	WHEEL
LFO 2	-	-	-	-	-	-	-	-
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+51	+27	+27	00	12	39	51	00	53	00
ENV 2	+41	+33	-63	00	00	00	11	47	39	00
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+63	+63	00	00	00	00	00	31	00

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	OFF	OFF	OFF	00	OFF	OFF	OFF	OFF

SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY
OFF	-	OFF	-	OFF	--	

ESQ-1 PROG: SPLIT 3

By: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	00	00	SAW	OFF	-	OFF	-
OSC 2	-2	07	00	SQUARE	LFO2	+25	OFF	-
OSC 3	-2	00	00	SAW	LFO1	+04	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	-	OFF	-	-	-	-
DCA 2	00	ON	KBD2	-63	ENV1	+63
DCA 3	00	ON	KBD2	+63	ENV2	+63

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	042	05	00	KBD2	+22	ENV1	+39

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	08	KBD2	+63

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	23	OFF	OFF	TRI	0	3	32	WHEEL
LFO 2	08	OFF	OFF	TRI	63	0	-	OFF
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+63	+42	-63	63 (L)	00	00	21	51	13	00
ENV 2	+37	+24	-63	00 (L)	00	06	22	55	63	00
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+63	+63	00 (L)	00	00	00	00	19	00

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	ON	OFF	OFF	00	OFF	OFF	OFF	OFF

SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY
OFF	-	OFF	-	OFF	-	-

ESQ-1 PROG: SPLIT 4

By: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	00	00	ORGAN	LFO1	+01	OFF	-
OSC 2	+1	07	00	OCTAVE	LFO1	+01	OFF	-
OSC 3	-1	00	00	OCT+5	LFO1	+01	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	38	ON	KBD2	+63	LFO2	+63
DCA 2	38	ON	KBD2	+63	LFO2	+63
DCA 3	00	ON	KBD2	-63	KBD2	-51

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	087	00	00	OFF	-	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	08	KBD2	+63

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	25	ON	OFF	TRI	00	00	-	WHEEL
LFO 2	00	ON	OFF	SQR	63	00	-	OFF
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+63	+63	00	00	00	00	00	00	00

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	OFF	OFF	OFF	00	ON	OFF	ON	OFF

SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY
OFF	-	OFF	-	OFF	-	-

sound from OSCILLATOR 3 on the lower half of the keyboard and a chorused electric piano sound from OSCILLATORs 1 and 2 on the upper half. This is convenient because both sounds have similar volume envelope characteristics, so this is handled entirely by ENVELOPE 4 and DCA 4. This leaves all the first three DCAs open to do just the split function (and I used to think that my SQ-80 had too many DCAs). Note that DCAs 1 through 3 each use KBD2 twice to double its effect, and AMPLIFIER 3 (the lower sound) has it reversed in polarity. In fact, the cumulative volume slope across the keyboard is so steep that very few notes in the center of the keyboard actually have any noticeable mix between the two sounds. Try playing around middle F# to check this out. You could never achieve this with that wimpy KEYBOARD modulator! In this particular patch, the filter uses KBD2 to make the bass sound a little less bright than the electric piano sound, and ENVELOPE 2 is used in the filter to cause the entire patch to loose brightness as it decays. KBD2 is also used to modulate the PAN parameter so you have a little stereo separation between the two sounds. Too bad we can't double it up here like in the DCAs.

The second patch "SPLIT2." is optimized to show off how both halves of the split can have different envelope shapes. It has a less well-defined split area because it uses the KBD2 modulator only once in DCAs 1 through 3. So while using a patch like this in actual performance or recording, you would probably want to avoid playing in the middle octave. The upper sound is chorused strings from OSCILLATORs 1 and 2, and the lower sound is a square-wave bass from OSCILLATOR 3. Note that the upper sound fades in gradually where the lower sound doesn't. A side effect in this patch is that the final volume envelope changes its shape slightly as you go up or down the keyboard. This comes from the moving modulation from ENVELOPE 1 or 2 being added to a different constant level for each key from the KBD2 modulator. Hmm — interesting possibilities, but that's another story.

The third patch "SPLIT3." demonstrates how real-time modulators can be applied differently to each sound in the split. It has a variable pulse-width synth bass on the bottom from OSCILLATORs 1 and 2 (OSCILLATOR 1 is turned off at DCA 1 — it is only used to SYNC OSCILLATOR 2) and a sawtooth brass sound on top from OSCILLATOR 3. Here again, each of the two sub-patches have different volume envelope characteristics. On this patch, the mod wheel increases the vibrato from LFO 1 to the upper voice only, and velocity controls the volume of the lower voice only through ENVELOPE 1.

The last patch "SPLIT4." shows that the split point doesn't have to be right in the middle of the keyboard if you don't want it to be. Here, we have a full organ sound taking up most of the upper four octaves, and a mellower organ sound in basically just the lowest octave. By juggling around the volume and modulator levels in DCAs 1 through 3, you can independently change the range of each sub-voice. In this patch, the combination of the LEVEL parameters and modulators in the first two DCAs (upper sound) are increased enough so that they take up more of the keyboard. In the third DCA (lower voice), the reversed KBD2 combined with the really low LEVEL setting makes it take up less of the keyboard.

Maybe you have no compelling reason to use the technique shown here but keep in mind that this way of doing splits touches on the subject of separating sounds using volume modulation that has several other applications. For example, on some of the patches in the second Star Trek sound effects article in a previous issue, the MOD WHEEL modulated the volume of each sub-voice in such a way that you could use it to switch between two completely different sounds within just one patch, comparable to the way the PATCH SELECT buttons are used on some of the more recent Ensoniq keyboards. This is essentially the same technique used in this article about keyboard splits, but with the MOD WHEEL used instead of the KBD2 modulator.

Other common examples of non-keyboard sound separation applications include using velocity, envelopes, or LFOs to get "cross-wave," "LA," or "wave sequencing" sounds. You can find many examples of this type of application in Hackerpatches and articles in past *Hacker* issues. In this article, I have given you examples of single patches that have two sounds split across the keyboard, but it is also possible to split three separate sounds within one patch in a variety of ways without ever going to the SPLIT/LAYER page — remember, you have three sub-voices within one patch. And, believe it or not, there are techniques for getting more than three different sounds split across the keyboard within just one patch. But that gets into some much more complicated and unusual situations. Some of the SQ-80-exclusive waveforms can split in strange ways when SYNCed or AMed. And if you load illegal or corrupted data into either the ESQs or SQ-80, any oscillator might be set to an illegal waveform and automatically give you several strange waveform splits across the keyboard. This certainly opens up some possibilities.

Mod you later. ▬

Bio: Now that I think about it, I really haven't been doing all that much.

Hacker Reinitialization

Newbie's Corner

One of our most common requests from new subscribers (new owners) is for more basic tutorial information. We've all been there. Unfortunately, the *Hacker* is usually "there" when a new instrument first makes its appearance — and then we move on. While back issues can answer many questions, not all are still available and they do represent an additional expense for the new reader. Hence, *"Hacker Reinitialization"* — yup, old goods in a new wrapper. We feel a little funny about the whole reprint thing — so we're going to keep it small. Clark's series on the SQs is the most requested and the most generally applicable (KSs & KTs in particular — and he's checking 'em for freshness), so here we go...

The SQ (KS/KT) Series and Subtractive Synthesis

Clark Salisbury

In terms of basic programming techniques, the SQ-1 follows more or less in the tradition of subtractive synthesis (although elements of other forms of synthesis come into play). Subtractive synthesis is a technology dating to the golden age of synthesis, back when the Minimoog was king and most of us didn't know which way was ARP. Subtractive synthesis has remained a viable technology to this day, primarily because of the ease with which sounds can be created and because of its great flexibility.

The theory of subtractive synthesis is quite the opposite of additive synthesis (discussed last time). Rather than creating complex sounds by combining simple sine waves, as with additive synthesis, we start with complex waves and subtract those components in the sound that we don't need. In other words, to create a clarinet sound first we'd start with a complex wave, perhaps a SQUARE wave. Within this wave are contained the harmonics needed to produce a reasonable imitation of a clarinet wave, but there are a number of other harmonics as well. These additional harmonics, mostly in the upper frequency range, make the raw SQUARE wave too bright and buzzy to sound much like a clarinet. If we subtract some of these upper harmonics, though, we come much closer to obtaining a clarinet-type sound.

Basic Architecture in Subtractive Systems

The basic SQ-1 voice presents almost a classical subtractive synthesis signal flow. Sound originates with the wave (in classic subtractive systems, such as the Minimoog, this corresponds to the oscillator), moves to the filter (where upper and/or lower harmonics are "filtered out," or removed), then to the amplifier (where the overall dynamic contour of the voice is shaped), and finally to the output. In the SQ-1 the output is routed to the digital effects processor, presenting a minor departure from classical subtractive systems.

Wavetable and L/A Synthesis

One of the basic limitations in early subtractive systems was the difficulty involved in generating complex sounds. The original subtractive systems used analog oscillators which were not as flexible as today's waveform generators. Typically, only three or four basic waves, such as the sawtooth, sine, triangle and square waves, could be produced by an analog oscillator.

Not too many years ago, the idea was put forth that in place of the analog oscillator, why not use digital wavetables — complex waves that could be derived from sampled data or generated on computers. This partially solved the problem of how to get complex sounds out of subtractive systems, but led to another problem — wavetables can take up large amounts of memory. The earliest wavetable synthesizers used short wavetables in order to conserve memory, but as anyone familiar with sampling knows, looped short waves can be rather static sounding.

A partial solution to these problems was found in L/A synthesis. Basically, the theory behind L/A synthesis is that you don't need to stuff an entire wave into a synthesizer's memory. If you sample just the attack portions of sounds, and then graft them to the front of more traditional synthesizer waves, you'll get a sound that seems quite complex but which takes much less memory than a sound based entirely on sampled data. The other obvious advantage is that the synthesizer now has the ability to generate musically interesting hybrid sounds — sounds which retain some of the complexities of sampled sound, but also have some characteristics of synthetic sounds.

Architecture of the SQ-1

The SQ-1 has the capability to combine all three of these technologies in the creation of sounds: its basic voice follows the blueprint for traditional subtractive synthesizers, but with many more choices of waves. There are traditional analog-type waves available, including the sawtooth, square and sine waves. There are sampled and digitally generated wavetables, as might be found in wavetable synthesizers. There are sampled attack transients, as might be found in L/A systems (any of the waves can be shaped into an attack transient if you feel like doing serious L/A style programming, though). And the addition of waves with dynamically changeable timbre — the transwaves — helps to give the SQ-1's sound a richness and movement not possible with any of the systems discussed so far.

Modulation

One of the most important concepts to come to terms with when learning to program synthesizers is that of modulation. To modulate something, simply put, is to change it: we can modulate pitch to create pitch bends or vibrato; we can modu-

late the amplifier to shape the loudness of a sound, and control how that loudness changes aver time; filters can be modulated to control how a sound's harmonic content changes over time. Without modulation, the sounds produced by the new electronic instruments would be pretty dull and static, like the sounds we produced using additive synthesis in our last installment.

It is in the area of modulation that the SQ-1 excels. Not only are there a lot of choices for things to modulate in the SQ-1, but there are a lot of things to modulate them with and a lot of ways to control the modulation. So to get a handle on modulation, let's take a look at one of its more basic applications on the SQ-1, vibrato.

Vibrato, as you no doubt know, is a smooth, more or less subtle shifting of pitch up and down around the root pitch being played. The right kind of vibrato does much to add to the character of a sound, particularly solo sounds.

When creating a vibrato effect, as with any of the modulation effects, we must take into consideration three things: what is being modulated, what it is being modulated with, and if and how the modulator itself is being controlled. In the case of vibrato, these things may seem fairly obvious (although this will not be the case with every form of modulation you may encounter). Most obvious would be what it is we need to modulate — for a vibrato effect, we need to modulate the pitch. In the SQ-1, pitch modulation is a function of the "Pitch" bank, so it follows that our modulator will need to be applied here.

Next we will need to determine what it is we will be using as a modulator. Since, theoretically, we are on the trail of a vibrato type of effect, we will select a Low Frequency Oscillator — or LFO — as our modulator. LFO's are particularly suited to producing cycling, repetitive changes to some aspect or another of a sound. We'll be spending a lot more time with them in a later installment.

Finally, we will need to determine if we wish to control some aspect of the modulation (such as vibrato depth or rate, for example) in real time or perhaps from some other controller. The most common application for vibrato includes being able to control the depth of the vibrato effect via the mod wheel, although there are many other ways to control LFO depth.

You can see that the basic approach to modulation is pretty straightforward: first, determine what it is you wish to modulate; next, you'll need to decide what to use for a modulator; finally, determine how (and if) you'll be controlling the modulator in real time.

In the SQ-1, there are three basic areas where you might want to think about the application of a bit of modulation — pitch, tone color, and volume. Pitch modulation is accomplished via the "Pitch" bank of the SQ-1, where you can choose which of the various modulators you might want to apply to whatever voice you're working with. Tone color modulation is normally accomplished from the "Filter" bank, where upper and/or lower harmonics can be filtered out. And finally, control of a sound's volume over time (or in real time) is accomplished via the "Output" bank.

The SQ-1 also allows for modulation in some rather esoteric ways. For example, the start point of a wave can be modulated from the "Waves" section, or the start and end points of the "Transwaves can be simultaneously modulated to create some beautiful effects. Also, you can modulate LFO rate and depth from any of the modulators, allowing you to create some very expressive patches. Not to mention the myriad possibilities available for modulation in the effects section. But for now, we'll be sticking to the more basic concepts. We'll be getting into all these other areas soon enough.

Once you've determined what it is you want to modulate, you'll need to select an appropriate modulator. Standard LFO's and envelopes are available, as well as velocity, keyboard position, an external pedal, and the pitch and mod wheels. You can select "Noise," which provides a random, somewhat unpredictable modulation, or "XCTRL" (external controller), which gives you a way to route in controllers from external sources via MIDI. Other controllers include pressure, timbre, and "Max On." Don't worry, though — we're not going to try to cover all of these right now. Suffice it to say that a lot of options exist. For now, the important thing is to get onto solid ground with the basic concept of modulation. And as usual, we'll try to accomplish this by example.

Direct Dialing

Up until now, we've been accessing menu displays in the SQ-1 by selecting the edit bank we're interested in, such as the "Wave" bank, and scrolling to the menu we want. But there's a quicker way to navigate — we can think of it as "direct dialing."

Each of the menus in an SQ-1 edit bank has a number. This allows you to access any menu simply by pressing the edit bank button for the group of edit functions you want, and then pressing the number button which corresponds to the specific menu you are looking for. For example, if you want to go directly to the "Edit Voice" menu, simply hit the "Edit Sounds" button, the "Wave" button, and then the "screen 0" button. Since the "Edit Voice" menu is the first page of the "Wave" edit bank, pressing the "screen 0" button will take you directly there.

eTH — A Faster, Cheaper Hacker

If you can receive e-mail via the Internet, you can take advantage of avoiding the post office and get a faster, cheaper, e-mail version of the *Hacker*. The e-mail *Transoniq Hacker* contains all of the same information and advertising as the printed version, but it's only $20/year — anywhere on the planet. Interested? Just send a message to us at eTH@transoniq.com and we'll e-mail back complete subscription information. ***Let us know if you'd like a free copy of the current issue and we'll send one along.***

Don't worry about memorizing which screen buttons go with which pages — you can still scroll to find the pages you want. But as a convention, from now on we will be direct dialing to get to menus — it will help to get familiar with the internal structure of the SQ-1 and to assure that we're all on the same page when navigating SQ-1 programming parameters.

The Nitty-Gritty

Now back to modulation. First, we'll need to select a sound to work with. The ROM sound called "French Horn" (program 13) should provide us with a good basic starting point. It has no crazy envelopes to deal with, no wacky filter sweeps, and the sound sustains long enough for us to hear any changes we make without having to repeatedly strike the keys.

First, we'll need to make sure that we're dealing with the correct voice — in this case, "voice one" is the only one used in this program. We can verify this by hitting the "Edit Sounds" button, hitting the "Wave" bank button, the "screen 0" button and checking out the status of the "Edit Voice" page. You should be seeing the following in the display window:

EditVoice=ONE
ON OFF OFF

and the word "ON" in the lower corner should be flashing, to indicate that voice one is selected for editing. If it isn't, simply scroll until it is.

Now that we've selected the voice we'll need to route the LFO to it. Since we're after vibrato, and vibrato is a type of pitch modulation, it stands to reason that the "Pitch" bank is where we want to be. Click the "Pitch" button, and then the "screen 1" button to "direct dial" to the "Env1/LFO/Mod Source and Amount" page. You should be seeing the following display:

Env1=+00 LFO=+01
Mod=NOISE *+02

These are all modulation inputs to the pitch of the current voice. Env1 and LFO are "hardwired" to control pitch mod — they appear as modulation sources along the upper line of the display, and can't be changed. The numbers showing next to them, however, can. These represent modulation amounts for the LFO and Env1. For now, select each of these parameters and set it to +00 — we're going to be manually routing the LFO in so it will become obvious exactly how it's done. Now scroll to select the "Mod=NOISE" parameter (it should start flashing) and use the data slider and up/down arrow buttons to set it to "LFO" — the display should now show "MOD=LFO." You've just routed the LFO to control pitch modulation!

Next, scroll one more tick to the right (this will select the "Mod amount" parameter), and use the data entry slider/buttons to select an amount between -99 and +99 (modulation can be either positive or negative). Try a value of +50 for now. The SQ-1 display should be looking something like this:

Env1=+00 LFO=+00
Mod=LFO *+50

If you listen, the effect should be fairly subtle — this is because there is a level control located in the LFO section — it is used to control overall LFO depth — and it may not be set to a very high value. Let's check it out.

Click the "LFO" button, then the "screen 1" button. Select "Level=08," if it isn't already, by scrolling. Increase its value to 99 and try playing a note. You'll notice that the vibrato doesn't kick in too abruptly — the LFO is set to delay for a time of 46 before it fully kicks in. To change this, select "DELAY=" and experiment with different values. You'll find that lower values yield faster LFO rise times. For now, leave this set to 00 — the LFO should kick in as soon as you play a note.

The LFO effect at this point is probably sounding pretty seasick, so let's back off on the LFO LEVEL — perhaps resetting it to its original value of 08 or so would sound better, but set it to whatever you find pleasing.

Select "Mod=" from the lower row of the display and use the data entry slider/buttons to set it to "WHEEL." This selects the mod wheel as a controller for LFO depth. If you push forward on the wheel now, you'll hear the vibrato effect increase. Now let's try controlling LFO level from something other than the wheel — how about key position? It's simple enough. Make sure that "Mod=" is still selected and use the data entry slider/buttons to set it to "KEYBD."

Now we can control LFO depth from the position of notes on the keyboard. As you play higher, the vibrato effect increases. Try setting "Level=" in the LFO section to 00 — this way, you'll have no vibrato at all unless you are playing the higher keys.

Hopefully the program is by now becoming clear — select what it is you want to modulate (in this case pitch), select what it is you want to use to modulate it (in this case, an LFO), and select what, if anything, it is you want to use to control the modulator (in this case, the wheel or the keyboard). And don't worry if this isn't all quite coming together yet — we'll spend more time with modulation in the next few installments. ▬

Bio: Clark Salisbury writes music and words, does a little music production, engineering, and recording and does sound design for almost every manufacturer on the planet.

Tunnels of Kineticism

Tape: *Horizontal Hold.*
Artist: Christopher J. Bird.
Contact info: 116 Dean Street, Stamford, CT, 06902, phone: (203) 353-1129.
Equipment: M Composition software and Performer sequencing software on a Mac SE/30 interfaced to a EPS-16+, a Yamaha SY55 and a Boss DR660.

This is high energy driving dance music. Chris wrote:

"I started playing experimental music in high school using Electrocomp equipment. There was no digital sound then, and the control voltages were so powerful, you could get a shock from the end of the patch cord, of which there were never enough. At art college I played drums in a band and frightened everyone with tape loops and delay effects created using a small army of reel-to-reel tape decks. Last year I was able to buy some gear and create music using the computer I bought to do freelance graphics."

Gothic Afro starts us off at 7:36. The sampled chanting and singing weaves throughout with a mixture of male voices, middle eastern warbles and almost operatic qualities being played against each other back and forth. There is a dueling tonalities section where the middle eastern scales are pitted back and forth against the more western scales. All the while a powerful driving dance beat is maintained.

Caffeine Cantata 14:11 has all the power and drive you might need to stay up all night long. The only danger here is the repetition might start to put you to sleep. There are some very groovy sampled vocals sprinkled throughout, but I was left wanting more.

Oddly enough *Sputnik, Baby* 23:41 doesn't seem to fall down because of repetition. While not quite as energetic as *Caffeine Cantata, Sputnik* bubbles and brims with quality vocal samples. Here the ethnicity seems to have shifted back to the middle eastern flavoring which offers a nice contrast in tonality to the dancing rhythms and sounds. *Sputnik* is also much lighter on the bottom end, favoring lighter percussion with a definite absence of bass.

This is a crystal clear recording and a quality work. Chris has a real flare for the visual as well, from his J-card to his letterhead design. I get the sense that this is about as creative as you can get these days. Just be sure you are really locked into the dance music techno genre. It's much more fun to shake to than to write about.

Tape: *Suicide Copy Cat.*
Artist: Surface Noise.
Contact info.: P.O. Box 136, Station P., Toronto, Ont. M5S 2S7, Internet: noise@io.org.
Equipment: EPS with 8X expander and SCSI.

Surface Noise describe themselves as post-media illusion. This seems quite appropriate, and it sounds a heck of a lot better than post-modern-alternative-thrash-industrial-music. In their pullout flyer they put it this way: *"Stumbling over barriers between art, crime, and exploitation, perhaps SN's most recognizable signature is the rhythmic layering of sampled vinyl damage into the production."*

Sometimes it seems that the industrial-sound manipulation scene is the only place where real honest creativity is taking place. Maybe it's because everything else sounds like a copy of a revival of a rejuvenation of an oldie, or maybe it's just the continual hunger for something new. Whatever it is, there is something about the energy, the mix and the drive and the intensity that grab us in a different way than ever before.

Helter Boring is slathered heavily with Beatlemania and the ever famous, "I've got blisters on my fingers" wafts above all else.

F.U. (Fair Use) has Mick-Mick with lips so thick screeching at us rhythmically.

Linkletter-Turner Overdrive has a hip, guitar strumming groove with a voice-over about the evils of marijuana.

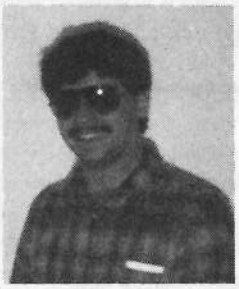
About Time has a heavy funk feel, and once again this anti-pot smoking lecture.

Side Two contains one song and number of samples that really are quite fascinating.

The vocals here sound like a cross between Warren Zevon and Frank Zappa. The best aspect of this tape is that I really felt I was being taken by the hand, blindfolded and walked through something. Sure it made me nervous and at some points I was downright frightened. Maybe I giggled to make myself feel better. But in the end, looking back, I was awfully excited by all I was hearing. I had a good time!

Surface Noise can be yours for $7.50 + 1.50 CDN for postage & handling. ▬

If *you* want your tape run through the ringer, err, Hacker, just mail it off to: Basement Tapes, *Transoniq Hacker*, 1402 SW Upland Dr., Portland OR 97221. .



Bio: Daniel Mandel is a songwriter, sound designer, and has sold pro audio and keyboard equipment and produced demo tapes for local bands.

Classifieds

HARDWARE/SOFTWARE

TS-12, new in box, home use only. Stand and some extra disks. All back issues of TH. $1500. (513) 293-8037.

Masterbits CD-ROMs for ASR-10: Tekno Trax (originally $89, sell for $50), Hot Keys (originally $169, sell for $100). Call Steve, 203-661-0504.

ASR-10 Keyboard Version w/SCSI option added. Rom version 1.5 (latest version). All systems disks (Sounds and OS) Ensoniq — *Mastering the ASR-10* (Video Tape). Original Boxes for ASR and SCSI in like-new shape. Receipts for everything. I hope I didn't forget anything. Please make offer! Also for sale: X-Static GoldMine 2 CD set — Really Awesome Dance Samples! See Transoniq Hacker review. Mackie 1202 mixer — Like new. Original Box. jimc@vivanet.com.

SQ-80m; ESQ-M module with factory-modified SQ-80 ROM installation in excellent condition, with cartridge; Best offer. Call Tony at 215/742-0738; leave message and number and I'll be back with you A.S.A.P.!!!

Sound Tools system. Includes Sound Accelerator, Dat I/O, current software, including Sound Designer 2.5. CD quality audio on any NuBus equipped Mac. $575.00. 503-245-0461.

ASR-10 10Mb ram, SCSI w/88Mb removeable, x6 output expander, pedals, cover stand, case, & Sounds. NEW — Taking offers. Jon 414-482-2532 or fere@phantasy.com.

If you're crazy enough to be selling your gear...

Please be sure to pass along how absolutely vital it is to have a subscription to the *Transoniq Hacker*. And how wonderful we are. And how you couldn't have survived without us. And how they should quick send us a check before they do anything else. And...

SAMPLES/PATCHES/SOUNDS

TH's Jack Tolin presents SYNTH-BITS! Classic HR-16 drums (2 disks; 49 sounds), M1 synth-textures (5 disks; 50 sounds) come in easy to manage samples that turn your EPS-16+ or ASR-10 into a synthesizer! Star-Trec SF blurbs (2 disks; 20 sounds). Only $4 a disk s/h. Get all for $30! SF blurbs for your PC, add $2 with your order. Jack Tolin, 9314 Myrtle Ave., # 186, Kansas City, MO 64132.

FINALLY! A new set of 16-bit samples from Tom Shear. This time he tackles the Waldorf Microwave! For only $15 + $3 S/H, you can have 3 disks packed with the fattest digilog synth sounds you've ever heard! Send an SASE or e-mail (tomshear@AOL.com) for free catalog. Tom Shear, 805 5th Avenue, Williamsport, PA, 17701.

MISC

Mint back issues of *Transoniq Hacker*. #31 — #34, 39, 43 — 67, 71 — 79. $40 for the lot, including UPS. Glen Bering, Box 7053, Ann Arbor, MI 48107. Phone: (313) 995-5445.

OUT-OF-PRINT BACK ISSUES

M.U.G. will provide Out-of-Print issues for cost of materials and postage. M.U.G. Hotline: 212-465-3430 or write: G-4 Productions, PO Box 615TH, Yonkers, NY 10703. Attn: TH Back Issues. Phone: (212) 465-3430. * * * Folks in the New York City area can get copies of unavailable back issues of the *Hacker* – call Jordan Scott, 718-983-2400.

FREE CLASSIFIEDS!

Well – within limits. We're offering free classified advertising (up to 40 words) for your sampled sounds or patches. Additional words, or ads for other products or services, are $0.25/ word per issue (**BOLD** type: $0.45/word). Unless renewed, freebie ads are removed after 2 issues. While you're welcome to resell copyrighted sounds and programs that you no longer have any use for, ads for *copies* of copyrighted material will not be accepted. Sorry – we can't (we won't!) take ad dictation over the phone!

The Interface

Letters for The Interface may be sent to any of the following addresses:
U.S. Mail - The Interface, Transoniq Hacker, 1402 SW Upland Dr., Portland, OR 97221
Electronic mail - GEnie Network: TRANSONIQ, Internet: interface@transoniq.com.
This is probably one of the most open forums in the music industry. Letter writers are asked to please keep the vitriol to a minimum. Readers are reminded to take everything with a grain of salt. Resident answer-man is Clark Salisbury (CS). Letter publication is subject to space considerations.

Hacker:

Have you tried the sound editor written by Erwin Petter of Germany – ***KS32-EDITOR*** in MIDI/MUSIC (windows section)?

IT's simple but GREAT! The $15.00 paid for version has enhanced features including drum editing.

Beware. It's straightforward. It doesn't ask "Are You Sure?" before overwriting sounds. I pressed SEND BANK and wrote over all of my RAM sounds. The program lets you save an entire bank of sounds which means that performance banks are possible (it takes a few minutes to write an entire bank of sounds to the KS-32).

This program also means that sounds can be E-MAILED, not just stored.

It has Preset features but I have not tried them.

75542.2134@compuserve.com

[CS – Thanks for the cool tip! Uh, mind if I just call you 75 for short?]

Dear Hackers,

What is the latest news regarding the **TS** bug which causes existing track data to be shifted when a new event is entered in EVENT LIST?

Regards,
Mel Laraway
Australia

[Ensoniq – Sorry, we have no news regarding this bug.]

Dear Hacker,

I own a **TS-10**. The problems I have are:

1) Every so often the sequencer will not work in Song Mode giving the following faults. Sounds on a track will not work when recording. The sound will play back but I can't hear what I'm recording. Or the sound on the track will change in name but the original sound stays on the track. For example, I change the track sound from Drum to Violin. The name of the track sound changes to Violin – but it keeps playing the Drum.

2) The GOTO function won't work with a Cooper II sync unit hooked up, regardless of whether it's on internal or MIDI control. Turning off Cooper II causes Sync Unit to work.

3) When in Disk Drive I get a lot of "Bad Data" messages coming up on the display. I seem to get about 10% failure on disks – factory sounds and blank disks.

4) Sometimes when playing a sequence, the Mix/Pan function will stay at the value I change it to and sometimes it won't. How can I get it to keep the mixing changes? Usually the values return to default when the machine stops.

5) I have a Syquest 270 MB hard drive. How can I get sounds onto it? I have access to a PC. Would I be better off to swap it for a CD-ROM and disk?

6) Cost of sounds: The wholesale prices of sounds and disks here are about twice the retail price in the U.S. For instance, the TSD 1002 retails for $19.95 in the U.S. Here in New Zealand, the wholesale price is $40 and the retail price in $60. (All prices in U.S. dollars.) Does Ensoniq have a supplier who can provide a mail order service for their sounds?

7) Is it feasible to use a CD ROM player to play audio CDs through a home stereo?

8) Is it possible to obtain a CD of sound effects?

9) I recorded "*Zak The Wonder Dog*" which features a dog "singing" a verse on a Korg. How can I get a dog to "yodel" on an Ensoniq? Can I have the sound effect sampled and spread notewise across the keyboard?

10) What computer and software can I use to give me a sampling option?

Kind regards,
Dave Ward
Taranaki, New Zealand

[CS – As for question 1) and 2), it's possible that your instrument could benefit from servicing, but it also occurs to me that these problems might be caused by a "MIDI loop" (a MIDI loop occurs when the data sent to a device's MIDI out port is "echoed" back to its MIDI in port). This is easy enough to check out, though. Just disconnect all MIDI cables from your TS-10, and see if the problem persists. If it does, then you can rule out MIDI loop as the cause, and start thinking about contacting Ensoniq Customer Service (610-647-3930).

3) I've found that disk quality varies greatly from one batch to the next, particularly with low-cost bulk-purchase diskettes. I would say that if you're using high-quality, name brand diskettes you shouldn't experience too many errors (as long as you don't store your disks along with your collection of refrigerator magnets). With low-cost disks, a one-in-ten failure rate isn't anything too uncommon; if you're experiencing this with high-quality disks, it's possible that your disk drive needs some attention. Again, check with service.

4) The initial settings for mix and pan are recorded into your sequence right along with everything else. If you want to change these, you'll need to erase the original mix and pan data from any tracks in question. You can do this in a couple of ways. First, you can enter the event editor, and delete the mix volume (MXV) and pan (PAN) events from the beginning of any track you want to change.

Alternatively, you can use the FILTER command in the track editing pages to

select the type of data you wish to erase, and from which track.

5) The easiest way to get sampled sounds (you are wondering about sampled *sounds, right?) onto your Syquest drive would be to plug the drive into an ASR-10, and save the sounds you're interested in from the ASR to the Syquest.*

Also, Gary Geibler's been working on SCSI support for his well-regarded set of Ensoniq disk utilities for PCs and compatibles. Since Gary's working for Ensoniq, perhaps he (or someone else there) might get in a plug for his stuff...

A CD-ROM drive, on the other hand, will give you access to hundreds of megs worth of sounds that you can use with your TS, and no special setup is required (other than plugging the drive into your TS-10). Keep in mind, though, that you can't save edited versions of your sounds back onto the CD-ROM, so if you plan on doing a lot of editing this may not be the best choice. Still, I've been seeing CD-ROM drives for as little as $100 or so here in the states. At those prices, it's difficult to see how you could go wrong.

7) Yes, most CD-ROM players can be used to play audio CDs. Generally, software is included with the drive to provide a way for you to control the playback of audio CDs right from your computer.

8) Yes, there are tons of sound effects available in a variety of commercial libraries; try consulting Mix Magazine, Recording Engineer/Producer Magazine, *and so on to locate sources. These, of course, will be audio CDs, from which you'd need to sample the appropriate sounds.*

There are some sound effects on Ensoniq's CDR-1, I believe, from the 27th Dimension holophoniq effects library, and Ensoniq may have other effects on other CDs as well. Your local Ensoniq representative should be able to clue you in as to what's available.

9) and 10) First, make sure your yodeling dog is hungry. Then, put a big steak on your Ensoniq...

Sorry, I couldn't resist. Certainly, a dog (yodeling or otherwise) can be sampled for whatever diabolical purposes you might have. Of course, you'll need something to actually perform the sampling with. If I were you, I'd consider an ASR-series instrument for that function. It will be less costly to set up for professional sampling than a PC with the software and hardware you'd need, and it has the advantage of being real compatible with your TS-10.

If you have your heart set on using a computer for sampling, I think you'll probably find that IBM/PC compatible machines will be your best bet at the current time. Although better software and hardware seem to exist for the Macintosh platform, the PC offers your only hope (at present) for being able to create disks that your TS-10 will read.]

[Ensoniq – 1) We concur with Clark – it sounds as if the keyboard is in a MIDI loop situation. Try our Fax Retrieval System at (800) 257-1439 (U.S.) or (610) 408-0741 (outside the U.S) and request document #0008 pertaining to use of the TS with an external sequencer. This document contains correct MIDI settings for the TS to eliminate MIDI loops. The information can also be found in our CompuServe Forum Library (Go MIENSONIQ) as a text file – 0008.TXT.

2) When using the TS with an external tape sync box, set the TS's clock to "MIDI." The TS-10 will then respond to the sync unit's emission of MIDI clocks or Song Position Pointer (SPP) information for tape sync. If the sync box doesn't send out SPP data, then the TS will not know to auto-locate to different parts of the song.

3) Another possibility is that the disk drive head may need cleaning. One can purchase a disk drive cleaner at a local computer store.

4) Clark is correct regarding mixdown volume/pan info. In addition, if the individual track parameter "mix/pan" data is changed while the sequence is playing, once the sequence starts playing again from the beginning of the loop, the values will go back to the original settings. Set the values needed without running the sequencer and when you go to a new sequence location, make sure that "Yes" is pressed on the "Save changes" prompt. This will keep the new data intact.

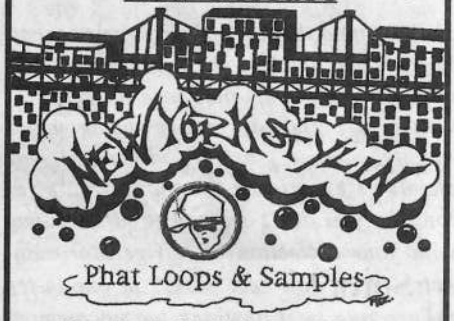
5) As an addendum to Clark's answer, if you are using CD-ROM sounds you can save your edits onto a TS formatted disk as a file type "Sample-edits."

6) Ensoniq is distributed exclusively by the Electric Factory NZ for New Zealand. There are several factors on US versus foreign pricing. The first is the value of the dollar and the conversion rate to New Zealand currency and the second is import taxes. These hard costs are added to what the distributor pays for the goods. Unfortunately, they have no control over these issues. You can contact the Electric Factory at 011-(649) 443-5916 for more information.

7-10) Clark is right on. Have you thought about sending a video of the yodeling dog to "America's Funniest Home Videos?" *Could be a quick $10,000...]*

ON POINT PRODUCTIONS

New Release



Phat Loops & Samples

New York Stylin' - Over 700 phat hip hop loops, live drums, freaky bits, bass riffs, melodic loops, and drum samples!

Sample Audio CD $69.95 +5.05 S&H

5 Star Review

"There's no denying that this disc is a great bargain" - Jim Aikin, Keyboard Feb. 95

Representin' Hip Hop

Everybody's givin' up the props on this joint! It's all butter... Over 700 loops, scratches, freaky bits, and drum samples.

Sample Audio CD

$49.95

+5.05 S&H

Order by phone or mail. Prices good worldwide.
Overnite delivery ($10.00) available on prepaid orders.
VISA/MC, COD, CHECK OR MONEY ORDER
Toll Free Info & Order: 1-800-331-8841
1-516-331-8804 (International)

On Point Productions
61 Superior St.
Port Jefferson Station, NY 11776

Hello TH

I own a **KS-32.** I have just purchased an Editor program (from our buddy in Germany) and am starting to explore the waves of sound programming. In trying out the appropriate Hackerpatches from within the *Hacker*, I noticed that some parameters are listed differently than my KS-32. Can you provide me with some sort of legend or explanation. As I said, I am new to sound programming and would like a little help. I apologize if this is a redundant matter for some.

Thanks,
Joseph E. Stokes
Stokes2000@AOL.com

[TH – Actually, none of us here are too sure what you're talking about. We'd need to know more about the editor program before we can tell just what are the differences. The SQ patch sheets should fairly closely match the keyboard's parameter organization – but there may be minor differences in abbreviations or things that have been "scrunched" in some manner to fit on our page. What this editor program does with them may be a whole different thing. We'd really like more info – maybe a screen shot or a manual page or something.]

TH:

Could you please tell me the best way to use my **SQ-1/32** voice keyboard with my computer? I'm using an IBM compatible 386 running Windows 3.1. My sequencing program is Powertracks Pro. I was using a GMmidi module, but I would love to use my new keyboard. I tried reading the manual but to me it's very confusing and doesn't mention anything about using the keyboards with computers.

Thanks,
Pauline Blackwood
brpq09a@prodigy.com

[CS – Sorry, Pauline, but the answer to your question could generate several typical TH articles, and frankly, the Interface is for answers, not reference works.

Don't despair, though; there are several things you can do.

First, check out the Transoniq-Net; you'll find the listing elsewhere in this issue.

Second, read the manual again, slowly. Do things one at a time, just as they are outlined. I know the manual can be daunting, but most folks can glean the important stuff with a little effort.

Third, talk to the party you bought the keyboard from. If it's a dealer, they have am ethical obligation to help you understand how to use the equipment you purchased from them. If you bought it secondhand, you might still be able to get some useful pointers from the person you bought it from.

Fourth, call Ensoniq Customer Service (610-647-3930). They will be happy to help you get going.

Finally, check your e-mail. There's a good chance one of our readers might be able to share some tips with you (readers wishing to respond, please note Pauline's e-mail address above).]

TH:

Hello, I am Timo Neronen from Finland. I'd like to know if there any sound editing and librarian programs for the **SQ-1** (shareware or commercial). I am interested in both Mac and PC platforms.

Timo Neronen
via Internet

[CS – Well, you might check out the Hacker's *Web page (http://www.teleport.com/~trnsoniq); you'll find a couple of shareware programs, a few links, and a couple other things of interest (we'll also be trying to add links to interesting sites; if any of you readers have tips on cool places to go, drop us a line). Also, check out issues number 122 and 123 for Garth Hjelte's articles on hackerworthy net sites. And, of course, there's always Ensoniq's web page (http://www.ensoniq.com). You won't find much in the way of shareware, but it's an interesting trip nonetheless.]*

[TH – We've also posted Garth's article at our ftp site (linked to the web page).]

Dear Transoniq Hacker,

I have enjoyed your magazine for the past two years – keep up the good work. I currently work in South Korea and I depend heavily on the *Hacker* to keep me informed on the latest and greatest technology for the **ASR-10**, and it does.

One quick question: When using a Roland GR-1 guitar synth to control/record MIDI on the ASR-10, is it possible to record six channels of MIDI data on one track/instrument using MIDI in mode set to mono? When playing the GR-1, you can hear all six channels, but when you record, only one channel gets recorded.

Yes, I have tried millions of combinations to get this to work and the only way I have found to record more than one channel at a time is to use multi mode with six channels loaded. This works, but it is a

hassle when you want to record. Don't say set the ASR to omni mode – then pitch bend is applied to all channels instead of one, and when you are trying to simulate guitar or bass each string/channel has to be independent from one another.

Help and thanks,
Merle
South Korea

[CS – I'm afraid you're out of luck, Merle. There's no way to record six channels of MIDI data into a single track the ASR; each ASR track can have one, and only one, MIDI channel on which it transmits. The methods you've already hit upon are the best for recording from your GR synth.]

Hi technoheads!

I have a question concerning the digital input of the **ASR-10**. I have noticed that it only works if I activate the thru (I don't know the official name of the two L/R buttons anymore) so that the red LED goes on, like when I want to listen to the signal I'm sampling. As soon as I have activated it, I see the meters on the display react to the input signal. But until then, they don't.

Also, I have noticed that when I cue and review with my CD player (a Phillips, I don't have the exact name present), the ASR seems to lose the synchronization with the digital signal, and the whole thing gets out of phase or even starts to sound like something with a delay on it.

Problem #3: Has anyone ever succeeded in making a backup by digital I/O? I saved all my 270MB Syquest cartridges and tried to verify them on two occasions. I always got an error (I use two Sony DATs: a DTC-670 and a DTC-60).

Has anyone ever experienced these problems?

Thanks for your Ensoniq support, I love your magazine.

And thanks to Ensoniq for making great samplers!

Best wishes,
Eric Lewis
Via Internet

[CS – I believe that the ASR does not begin monitoring digital audio until you have pressed the Audio Track buttons, as you have discovered. This isn't a problem; it's just the way it works.

As far as the problems with your CD player, different products handle digital audio differently. Without going into a long discussion, suffice it to say that when transferring digital audio from one machine to another, some kind of synchronization must take place. Generally, the playback machine will send sync and the record machine will slave to it. What playback machines do when they are stopped or paused, though, is not always consistent. One machine may continue to send sync, while another might not.

This is probably what's going on with your Phillips player; it probably stops sending sync when it's in cue or review mode, and (as you suspect), the ASR loses sync.

In the world of backups, I've had no problem making backups and restoring from same. The only thing I can think to suggest is that you make sure you are using data-quality DAT tapes, as the ASR is not particularly tolerant of drop-outs. Other than that, it might be a good idea to contact Ensoniq Customer Service (610-647-3930) to go over some of these issues.]

[Ensoniq – We designed the digital input monitoring that way because you may not always want to monitor the audio upon input. Specifically, when you are using the DI-10 to do a back-up to and then restore data from a DAT there is no reason for listening. Unless you and your dog like that sort of thing. (It might get him to yodel. You never know!)]

TH, Ensoniq,

Is there anyone out there who knows anything about how *Poly Pressure* works on Ensoniq keyboards? Specifically, I want to know if there is a way to accurately fine tune the poly pressure action.

I have owned three Ensoniq keyboards (original EPS, VFX, and EPS-16 Plus). I found that the original EPS had the best action of the three. It required little finger pressure in order to achieve a good feel for the pressure zones, but the keyboard made a clickity-clack sound when played. I found the VFX and the EPS-16 Plus to have much firmer pressure. It hurts my fingers to have to press so hard in order to get the poly pressure effect. Also, it appears that some of the keys respond to pressure a little more readily than others – resulting in a non-uniform keyboard.

It seems to me that the problem of how to gain more poly pressure sensitivity from the keyboard could be achieved in at least three ways:

1) Through software – the operating system could allow for a broader range of sensitivity levels, so I could select the one that feels just right.

2) Perhaps there's a potentiometer that can be tweaked or a modification to the circuitry that would allow more sensitivity.

3) Can the keys themselves be adjusted? Are there any replacement parts that will give new life to the keyboard? Can I buy a new keyboard for my instrument? One that is guaranteed to give easy, smooth and accurate pressure action across the entire keyboard?

If anyone out there has an answer or suggestion, I'd appreciate hearing from you.

Sincerely,
Robert Gately
PO Box 4711
Lancaster, CA 93539

[CS – Other than the settings that are available at the System level (which you've apparently already tried changing), I know of no adjustments that you could make that might affect pressure response.

Yes, you can buy a new keyboard, if you want. Contact Ensoniq Customer Service at (610) 647-3930.]

[Ensoniq – 2) This can't be done, since the sensitivity is digitally controlled.

We're a bit surprised by your comments. With the System sensitivity set to SOFT we find it very easy to get into Pressure. Have you tried that setting?]

Dear Hacker/Ensoniq:

I'm sure I'm not the only bonehead out there who thought that the new Jaz (1 GB, removable <$600) drive would be the answer to my SCSI dreams. I looked on the Ensoniq Web page and in the compatibility chart I find that the best drive for my **ASR-10** will not work with my **EPS-16+**!!!! SCSI is SCSI right? WRONG!

What gives? Is there any workaround for this? Do I have to have two incompatible SCSI drives for my otherwise incestuously compatible Ensoniq samplers?? This is very annoying. Please tell me that I misinterpreted the chart. Please tell me that Mr. Giebler has hacked the EPS-16+ OS to read and write to the Jaz drive. Otherwise, please explain. This sucks! I'm not buying two drives! I mean, I was ready to buy a Syquest until I found out about the Jaz, now ...?? GR%&*#$-aaahAAAHHRG!! Any suggestions would also be appreciated.

Otherwise, everything is fine.

Thanks,
Mark Snyder
Via Internet

[CS – As far as I can tell, the information you have is correct; the Jaz drive will not work with your EPS16-PLUS (sorry).]

[Ensoniq – Unfortunately as with all "standards" there is no guaranteed universal adherence to specs. Just because SCSI exists does not guarantee that all devices (especially products designed many years apart from each other) will work together. For example, the original Apple Macintosh SCSI interface did not adhere to the spec. It was necessary for hard drive manufacturers and Ensoniq to follow suit if they (we) wanted it to work. As time went on, the implementation was refined on the Mac, the hard drives, and our products.

The EPS-16 PLUS went out of production before the current "state-of-the-art" of Apple-compatible SCSI. And the Jaz drive is at the forefront of SCSI-2 compatibility. We are sorry for your dilemma, but at least the cost of storage is dropping rapidly, and the idea of having more than one drive is nowhere near as expensive as it once was. (Please don't write back to argue this point – we know it's not the answer you want to hear. We're just trying to find a little "silver-lining" for your tale of woe!)]

Hi!

I am an Ensoniq lover and currently using EPS-16+, VFX-sd, and DP/4. Some Japanese competitor, such as Korg and Roland, is now producing some new products, called "Interactive Music Workstation." The new kits the ability to pre-set "style" with bass line, drum pattern, some background sounds. I think most of the player know it. Will Ensoniq introduce a similar product in the near future?

Thanks,
trouble@hntp2.hinet.net (*LAi-&)

[CS – In my experience, Ensoniq never lets on what they're doing until they are pretty darn well ready to do it, so I'd be surprised if they told you they were going to produce this kind of product. Still, it never hurts to ask...]

[Ensoniq – .]

To: interface@transoniq.com
Subject: Send program selection

I'm at the end. I've tried many combinations but my old brain can't seem to grasp how to send and receive programs on my MIDI setup reliably.

Here's the setup: I have a **TS-12** as the controlling station hooked to a **SD-1** and a **KS-32**. When I call up a sequence and want to use programs on the other two

Change of Address

Please let us know at least four weeks in advance to avoid missing any issues. The Post Office really will *NOT* reliably forward this type of mail. (Believe us, not them!) We need to know both your old and your new address. (Issues missed due to late or no change notification are your own dumb fault – we mailed them!)

Missing or Damaged Issues?

Every month we mail out thousands of issues and every month about a dozen get "misplaced" by the Post Office. If you're ever one of the winners of this lottery, just give us a call (503-227-6848, 8 am – 8 pm Pacific Time) and we'll be happy to mail a replacement copy — no prob. (However, if you accuse us of nefarious schemes to "rip you off," you will be offered a refund and given helpful subscription info for other musician magazines.)

KBs, I can never seem to get the right program loaded. A lot of my confusion seem to be in the "send program change" area. When I go above the limit (I think 125, I don't have the KBs in front of me now) the whole thing gets very confusing. I know I'm making this harder than it is. Maybe you can reprogram my mind and set me on the right path. Any help is appreciated.

Thanks,
lfk
Via Internet

[CS – Isn't it strange how something as basic as program changes can be so mystifying? But then, that's the beauty of standards...

Anyway, you need to take a couple of things into account in your situation. First is that your TS-12 can and will send program changes on multiple MIDI channels when new sequences are selected; how either of your other keyboards responds to those is up to you to keep straight.

Second (and judging from your letter, you seem to have some inkling about this already) what happens when you send program changes numbered above 120 is not what you might expect.

Regarding point number one: make sure that transmission and reception channels are set up correctly. In other words, if you want track one of Sequence/Preset "X" in the TS-12 to control the sound assigned to track one in Sequence/Preset "Y" on your SD-1, but not to control any sound in your KS-32, you must make sure that track one in the TS-12 and track one in the SD-1 are set to the same MIDI channel, and that the KS-32 has none of its tracks (or its basic channel) set to this MIDI channel.

As for point two, try to understand how each of your instruments groups its sound banks. The TS-12 has five banks (not including sampled instruments), each of which contains 60 sounds. The SD-1 has two banks, each of which has 60 sounds. And the KS-32 has two banks, each of which contains 80 sounds.

To select a program in the SD-1 or KS-32, you may need to send a bank select message, as well as a program change. In other words, let's say you want to select program 16 in the INT bank of your KS-32. You send a program change of 16, but the wrong sound comes up. Why? Because sending a program change without a bank select message will load the program from whatever bank is current. The current bank in the KS is, by default, the ROM bank.

So, you'll need to send a bank select message followed by the program change message. The bank select message can be accessed in the TS-12 by pressing the MIDI Status button in the sequencer section until you see BANK in the display. This message consists of two parts – the MSB (Most Significant Byte) and the LSB (Least Significant Byte). To select a bank remotely on an Ensoniq device, you'll need to deal only with the MSB, I believe (I get confused about these, too). To select the INT bank in the KS-32, then, select the Bank MSB; if LSB is showing in the display, press the soft button underneath it, and use the arrow keys or data slider to change it to MSB. Now set the number to 001 (note that banks are numbered starting with 000).

Your KS-32 won't do anything immediately. You need to send the second part of this message, (the program change number), before anything will actually change. So cycle through until you reach the PROGRAM page, and set the program to 16.

That's pretty much all there is to it; if you're still having trouble, try contacting Ensoniq Customer Service directly. I'm sure they'll be delighted to get you on the right track.]

[Ensoniq – Clark's answer is fine for the KS-32, but the SD-1 does not respond to Bank Select messages. It uses the higher program change numbers as follows:

Program change #124
selects ROM 1 Programs
Program change #126
selects INT Programs
Program change #127
selects ROM 0 Programs

You need to first send the program change to choose the desired Bank followed by another lower program change to select the correct individual Program from that Bank. The best way to do this from the TS is to use two tracks set to the same MIDI channel (ex. 11 and 12), where track 11 has the high program number to select the Bank and track 12 has the specific sound's program number. Your sequenced data can be on either track. It doesn't have to be on both (and in fact shouldn't be).

Also remember that since each Bank in the SD-1 has 60 programs, program changes 061-120 will always select Cartridge programs (if one is available).

Why did we skip Program #128? We didn't – it selects Presets, with the following program change assignment:

001-020 selects INT Presets
021-040 selects CRT Presets
041-060 selects RM) Presets
061-080 selects RM1 Presets]

Current Ensoniq O.S.
(Disk/EPROM)

EPS	2.49/2.40
EPS-M	2.49/2.41
EPS-16 PLUS	1.3/1.00F
MASOS	2.0
MIRAGE	3.2
ESQ	3.5
ESQ-M	1.2
SQ-80	1.8
VFX	2.30
VFX-SD	2.1/2.00
SQ-1	1.11
SQ-1 32	2.03
SQ-1 PLUS	1.15
SQ-R	1.20
SQ-R 32	2.03
SQ-R PLUS	1.15
SQ-2	1.2
SQ-2 32	2.03
SD-1	4.10/4.10
SD-1 32	4.10/4.10
DP/4	1.15
DP/4+	2.02
KS-32	3.10
ASR-10	3.53/1.5
ASR-88	3.53/3.50
KMX-8	2.00
KMX-16	1.50
TS-10/12	3.05
KT-76/88	1.62
Soundscape	1.3.03

HACKER BOOTEEQ

PROFESSIONAL QUALITY
Low-cost sequences for
The EPS/EPS-16+, SQ-80, ESQ-1,
VFX-sd, SD-1, Roland, IBM/DOS

Rock ('50s, '60s, '70s, '80s)
Big Band – Top 40 Country

Call or Write – Any time, 24 Hours

Music Magic

10541 EARL AVE.
BENNINGTON NE 68007
1-402-238-2876

MUSIC LABS *Load and Play* ***Sequences***

Sequences for the gigging musician...

For the Ensoniq . . .
EPS, 16+, ASR 10/12 and TS-10/12
All titles also available in . . .
IBM & ATARI . . . GM, GS - SMF
Popular requests, blues, country and classic rock.
Write or call for a catalog!

Music Labs
5109 Point Fosdick DR NW #E268
Gig Harbor, WA 98335
Ph (206) 265-3091

Online E-mail support 76243.2623@compuserve.com

VFX, VFXsd, SD-1 Owners –
Public Domain Volume 3
Moog, Classic Keys, Brass, Sax Sections, Pads, Organs, Strings and Key Percussion.
60 sounds, 20 presets. Disks: $12.50.

Westheaven Domain
VFX, VFXsd, SD-1 PD Volumes 1 & 2
60+ sounds, 20 presets. Disks: $12.50.
ESQ-1 PD Volume 1. 273 sounds.
SQ-80 PD Volume 1. 115 sounds.
Disks: $15.50
SQ-1 PD Volume 1. 80 sounds. Disks: $19.50

Latter Sound Productions
1341 Westheaven Ct.
Tallahassee, FL 32310-8629
(904) 575-5561
Florida residents add sales tax

THE SAMPLE BANK
PC CD-ROM

Contains:
Over 250 Megs of samples for EPS/16+/ASR-10/TS-10/K-2000.
Over 150 Megs of samples for TX-16W.
Over 75 Megs of samples for the Mirage.
Over 125 Megs of WAVE files for the PC.

To use, put the CD in your PC, select a file, and the file is copied to a disk ready for use in your sampler.

SALE! $99 See *Hacker* June '95 review

CYBERSOUNDS
Sherwood Music
124 Ottawa St., S.
Kitchener, ONT N2G-3S9, Canada
Phone: 519-745-0021, Fax: 519-745-0953

Call or write for free info. VISA/MC American Express accepted. Money orders payable to S. Brenner.

L. B. Music Sequences

We Support Ensoniq • Roland
Korg • Yamaha • SMF-GS/GM Formats

Why not give L. B. Music a try and see why so many people love our sequences — and keep coming back for more!!

Music And Lyrics Now Available!!
Toll Free Orderline: ***1-800-3LB-MUSIC***
Visa and Mastercard Accepted

L. B. Music
51 Charter Oak Drive
Newton Square, PA 19073-3044
610-356-7255 / Fax: 610-356-6737

3D SOUNDS

CD-ROMS FOR... *BEST DEAL AROUND!*

$49 + $2 s/h Each

Sampler Bank: 600+ megs of samples for ASR/TS/K-2000/EPS. Available in two formats:
1. STANDARD ENSONIQ: Use to direct load into your sampler. Must have SCSI and SCSI CD-ROM drive. **$49**
2. PC FORMAT: Use your PC to extract files from CD-ROM and save them to floppies for use in your sampler. **$49**

Every music style: pianos, synths, drums, loops, basses, pads, orchestral, techno, brass, strings and much more. Lots of patch selects and effects! Specify format (PC/Ens.)

Mega MIDI Files: CD-ROM for PC. Well over 5000 public domain MIDI files ready to be played directly from the CD. Plus MOD files and shareware utilities. Every musical style from pop to jazz to rock to rap etc. Not for commercial use. **$49**

Mention the "Hacker" and get an extra $10 off your order!
Also available: 1900 instrument WAVE files (600 megs) on CD-ROM. $39
Audio sample CD's. $35 each. Call!!!

BOX 22065
50 WESTMOUNT RD. N.
WATERLOO, ONTARIO
CANADA, N2L 6J7
519-745-8982
kjwood@watarts.uwaterloo.ca

ENSONIQ DISKETTE MANAGER
Use Ensoniq Disks on your IBM-PC
Read/Write/Format/Copy and more.
Supports all Ensoniq Disk Formats.

ENSONIQ MIDI MANAGER
Send or Receive Data through MIDI to your PC for these keyboards:
KS-32 VFX SQ-1 SQ-2 ESQ-1

SEQUENCE CONVERTERS
Convert Standard MIDI Files to/from Sequences for these keyboards:

TS-10/12	SQ-1	SD-1	VFX-sd
SQ-80	EPS-16	EPS	ASR-10
KS-32	KT-76/88	SQ-2	ESQ-1

SD-1 TO TS-10/12 CONVERTER
for VFX-sd or SD-1 sequences & songs.

Call now to order or for more information on these and other software packages.

Giebler Enterprises
26 Crestview Drive
Phoenixville, PA 19460
(610) 933-0332
Fax: 933-0395

In a top-secret underground laboratory, Syntaur engineers have been hard at work crafting a new aural arsenal for the KT synthesizers. Now, you can have these sounds right at your fingertips.

KT SET 1

80 serious patches for the KT-76 and KT-88.

$39.95 on disk*
$97.95 PCMCIA card

** Available formats: Mac, IBM, or Atari disk with loading software; Alesis Datadisk; SysEx disk for Ensoniq ASR-10, EPS-16, EPS, TS-10, TS-12, SD-1, VFX-sd.*

Orders must include $4 shipping ($6 for foreign orders). MasterCard, Visa, and AmEx accepted. **Write or call for free catalog of sounds for all Ensoniq keyboards!**

Syntaur Productions
5402 W. 43rd St., Houston, TX 77092
(713) 682-1960 (800) 334-1288

ASR + 16-PLUS EFFECTS

The Voder synthesizes vocals out of any sampled sound. It can *sound* like a vocoder, but there's never been an effect like this for any other keyboard. The lowest 16 keys of the keyboard each trigger a different vowel or consonant. Your left hand actually forms words by "spelling" them. (OK, it takes some practice to sing a whole sentence.) Your right hand controls the notes and chords of your robot choir. And how long have you been waiting to make a big fat breathy choir sing "Louie, Louie?" Or maybe it was a car crash snare that you needed to say "mom!" Need details? The Voder is a 3-band parametric EQ effect for the Ensoniq ASR-10 and EPS-16 PLUS. This EQ can rapidly "morph" between many different settings. These different settings impose vocal characteristics onto any sound that is run through the EQ. It's much cooler than a Morpheus. Audio-in is supported.

The Voder disk is $49.95 and comes with sounds: a choir, a solo voice, a robot voice, a talking rhythm loop. Order by MC/VISA by calling (610) 251-9562 or send check or money order to WAVeBOY Industries, PO BOX 233, Paoli, PA 19301 USA (Price includes shipping but add $6 outside US/CANADA. PA residents add 6% tax.)

WAVeBOY INDUSTRIES

TRANSONIQ HACKER
1402 SW UPLAND DR., PORTLAND, OR 97221

BULK RATE
U.S. POSTAGE
PAID
PORTLAND, OR
PERMIT NO. 11

ADDRESS CORRECTION REQUESTED

SUBSCRIPTION MATERIAL
DATED MATERIAL - TIME VALUE

Postmaster: Please return Form 3547 as soon as possible so we can change our records. This is a monthly publication.

Publisher: Eric Geislinger
Editrix: Jane Talisman

Our (somewhat regular) illustrious bevy of writers includes: Craig Anderton, Robby Berman, Paul Bissell, Steve Byhurst, Barry Carson, Mark Clifton, Anthony Ferrara, Pat Finnigan, Charles R. Fischer, Jeffrey Fisher, Gary Giebler, Jim Grote, Garth Hjelte, Bryce Inman, Jeff Jetton, Dara Jones, Brad Kaufman, Johnny Klonaris, John Loffink, Daniel Mandel, Sam Mims, Jeffrey Rhoads, Brian Rost, Clark Salisbury, Tom Shear, Joe Slater, Kirk Slinkard, Jack Tolin, and Steve Vincent.

Copyright 1995, Transoniq Hacker, 1402 SW Upland Drive, Portland, OR 97221. Phone: (503) 227-6848 (8 am to 9 pm Pacific West Coast Time).

Advertising rates: Please send for rate card.
Rates for authors: Please send for writer-info card.

Subscriptions: 12 monthly issues. US: $23/year, All others: $32/year. Payable in US funds.

Transoniq Hacker is the independent user's news magazine for Ensoniq products. *Transoniq Hacker* is not affiliated in any way with Ensoniq Corp. Ensoniq and the names of their various products are registered trademarks of the Ensoniq Corp. Opinions expressed are those of the authors and do not necessarily reflect those of the publisher or Ensoniq Corp. Printed in the United States.

Rubber Chicken Software Co. - Your Ensoniq Sample & Accessories Source!

NEW PRODUCTS!

"XP meets EPS/ASR"

Roland's put some nice sounding keyboards out lately, and the XP-50 is probably the best example of that. Armed with a RISC-speed processor, the Roland has a sound, feel, and touch that real turns heads! We have sampled these sounds, and installed the same touch and feel the XP-50 has. Included are a great piano, super brass sounds, some INCREDIBLE pads, and industrial sounds too! 35 sounds in all.

$49.95!

"SD meets ASR" II

The legacy continues with our new samples of the SD-1 - this isn't a out-of-date dinosaur; it's full of great sounds! 40 new samples.

$49.95!

Ask about Covert Videos!

These helpful videos cover basic functions as well as advanced techniques. Call for availability at the end of October!

Electric Bass Pak!

Plucked and picked versions of Hamers, Rickenbackers, Yamaha Fretless's, Pedulla's, Alembics, and Fenders!

$39.95!

The Guitar Pak!

These are great guitars. Distorted and clean, funky and country. Not only have you sampled some great guitar sounds and nuances, we have also produced over 30 effects for more guitar EQ's and effects.

$49.95!

Resonant Madness!

Analog synths have resonant filters. The EPS and ASR do not - until you get these samples! WaveBoy makes a great resonant filter, but it's monophonic. These sounds offer polyphonic sampled filtering to achieve the linear resonant effect you are after. Great for retro-sounds, and just good stuff.

$39.95!

Sample/Sampler-Bank CD-ROMs (Ensoniq & PC format)

The SampleBank is from CyberSounds. 650 megs of great Ensoniq sounds - analog & new synths, drum machines, and more. The Sampler-Bank is from 3D Sounds. 550megs more - lot's of drums, rhythm loops, XR-10, Fairlight, Chroma, S-4, and more!

S-B: $74.95 (PC), $99.95 (Ensoniq)! Sr-B: $49.95!

EPS/ASR Tools for Windows 2.5

Our Monitor software gives you the inside look into your Ensoniq sampler. Includes Wavesample viewing/editing, advanced looping/editing functions, Naming Wizard, and full editing!

$59.95!

Coming Soon! The Brass Expression Kit and Drum Madness!

Brass, natural and synthetic, solo and ensemble, with **expression** like you've never heard before. Not just sounds - includes additional hardware and an instructional video. Drum Madness - OUTRAGEOUS drums! We are working with the best of the acoustic and electrics - drum sounds bigger and better than what you are used to!

NOW, WHERE CAN YOU GET ALL THIS?

*by phone or fax: **1-800-8-PRO-EPS, 1-612-235-9798***
*by mail: **P.O. Box 100, Willmar, MN 56201***
*by Internet: **chickenEPS@willmar.com***