

Transoniq

Hacker

The Independent News
Magazine for Ensoniq Users

Patchwork (We ain't talking about quilting)

Tom Shear



It always cracks me up (he said with a smug smile...) to read letters from people talking about how horrible it is that the EPS doesn't have this feature, or that the ASR lacks that ability. When you think about it, very few sampler owners out there even take advantage of the features they *do* have. One of the most criminally neglected of these features is the patch select. This is a feature that is still more or less unique to Ensoniq equipment and yet, very few people take the time to explore it. So your sampler only has eight instruments at once... So you only have 2 Megs of memory... Stop and think of how you can get around these problems with a little clever programming. After all, you can have 4 patch variations per instrument, and if you multiply that by 8, that brings us up to 32 instruments.

The most obvious types of patch selects are slight variations that might be useful for live performance. These include having a chorused variation of the sound,

having the sound in octaves, or in fifths. It could even be something as subtle as having a slightly louder version available to you to punch through on those big choruses. Another useful variation for well-produced sequences is to have variations of the instrument through different effects busses. If you're using the CHOR+REV+DDL algorithm, you could have the sound available through a fat chorus, a cavernous reverb, and a delay, all selectable at your fingertips.

One trick some people like to use is to have a backwards variation. While this is most often used on drum and percussion sounds, it can be a neat effect with melodic sounds too, especially ones with distinct attack transients. The problem with this is that you won't have a loop so the sound will vary in length across the keyboard, with the lower notes stretching out awhile and the upper ones flit away fairly quickly. This makes using the instrument melodically in a consistent-sounding way extremely difficult. The way around this is found on the EDIT-WAVE page. We're going to chop off some of the extra length of the lower notes in a way that adjusts as we play up the keyboard so that the upper notes are left totally unaltered, but the lower notes are a little closer in length the upper ones by cutting off varying amounts of the sound after the attack (or before it, since we're talking about backwards sounds here...).

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Scroll until you see the MOD parameter. Select START with KBD as your SOURCE. Scroll right one more time and you'll see the AMOUNT and the RANGE parameters. Select +99 for your AMOUNT. The RANGE parameter is a little trickier. The correct setting for this depends on the size of your sample. Spend some time to find a value that gets you close to what you're after and play around with varying combinations of AMOUNT and RANGE until you're happy with the result. You're most likely not going to end up with something the exact same length across the board, but you can usually get it close enough to be usable. For those who need more precise control, try using the mod wheel as your SOURCE... now you can adjust it by hand.

One of the ways you can get the most variations is to use a sound with a smooth, single cycle loop. By moving the loop position around, you will find a number of different timbres available to you, and a great starting point for synthesizing some totally-different sounding patch variations. Of course, there's no rule that says you even have to keep the same loop at all. Each patch could very easily have completely different loops set if you were so inclined. One of the biggest mistakes people make regarding patch selects, assuming they can only be used for slight variations on the main sound. On the contrary, you can turn them into completely different sounds if you're willing to invest the time and Tylenol.

Finally, here are some quick suggestions for ways you can give yourself a wide variety of sounds via the patch selects.

- If the sound you're using has a single cycle loop, or you can get a single cycle loop on it, try hitting EDIT- LAYER and setting the glide mode to MINIMODE and the glide time to taste. Instant Minimoog lead!

- Another easy variation on single cycle loop sounds (especially ones with a squarewave or bell type timbre) is to turn it into an organ. Simply copy the main layer and punch the second layer up an octave. Optionally, you can add another layer tuned a fifth above the main layer (you'll want to lower the volume a little on the AMP page for this, though...)
- If you're using a sweep type sound, try pushing the sample START time up past the sweeping portion to where the sustain starts. Use this sustain portion to synthesize a poly-synth or synth brass-type sound.
- Or, if you're using sustaining a sound with a distinct attack (i.e., Synth Bells), punch the sample START past the attack, assign ENV 3 to the SLOW STRING envelope, and *voilà!* Instant pad.

This is by no means intended to be the end-all be-all of patch select articles — more to provide some food for thought for budding programmers out there who may have thought they'd exhausted the potential of their machines. Have your own patch select tricks? Write 'em in, we'd love to hear them! ■

Bio: Hey... don't you owe Tom Shear some money?

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Front Panel

RND (🎵🎵)

Hacker News

Sometimes it seems like the whole music industry goes into a coma during the summer — letters drop off, writers have to be chased down and begged, ads go on hiatus... Ensoniq didn't even have any announcements. Oh well, *new feature* — readable type in the Interface! It may just be that doing a July/August issue might be the best way to help make up for some of the recent printing and postage increases. Obviously, we're talking *next* year, here. Something to think about...

We received a couple of questions regarding the review of

ASR's O.S. 3.08 in last month's issue. Yes, 3.53 is the latest — but 3.53 basically just tidies-up some features (as mentioned in Front Panel Issue #120). 3.08 was a *major* change — and the review was run past Ensoniq mere hours before we went to press. The review is current, but if you're upgrading, get 3.53.

We'd like to welcome a new advertiser, Tech Star Software — a new source for sample sets for the ASR/EPS/TS families.

10 Years ago in the *Hacker* — Clark Salisbury presents our first software review: *Texture*, a PC-based sequencer from Cherry Lane Technologies. Erick Hailstone continues his MIDI series. We have the beginnings of our infamous letters column, and the first Hypersoniq new product releases — which had nothing to do with Ensoniq products, but were all we had.

On Point Productions announces their second sample audio CD — *New York Stylin'*. 140 new hip hop loops, 110 live drum loops (a little more grungy than the more "classic sounding" *Representing Hip Hop*), 100 freaky bits such as bass loops, melodic loops, and subliminal sounds; followed by 350 drum samples from a variety of sources. All total,

about 270 loops and 710 samples. Produced by Don Henning. \$69.95. For further information, contact: On Point Productions, 61 Superior St., Port Jefferson Station, NY 11776. Phone: 1-800-331-8841.

From Cyberspace to Your Ear

Part I — Patches

Garth Hjelte

Computer communication has erupted into a way of life nowadays; it's certainly affected the music industry. Music distribution, promotion, advertising sites all have changed the scope of the music arts. And it's affecting the way we Ensoniq users approach our instruments.

Perhaps while cruising the Net you've seen files that are described as "ESQ-1 patches in Galaxy format," or "ASR 3.53 OS in Giebler format," — things like that. So you download it (if it's for your instrument it's gotta be good), but then what? How do you get a file that's laying in your computer to your Ensoniq instrument? Well, this month we're going to look into various ways of getting those patches into your synth. Next month — samples.

But First... Getting It Offline

FTP (File Transfer Protocol) is easy enough. If you are unfamiliar with it check with your Internet provider and you'll find out how easy it is to grab files from cyberspace and get 'em into your computer. Some providers even decode and unzip files for you and everything (wow).

Send to a Friend

This may be slightly off topic, but maybe sometimes you would like to send a sound file to a friend, or perhaps they have some you want and they'd like to send to you. This isn't like FTP'ing — you gotta send it e-mail. And if you are dealing with America On-Line or CompuServe, that means you have to jump through another hoop.

Computer files come in two flavors — text and binary. Text is a 7-bit format, and resembles the letters you are now reading. E-mail is made up of 7-bit text files. Binary information

is an 8-bit format, and isn't easily read by people. Binary files include executable files (.EXE), dynamic link libraries (.DLL), zip files (.ZIP), and more. Text files are usually .TXT, .WRI, .DOC, and other document formats. But to the online world — and here's the complication — you can only e-mail 7-bit text files, and the majority of files we deal with (especially the sound files we're talking about) are 8-bit, that is, binary. So how do we get around this? UUEncoding and decoding!

UU You, UU Me

What's UUcoding? (Note: for the Mac, the same type of process is called Binhex.) It's the translation of binary information into text format information. There are some good UUcoding programs like Richard Marks UUCODE, and I use Sabasoft's UUCODE for Windows. For the Mac there's Binhex. They will take in a binary file and spit out a coded text file to transmit. The coded version is usually 80% bigger than the binary file. Then you are ready to send it. Likewise, when you receive a file from the Internet, it's usually in a coded text file format (and most of the time compressed/zipped, to decrease the size of the file). Thus you want to decode it with your UU-Binhex program.

Another online problem is that many providers only have small "gateways." A gateway is the maximum allowable size of a packet of information coming through. A small gateway means large files (especially samples) have to be split up in order to transmit/receive. For example, for me to send a demo of my EPS/ASR Tools for Windows program to someone on the Internet, I have to UU Encode my zip file, split it up into 64K packets, import each file into America On-Line (that's my provider), and send them all out. Typically, it takes 15-16 full e-mail message's worth (it's a 301,278-byte

file). Then the poor guy at the other end has to put all the UUencoded textfiles end to end using a word processing program, UUdecode it and he's got it. It can get complex.

Note: If you are saying, "What's he talking about? I download files off the Internet all the time, and they are in binary format, and I don't have to UU/Binhex anything!" That's true, lots of Internet service providers convert text to-from binary automatically, making it invisible to you. But with AOL, CIS, and the majors, it's still an issue. But if you have a standard Internet PPP account, you'll probably never encounter the problem. But since there's more and more AOL and CIS coming on-line (in droves), please be aware of these "hoops."

Mac users will need Binhex to convert files to and from binary. Binhex works in the background of a number of Internet browsing/searching/downloading programs, automatically converting the files as they are downloaded to your machine. It can also be used as a stand-alone utility to convert files that have already arrived, but in the wrong format.

Don't let all this text-to-binary-to-text scare you. If you have to encounter it, you'll soon get used to it. And soon, there will be better ways of doing all this.

Izzit Disk or MIDI?

Once you've got the file, it can be transported from the 'puter to the 'board by one of two ways — either by MIDI communication or by physical media (floppy disks, removable hard disks, etc.). Generally, patches for synthesizers (ESQ-1, VFX/SD, SQ, TS, KT Series) are communicated through MIDI, and samples are communicated through media. That's changing on both sides lately, but that's another story.

One If By MIDI...

Patches for synthesizers are kept in lotsa format — DataDisk, Galaxy, XOR, MIDIex, Sys-Ex, and many more. It's important that you know what file format the patch file is in so you'll know how to transmit this to your keyboard.

Once you have the file in your computer, you'll need a program to extract the relevant data from the file and send it out the MIDI port, SCSI port, or onto the floppy disk. It extracts what's in the file, and then sends it in what's called system-exclusive data. That means it's a specialized MIDI message just for your instrument and it contains all the data needed to add new patches or, most of the time, to replace all the sounds with new ones. Remember, with synthesizers, it doesn't replace the actual waveforms that make up the

sound, but the different programs that alter those waves.

Let's look at a coupla sys/ex transmitters. MIDIex is a popular DOS utility with many patches online that seem to be in this format. (For the Mac, you'll usually find something else.)

MIDIex is fairly easy to use. I made a batch file that reads like this:

```
midix /I:7 /B:450000
```

because my PCMIDICard is set to interrupt 7. B stands for buffer, and 450,000 means I have made 450,000 bytes of memory available to send/receive data. I use MIDIex with a Wavestation (non-Ensoniq), but with your Ensoniq board the buffer could be less. (Note: the MIDIex that is at the Transoniq ftp site is an updated version, but doesn't have the "switches" as listed above — however, you'll probably not need them.)

Another program of this type is the MIDI Data Filer (or MDF). According to Todd Aiken of the oak.oakland.edu list, "I tried using MIDIex at home with my EPS Classic and SoundBlaster, and it would not recognize my MPU-401 interface at all, but MDF works beautifully. You can find it at ftp.cdrom.com in the directory /pub/garbo/garbo_pc/ sound with the filename md31.zip. It's only 28k zipped (I think) and it's absolutely free!"

There's also a no-frills MS-DOS MPU-401 MIDI Sysex Dump and Receive utility called SYSXUTIL.ZIP on CompuServe in the ENSONIQ forum. It has been tested successfully with ALL sysex messages of any type on ALL Ensoniq keyboards and modules — which may not be the case with other free, generic sysex utilities.

While cruising the Net, you probably will find ".syx" files, which stands for Cakewalk system-exclusive file format. CakeWalk has become very popular for sending/receiving system exclusive dumps. It's really quite easy with its smooth Windows interface. You can combine this with sequencing for a great setup. Cubase, Performer, MasterTracks Pro also provide this function. It's usually good to hook up both of your MIDI cables ("Out" of your keyboard into the "In" of the computer, and vice-versa). That way the handshakes can make good. If you find things not working, try unhooking the Keyboard OUT with the Computer IN. Sometimes it's the computer's fault, sometimes it's yours.

As a sidenote, MIDI system-exclusive patch dumps have come a long way since the beginning. Remember, PCs weren't popular items back a couple of years ago. Ensoniq equipped the Mirage to handle patch dumps from the ESQ-1

by a real "cheat." I have a KORG EX-8000 that required an insane handshaking scheme to get it to dump its data, and even then it was only one patch at a time.

Nowadays, it's much easier. If you're daring and want to become a (oh, here it comes) POWER USER, you might want to invest in a synth editor/librarian. Sound Quest makes a great line of Windows ed/libs called MIDI Quest. Not only can you edit any piece of data from the computer, you can also set up multiple SysEx dumps, to load all your sounds to multiple synths before each song. Wow! And in the Transoniq site, there is a superb shareware editor for the KS-32. Plus there are many of the editor/librarians that were first class for the ESQ-1 in its heyday that are offered for free now on the NET (ESQLIB comes to mind — it's available on CompuServe now).

Other SysEx programs are Software Forge SysEx Manager (syssexman.zip) and WinSysEx (winsysex.zip). (This one does only dumps TO the MIDI gear. It does NOT record sysex FROM synths etc.)

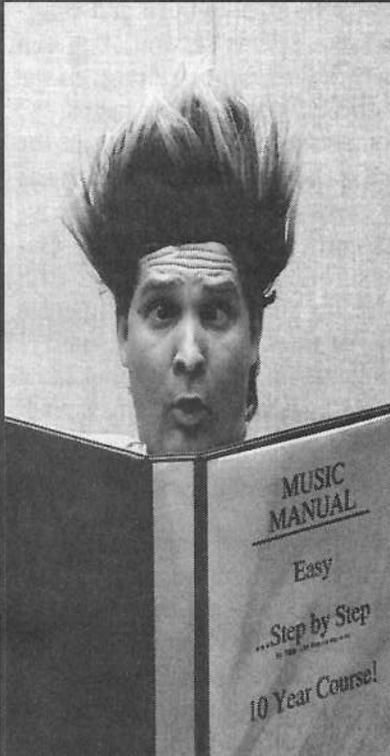
And not to forget the Mac, there are several shareware sysex programs for the Mac — Bulk Sysex Utility, MidiEx Mac,

and Flypaper. According to Steve Vincent, "...of the first two, MidiEx Mac seems to work better (on my system at least)." Steve bundled MidiEx Mac into the HackerPatch file "HackerPatch ESQ.MidiExMac.sit" at the Transoniq ftp site for the ESQ HackerPatches. So, Mac users don't have to shell out big bucks for Galaxy or some other librarian to send and receive patches. Hopefully, MidiEx Mac will be the standard, at least in Hacker circles, for Mac transfers.

Flypaper for the Mac, by Steve Berkley of epSCSi fame, allows you to save MIDI dumps into an application that you can give to your friends, download, etc. to load into their synths. For example, you can record a SysEx dump of MIDI from your DP/4 into Flypaper, save it into a "Transportable" application (overhead about 48k), and download it to wherever. Steve Berkley says it's available at most major online services and ftp sites.

Next month — samples and sites. ■

Bio: Garth Hjelte owns Rubber Chicken Software Company, a sound and who-knows-what-else company that devotes itself to Ensoniq products. He'd like to thank you for reading this article, and hopes that he can read one of yours as well.



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Encore (2 videos)	Korg AX30G	Finale CD-ROM (Quick ref.-Mac Basics)
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Bass-ic Principles

Garry Wasyliw

We synthesists live in a time when advancements in sound generation technologies continue at a rapid pace. Each step provides more ever more amazing possibilities to the musician but it seems that we are now reaching a sort of equilibrium where past developments are being revisited and recognized for their unique strengths. All through this evolution however, one thing that has always remained popular in modern music has been the sound of analog bass. This article and the accompanying patch analyze some of the principles involved in creating these bass sounds. The patch is for a TS-10/12 but the combination of voices 4, 5 and 6 can easily be adapted to other synths. The sound is very fat with a bit of a "bomp" to it and should fit in well with dance, pop or any technoid-beat oriented music.

Earlier analog synths used voltages in circuits to generate and shape electronic timbres. The oscillators could only produce simple waveforms whose shape and harmonic spectrum could be described by simple mathematical principles. A sawtooth wave for example has all harmonics present in a decreasing level of intensity and produces a bright, buzzy sound. A square wave produces only the odd numbered harmonics and has a characteristic "hollow" sound. As a square wave is altered to various rectangular shapes, other patterns of harmonics are eliminated producing differing tonalities. These raw waves have a very static sound and must be run through various modulators to improve their musical interest. Modern instruments can easily generate these shapes from digital data and the TS-10 contains a number of these in the Wave Class of "Waveforms."

The next main stage in the synthesis signal path tends to be a filter of some sort. Most digital filters limit the harmonic content of the waveform at a specified cutoff point, however analog filters also provide control of resonance which causes frequencies to be boosted in a narrow peak just before the cutoff point. This makes a sound more distinct or imparts a plucked sounding attack and generally adds harmonic interest. The above elements combine to make a bass sound that is a solid burst of low frequencies with a harmonic spectrum that cuts off where the frequencies of most other instruments in a mix begin.

When we attempt to produce this type of bass sound on a digital synthesizer there are a few problems with getting it exactly the same. A digital processor creates the sound in-

ternally using a big ream of numbers manipulated by a computer program. It is somewhat difficult to use a numerical model to analyze and describe all of the various subtle distortions of timbre that each analog stage adds to the signal path. Many digital synths do not have a resonant filter and those that do don't seem to sound as alive as the real thing. Another issue is that digital envelopes generally cannot activate as fast as voltage controlled envelopes and thus do not produce as crisp an attack. These issues can be compromised however, by all but the vintage purists in consideration of the advantages of stable tuning, patch storage, polyphony, MIDI, etc.

If you are not experienced with synth programming, it is sometimes easier to ignore the huge array of options available in an Ensoniq instrument and concentrate on a more limited palate. The attached patch sheet outlines two separate sounds, the first of which is a simple monophonic, dual oscillator into resonant filter set-up. In this case the regular low pass filters of the TS are wide open and filtering is being handled through the effects section. You can create variations of the tone by adjusting the settings of the filter on the fourth click of the Program Effects pages. FC and BW adjust the cutoff frequency and the strength of the resonant peak respectively. The ENV AMT setting adjusts the contribution of the filter envelope and will affect the attack. Lower the LEVEL amount if distortion becomes evident. The filter envelope controls are found on the fifth click of the Effects pages and are much simpler to manage than the main envelopes. All of these controls are interactive and with a little experimentation, you will quickly be able to derive a number of your own versions of this sound. The OX Voice Select brings in a marimba wave which adds a more distinct attack.

The second part of the patch uses waves 4,5 and 6 from the XO Voice Select and provides a different sound by using plucked waves transposed down to emulate the resonance effect. This sound would also be useful if your effects are busy elsewhere. The patch can be adapted to other synths by substituting other suitable plucked waveforms. Raising the Cutoff amount or the Env2 amount on the filter page of one or more of these waves will give different characters to the mix. Wave 5 has a low setting for both Sample Start and ENV2 Attack to eliminate the initial click but these values can be zeroed for another variation. Try this patch in the higher registers for various techno type "bleeping" sounds.

TS-10/12 Patch

TS-10/12 Prog: TECKBASS

By: Gerry Wasyliv

Notes & Special Settings: See Article.

WAVES	1	2	3	4	5	6
Wave	Sawwave1	Sawwave1	Marimba	Squarewv	Shamisen	Techstring
Wave Class	Waveform	Waveform	TunedPerc	Waveform	StringSnd	StringSnd
Delay	0	0	0	0	0	0
Shift	0	0	0	0	0	0
Direction	Forward	Forward	Forward	Forward	Forward	Forward
Modamt	-	-	-	-	-	-
Sample Start	00	00	00	00	02	00
Start Modsrc	-	-	-	-	-	-
Modamt	-	-	-	-	-	-

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	0	0	-1	0
Semitone	0	0	0	0	0	0
Fine	+07	-07	00	0	+05	-05
Glidemode	Trigger	Trigger	Trigger	Trigger	Trigger	Trigger
Glidetime	0	0	0	0	0	0

PITCH MODS	1	2	3	4	5	6
Modsrc	Off	Off	Off	Off	Off	Off
Modamt	-	-	-	-	-	-
Bend	-	-	-	-	-	-
PitchTbl	-	-	-	-	-	-
Env1	-	-	-	00	00	00
LFO	+30	+30	00	00	+20	+45

FILTER 1	1	2	3	4	5	6
Mode	LP/3	LP/3	LP/3	LP/3	LP/3	LP/3
Cutoff	127	127	050	038	040	041
Kbd	00	00	00	+26	00	-53
Modsrc	Off	Off	Off	Veloc	Off	Off
Modamt	00	00	00	+05	00	00
Env2	00	00	+53	+21	+50	+52

FILTER 2	1	2	3	4	5	6
Mode	HP/1	HP/1	HP/1	HP/1	LP/1	LP/1
Cutoff	020	020	070	020	064	045
Kbd	00	00	00	00	00	-70
Modsrc	Veloc	Veloc	Veloc	Veloc	Wheel	Env1
Modamt	-10	-10	-10	-10	+22	+50
Env2	-10	-10	-10	-10	+13	00

OUTPUT	1	2	3	4	5	6
Kbd Scale	00	00	00	00	00	00
Lo/Hi Key	-	-	-	-	-	-
Vol (db)	-04	-04	-05	-01	-01	-01
Modsrc	Keybd	Keybd	Keybd	Keybd	Keybd	Keybd
Modamt	-20	-20	-20	-19	-75	+10
Dest Bus	FX1	FX1	Dry	Dry	Dry	Dry
Pan	-64	-64	00	00	00	00
Modsrc	Off	Off	Off	Off	Off	Off
Modamt	-	-	-	-	-	-
Voice Prior	-	-	-	-	-	-
Vel-Window	-	-	-	-	-	-
Lo	-	-	-	-	-	-
Hi	-	-	-	-	-	-

LFO	1	2	3	4	5	6
Rate	80	80	N/A	N/A	80	80
Modsrc	Off	Off	-	-	Off	Off
Modamt	00	00	-	-	00	00
Depth	00	00	-	-	00	00
Modsrc	WL+PR	WL+PR	-	-	WL+PR	WL+PR
Modamt	+60	+60	-	-	+60	+60
Waveshape	Triangle	Triangle	-	-	Triangle	Triangle
Restr Mode	On	On	-	-	On	On
Phase	00	00	-	-	00	00
Delay	00	00	-	-	00	00
Noise Rate	-	-	-	-	-	-

SELECT VOICE

00	1	2				
0*	1	2	3			
*0				4	5	6
**						

ENV1

	1	2	3	4	5	6
Attack	-	-	-	-	-	00
Decay	-	-	-	-	-	09
Decay 2	-	-	-	-	-	05
Decay 3	-	-	-	-	-	15
Release	-	-	-	-	-	22
Peak	-	-	-	-	-	99
Break 1	-	-	-	-	-	99
Break 2	-	-	-	-	-	67
Sustain	-	-	-	-	-	00
Vel-Level	-	-	-	-	-	00
Mode	-	-	-	-	-	Norm
Vel Curve	-	-	-	-	-	Linear
Kbd Track	-	-	-	-	-	00
Vel-Attack	-	-	-	-	-	00
Vel-Rels	-	-	-	-	-	00

ENV2

	1	2	3	4	5	6
Attack	-	-	00	00	01	00
Decay	-	-	00	05	02	10
Decay 2	-	-	10	10	03	17
Decay 3	-	-	10	10	21	18
Release	-	-	25	25	30	27
Peak	-	-	99	99	99	99
Break 1	-	-	99	99	99	90
Break 2	-	-	70	70	85	75
Sustain	-	-	00	00	00	00
Vel-Level	-	-	13	13	20	12
Mode	-	-	Norm	Norm	Norm	Norm
Vel Curve	-	-	Linear	Linear	Cncv2	Linear
Kbd Track	-	-	00	00	00	00
Vel-Attack	-	-	00	00	00	00
Vel-Rels	-	-	00	00	00	00

ENV3

	1	2	3	4	5	6
Attack	00	00	00	00	00	00
Decay	05	05	00	08	05	13
Decay 2	12	12	05	12	22	15
Decay 3	60	60	40	60	22	45
Release	25	25	20	00	30	30
Peak	99	99	99	99	99	99
Break 1	99	99	99	99	99	99
Break 2	90	90	90	90	75	99
Sustain	00	00	00	00	00	00
Vel-Level	20	20	20	20	20	16
Mode	Norm	Norm	Norm	Norm	Norm	Norm
Vel Curve	Cncv2	Cncv2	Cncv1	Cncv2	Linear	Cncv2
Kbd Track	00	00	00	00	00	00
Vel-Attack	00	00	00	00	00	00
Vel-Rels	00	00	00	00	00	00

PGM CONTROL (Page 1)

Type	-
Option	None
Press	-
Patch	-
Restrike	00

EFFECTS

Effect #	07
Env Vcf + Chorous + Rev	
A-B	00
Fc	078
Level	95
Pan	00
Bw	50
Env Amt	4
Kbd Amt	0
Attack	50 usec
Decay	100 ms
Sustain	02
Release	60 ms
Trig	Multi
Modsrc	Off

PGM CONTROL (Pages 2 & 3)

Atck	00	V1	00
Rels	00	V2	00
Bright	00	V3	00
Timbre	00	V4	00
Rate	00	V5	00
XCtrl	00	V6	00

The final sauce that always goes good on a bass sound is a little equalization. If you can dedicate one output to the sound and send it to a mixer channel with EQ, you can create far more clarity and punch. A low control which acts around 50 to 100 Hz will bring out the bottom and if you have a sweep mid, cutting a bit at 200 to 250 Hz will reduce the muddiness that sometimes blurs the mid range. Boosting around 800 to 1000 Hz or with a high control will bring out the attack and add definition. It's best to listen to the sound in the context of the mix and judge the effect of each EQ

range until the bass sits well with the other sounds. Delay or reverb are not usually used on bass as this tends to cloud the mix. If the bass sound needs to be pushed back in the mix, you may want to try boosting the mids and lowering the volume. ■

Bio: Garry Wasyliw works as a structural engineer who spends his spare time pushing the buttons on his Ensoniq synth in search of the lost chord. He found it once but the sequencer was not in record mode — so it's lost again.

Tune Your Bass with a DP/4!

Tom Tracy

Imagine what it would be like if you could create a preset in your DP/4 that could be used to tune your four-string bass. I know what you're thinking — how can this be done? The DP/4+ has a 2-Unit Guitar Tuner algorithm, but not the DP/4! Let's be a little creative here.

Although the DP/4 does not have a tuning algorithm, it does have a Sine/Noise Generator, and that's the key. Think about it. Your bass has four strings. The DP/4 has 4 Units (A, B, C, and D). If each string were "connected" to a unit, you could use a Sine/Noise Generator in each unit, and set the appropriate frequency as a tone for tuning each string. Unit A will be used to tune the E string on the bass, Unit B would be used for the A string, Unit C for the D string, and Unit D for the G string.

Set the Config

We will make the Bass Tuner a Config Preset. Sure this could be saved as a 4 Unit Preset, but the benefit of saving this as a Config Preset is that a Config preset will remember the bypass/unbypass status of each unit. If all four sine/noise generator frequencies are ringing out (unbypassed), it would sound worse than a Spinal Tap concert. To Set the Config:

1. Press Edit, then Config.
2. Press the Left Arrow button until the red LED display shows "00."
3. Move the Data Entry Slider until the LCD displays "1 Source Config."
4. Press the Right Arrow button once, and set this to "AB — CD Routing=AB + CD parallel."

5. Press the Right Arrow button again, and set this to "AB Unit Routing=[A+B] parallel."
6. Press the Right Arrow button again, and set this to "CD Unit Routing=[C+D] parallel." We've just made parallel connections between all units.
7. Press the Right Arrow button three times, and set this to "AB Input Select=(1) Mono." If you have a cool expensive stereo bass, set this to "AB Input Select=(1,2) Stereo."
8. Press the Right Arrow button once, and set the remaining four parameters to (b)ypass (k)ill A=k B=k C=k D=k."
9. If all four red unit LEDs are not lit, press the Config button until they are.

Set the Algorithm Parameters

1. While in Edit mode (the Edit LED should still be lit), press the Unit A button.
2. Press the Left Arrow button until the red LED display shows "00."
3. Move the Data Entry Slider to select preset #90 "Signal Generator."
4. Using the Data Entry Controls set the remaining parameters to:

Mix=30	Volume=99
Sine/Noise Gen	Sine Freq=165 Hz
Sine/Noise Gen	Balance=00
Noise Filter LowPass	Fc=16 K
Bass Fc= 200 Hz	EQ Gain=+00 dB

Treble Fc= 05KHz EQ Gain=+00 dB
EQ Input Level Trim=+00
All Modulation parameters=Off

We've just set the parameters in Unit A to tune the E string on the bass.

Use the Copy Feature

This feature (explained so elegantly in the Storage Section of the *Musician's Manual*) will save time in copying the algorithm and parameter settings in Unit A to the other units.

1. While in Edit mode (the Edit LED should still be lit), press the Write button.
2. Press the Unit A button. The top line shows "Write to 1U Pset."
3. While holding the Unit A button, press the Unit B button.
4. Turn the Data Entry Knob clockwise until the display shows "Hit <WRITE> To Copy Unit A to B."
5. Press Write.

Repeat the above steps, copying Unit A to Unit C and D. Now the Sine/Noise Gen algorithm is in all four units.

Setting the Frequencies

We've just copied the algorithm and parameter settings in Unit A to Units B, C, and D. Now all of the units are set to tune the E string. That's not what we want. The frequency needs to be set for each unit to match the appropriate string. Based on a tuning reference of A=440 Hz using an equal-temperament pitch table, set the Sine Frequency parameter (parameter 03) for each unit as follows:

Unit A (the E string) - Sine/Noise Gen Sine Freq=165 Hz
Unit B (the A string) - Sine/Noise Gen Sine Freq=220 Hz
Unit C (the D string) - Sine/Noise Gen Sine Freq=294 Hz
Unit D (the G string) - Sine/Noise Gen Sine Freq=392 Hz

Note: Sine values are rounded off to the closest number. Absolute values are E=164.81; A=220.00; D=293.67; G=392.00. Sine values are also one octave higher than true pitch, making it easier to hear the tone.

Save Your Config Preset

1. While in Edit mode (the Edit LED should still be lit), press the Config button.
2. If all four red unit LEDs are not lit, press the Config button until they are. You shouldn't hear any tones.

3. Press Write. The top line of the LCD display shows "Write to Config." This is what we want.
4. Use the Data Entry Knob to find a Config location to copy you Bass Tuner into.
5. Press Write again. Now using the Arrow buttons and the Data Entry Knob, name your preset something like "Bass Tone Tuner."
6. Press Write one more time to complete the process.

How to Use the Bass Tone Tuner

Now that you've finished making it, let's use it.

1. Connect the DP/4 to an audio source, and your bass to Input 1 (or 1 and 2, see earlier comment).
2. Press Select, then Config, and locate your Bass Tone Tuner preset.
3. Press Select again to select it. (Makes sense, huh?)
4. Press the Unit A button twice. This is the E tone. Match it with your bass.
5. Press the Unit A button again to bypass it (red LED lit).
6. Press the Unit B button twice. This is the A tone. Match it with your bass.
7. Press the Unit B button again to bypass it (red LED lit).
8. Press the Unit C button twice. This is the D tone. Match it with your bass.
9. Press the Unit C button again to bypass it (red LED lit).
10. Press the Unit D button twice. This is the G tone. Match it with your bass.
11. Press the Unit D button again to bypass it (red LED lit).

You have just successfully used the DP/4 as a bass tuner! Variations of this can be used for different pitches and different instruments. You might want to unby-pass any two consecutive units as a "tone drone" for your next musical composition. The possibilities are endless. Much thanks goes to Dave Cook, a fine bass player in the Reading PA area, for coming up with the "Bass Tuner" idea. ■

Bio: Tom Tracy is an Ensoniq corporate citizen and writes documents like Sound Manuals, Musician's Manuals, and an illustrious bevy of things that nobody reads.

Technical Support Q&A:

Synchronizing Your Ensoniq Keyboard to External Clocks

Anthony Ferrara

There seems to be plenty of confusion when synchronizing the sequencer found on board an Ensoniq synth or sampler to an external MIDI clock source. These clocks can be generated by devices such as computer-based sequencers, analog or digital multi-track tape recorders, and various interface models designed specifically to generate MIDI clocks or various timecodes for purposes of synchronization.

I've written this guide to define the most misunderstood terms that you're likely to come across in various product manuals. I also want to provide a clear understanding of the capabilities and requirements in performing such a task.

The relationship between the external clock and the Ensoniq sequencer is active to passive, respectively. It is much easier to sync the sequencer onboard your Ensoniq workstation to a multi-track deck than vice-versa, due to the relatively slow and inaccurate response of the average tape transport mechanism. On the other hand, a computer-based sequencer should be able to sync up to the Ensoniq MIDI clocks without any problem at all.

The issue is actually very simple from our end: The sequencers built into Ensoniq samplers and synths (and almost all keyboard-based sequencers on the market) are designed to send and receive MIDI clocks with Song Position Pointer. They do not respond directly to other codes such as Frequency Shift Keying (FSK), MIDI Tape Sync, MIDI Time Code, or SMPTE.

The MIDI clock sent over MIDI cables to the passive sequencer tells the receiving unit specific information about measures, beats, and clocks per beat - also known as pulses per quarter note (PPQ). The lone exception to this is the sequencer found in the Mirage keyboard and rack-mount, which sends and responds to MIDI clocks only, without Song Position Pointer.

Some multi-track decks have tape sync capabilities built in, while others require the use of an optional proprietary or third-party synchronization unit; a variety of models are currently available on the market. To find out about the settings and requirements for those units during specific synchronization contexts, refer to the technical manual included with the deck or sync box. To find out about setting

the sequencer on your particular Ensoniq workstation to follow an external MIDI clock source, check below.

Setting the Ensoniq Sequencer to External MIDI Clocks

Mirage DSK-8/DMS/DSK-1: Parameter 85 must be set to ON to sync the Mirage internal sequencer to an external MIDI clock source. The Mirage is not able to chase-lock to random points in the song, since it does not respond to Song Position Pointer. This means that you cannot start the Mirage's sequencer from a random point in the sequence and expect it to be in sync with an external clock source. It will start from the beginning, rather than chase-locking to a selected location.

ESQ-1/SQ-80: On the Control Page, set SYNC=MIDI CLOCK. The other option is to choose TAPE SYNC as the clock source, which is received via the rear panel Tape In jack. Both models contain their own tape sync generator, which can drive another device by connecting the TAPE OUT and TAPE IN jacks to the respective jacks on a tape recorder. For more step by step details on this operation, consult the ESQ-1 and SQ-80 manuals.

VFX-SD/SD-1 32 VOICE: The internal clock source must be set to MIDI on the Sequencer Control page; changing this parameter from INTERNAL to MIDI will also cause the TEMPO setting to switch to EXT.

SQ/KS-32 Series: Once a particular sequence or song is selected, hit the Edit Seq/Presets button, followed by the Bank One control button, then the Screen Two button. From there, the screen will say CLOCK=INTERNAL. Now use your Up Arrow button to change this setting to MIDI.

TS Series: In the first page under the Sequencer Control button, set CLOCK= MIDI. As with the VFX-SD/SD-1 32 VOICE series, this change will also make the TEMPO setting to switch to EXT.

EPS, EPS-16 PLUS and ASR Series: Scroll to the CLOCK SOURCE parameter on the Edit/Seq page and change CLOCK SOURCE= to MIDI. Special ASR-10 Note: when using DiskTracks with the ASR-10, the ASR must without exception be the master clock to allow the tracks to spool

off the hard drive accurately. If you attempt to change this setting to MIDI, you will get a message saying NO SCSI ATRK MIDI SYNC.

KT-76/88: Press the Edit Seq/Preset button; then hit the Upper 1 followed by the Lower 2 button to get to the page that says: CLOCK = INTERNAL. Change the sequencer clock source to MIDI.

With this information in mind, you should now be able to



get your on-board sequencer to play follow-the-leader with an external MIDI clock source minus the usual trial and error. See you next time with yet more problems and lightening-quick solutions. ■

Bio: Anthony Ferrara has written for Electronic Musician, Recording, and Keyboard magazines.

It Pays to P(I)an Ahead

Or — Programming Sounds for Sequence Interaction

Dan Rohde

Those of you who use your onboard sequencers for public (or basement) performances may have acquired the habit of using all your Sounds "as is" from the factory. Even though stock sounds are great, you may be surprised what a big difference personal programming can make to your accompaniment sequences.

These instructions refer to the KS-32, but many other Ensoniq sequencers offer similar capabilities.

Let's suppose you often use a piano patch as the live track during your performances. To better meet your performing needs, we'll adjust its EQ (filters), limit its volume sensitivity to velocity, and make it a stereo piano. Finally, we'll reassign its effect busses to give the sequence you use it in two different levels of reverb.

The KS Grand Piano (ROM 00) is a good place to start. Push the Edit Sound button and solo Voice 1, 16 Bit Grand Piano-Low (see patch 1). To lower its treble quality, you can adjust the FC1 and FC2 cutoffs under the Filters bank to reduce its high frequency. You can choose Timbre (and its Modsource and Modamount) to give you real-time control over its EQ. Note that Timbre is only enabled when it's routed to a track of a preset or sequence. By the way, you usually won't want to designate Modpedal as a real time modulator for a sound to be used in a sequence since performing a Sound live usually requires the volume pedal to be used as a volume controller.

Next, let's assume that the volume of this Voice is a little too sensitive to velocity. In other words, your notes inadvertently struck too hard may sound too loud, especially for quiet background music. Under the Amp bank, lower the Velocity Level to 06. This will limit the degree your

volume can vary. You can also make the volume taper off toward the bottom of the keyboard by adjusting the KBD Scale to +15. Route the Output bus to FX1, which will be the lower of two levels. To create a stereo effect, set Pan to -28, which moves the sound toward the left.

For the Effects bank, let's keep Hall Reverb, but reassign the busses to FX1=10 and FX2=30. For Modsource select Wheel +25 to modulate the FX2-Mix, which will give us a couple options. When used as the effect for a sequence routed to Voice under Track Output, our piano patch will have its Voices routed to FX1, its lower reverb value. However, when its track is routed to FX2, the wetter value, the wheel will increase the effect even more, giving us a wide variety of reverb setting options.

Here we should review the versatility of the KS-32's system of FX routing. By designating Voice under a track's Output bank, you choose to use the individual FX routings of each of the sound's three voices. That is, if one voice is set to FX1 and the others are set to FX2 and Dry, then these voices will use whatever FX values have been assigned to the effect for that sequence. By designating Control, FX1, FX2, or Dry, you override the sound's individual voice routings.

Now let's adjust Voice 2 in our piano patch the same ways we adjusted voice 1. Set the Filters bank Modsource to Timbre (+10) and lower the Velocity Level to 13 under the Amp bank. Under Output lower the KBD Scale to +10. Finally, set the Pan to +28 to complete the stereo effect.

Voice 3, which is Off in the KS Grand Piano, should be set to On. A little thud across the entire key range improves the simulation of authentic piano. However, a little goes a long

	-28	-14	Pan 0	+14	+28
Hall	Tenor	Low		Guitar	Trombone
Reverb	Sax	Strings			
FX2=30	French	Organ		Voice	Vibes
	Horn				
		Harp			
FX1=10	Alto Sax	Fretless		Muted	High
		Bass		Trumpet	Strings
	Clarinet	Trumpet		Flute	Oboe
				Sop. Sax	
		Low		High	
		Piano		Piano	
Audience					

way so you may want to lower its volume under Output.

So far we've tweaked one program, the piano patch, whose two FX levels (10 and 30) will be available for all the other tracks in its sequence.

Before we design another program, let's consider how many different instruments (Voices) we can put on the remaining seven tracks of this sequence. If we use the piano patch on one track, and put a drum kit on a second track, we have six tracks left. Six tracks times three voices each equals 18 instruments, which might be more than you need for background accompaniment. I've found three-instrument programs very useful and only wish I'd started using them earlier. Wherever you're playing, it's very convenient to have so many instruments accessible in one sequence — without the hassle of loading numerous sequences that require a Song to string them together.

You may even want to p(l)an ahead for all your instruments' Pan values and FX routings. Go for a balance of low and high on each side of the stereo field. (See chart, left.)

So, next let's create a Sound that uses each of its three Voices for a different instrument. I've chosen fretless bass,



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Prog: PIANO

By: Dan Rohde

Notes: Stereo; timbre modulates filters, modwheel modulates FX2-Mix.

WAVE	1	2	3
Select Voice	On	On	On
Wave Class	16BitPiano	16BitPiano	16BitPiano
Wave	Lo	Hi	Thud
Delay Time	0	0	0
Wave Direction	Forward	Forward	Forward
Start Index	38	13	0
MODSCR	Vel	Vel	Vel
MODAMT	-42	-26	0
Restrk Decay	20	20	20

LFO	1	2	3
LFO Speed			
Noise Rate			
Level			
Delay			
MODSRC			
Wave			
Restart			

AMP	1	2	3
Initial	99	98	99
Peak	99	99	99
Break	96	99	99
Sustain	00	00	99
Attack	00	03	99
Decay 1	30	41	99
Decay 2	84	86	99
Release	35	35	99
Vel-Level	13	13	13
Vel-Attack	19	19	13
Vel Curve	Linear	Linear	Linear
Mode	Norm	Norm	Fin
KBD Track	0	0	0

PITCH	1	2	3
Octave	0	0	0
Semitone	0	0	0
Fine	0	0	0
ENV1	0	0	0
LFO	0	0	0
MODSCR	-	-	Noise2
MODAMT	-	-	+12
KBD Pch Track	On	On	Off
Glide	Off	Off	Retrigger
Glide Time	0	0	0

FILTER	1	2	3
Filter 1	3Lo	3Lo	3Lo
Filter 2	1Lo	1Lo	1Lo
FC1 Cutoff	50	50	69
ENV 2	+40	+40	+41
FC1 KBD	+05	+05	0
MODSCR	Timbre	Timbre	-
MODAMT	+10	+10	-
FC2 Cutoff	75	75	127
ENV2	-05	-05	0
FC2 KBD	+05	-15	0
FC1MOD-FC2	On	On	On

OUTPUT	1	2	3
VOL	95	99	25
Boost	Off	Off	Off
MODSRC	-	-	-
MODAMT	-	-	-
KBD Scale	+15	+10	+15
Key Range	A0-D3	D#3-G7	E1-G7
Output Bus	FX1	FX1	FX1
Priority	Med	Med	Med
Pan	-28	+28	+28
Vel window	0	0	0

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

ENV2	1	2	3
Initial	99	99	99
Peak	99	99	99
Break	38	50	99
Sustain	00	00	99
Attack	00	00	20
Decay 1	46	48	48
Decay 2	65	65	00
Release	99	99	50
Vel-Level	53	66	66
Vel-Attack	06	6	0
Vel Curve	Convex	Convex	Concave
Mode	Norm	Norm	Norm
KBD Track	0	+14	0

EFFECTS - HALL REVERB	1	2	3
FX-1	10	FX-2	36
Decay Time	50	Diffusion	80
Detune Rate	10	Detune Depth	10
HF Damping	50		
HF Bandwidth	53		
LF Decay	+15		
MOD (Dest)	FX2-Mix		
BY (MODSRC)	Wheel		
MODAMT	+25		

Prog: BASS/VIBES/SAX

By: Dan Rohde

Notes: Timbre modulates bass and sax filters; wheel modulates FX2-Mix on bass and sax.

WAVE	1	2	3
Select Voice	On	On	On
Wave Class	Expansion	Expansion	Brass
Wave	FrBass	Vibes	Sax
Delay Time	0	0	0
Wave Direction	Forward	Forward	Forward
Start Index	5	25	0
MODSCR	Vel	Vel	-
MODAMT	-7	-15	-
Restrk Decay	43	43	43

LFO	1	2	3
LFO Speed	-	29	27
Noise Rate	-	26	40
Level	-	5	04
Delay	-	6	13
MODSRC	-	-	-
Wave	-	Sine/Tri	Sine
Restart	-	On	On

AMP	1	2	3
Initial	99	94	99
Peak	99	99	99
Break	75	70	44
Sustain	60	0	90
Attack	99	23	12
Decay 1	50	67	20
Decay 2	70	73	37
Release	34	38	11
Vel-Level	46	26	13
Vel-Attack	13	33	13
Vel Curve	Quikrise	Linear	Quikrise
Mode	Norm	Norm	Norm
KBD Track	0	0	0

PITCH	1	2	3
Octave	+1	0	-3
Semitone	0	0	0
Fine	0	0	0
ENV1	0	0	+1
LFO	0	0	+02
MODSCR	-	-	-
MODAMT	-	-	-
KBD Pch Track	On	On	On
Glide	Off	Off	Off
Glide Time	0	0	0

FILTER	1	2	3
Filter 1	3Lo	3Lo	3Lo
Filter 2	1Hi	1Hi	1Hi
FC1 Cutoff	50	50	60
ENV 2	+50	+20	+5
FC1 KBD	+25	-10	+10
MODSCR	Timbre	-	Timbre
MODAMT	-35	-	+15
FC2 Cutoff	0	64	0
ENV2	0	+40	-30
FC2 KBD	0	-25	00
FC1MOD-FC2	On	On	On

OUTPUT	1	2	3
VOL	50	50	45
Boost	On	On	Off
MODSRC	-	LFO	LFO
MODAMT	-	+8	+02
KBD Scale	Zone	Zone	Zone
Key Range	E1-E3	F3-B5	C6-G7
Output Bus	FX1	FX2	FX1
Priority	Med	Med	Med
Pan	-14	+28	+28
Vel window	0	0	0

ENV1	1	2	3
Initial	-	-	32
Peak	-	-	99
Break	-	-	54
Sustain	-	-	99
Attack	-	-	17
Decay 1	-	-	22
Decay 2	-	-	80
Release	-	-	16
Vel-Level	-	-	13
Vel-Attack	-	-	13
Vel Curve	-	-	Quikrise
Mode	-	-	Norm
KBD Track	-	-	+28

ENV2	1	2	3
Initial	00	99	32
Peak	99	73	99
Break	75	36	54
Sustain	0	0	99
Attack	0	17	17
Decay 1	50	45	22
Decay 2	70	64	80
Release	07	50	16
Vel-Level	40	66	19
Vel-Attack	0	0	6
Vel Curve	Convex	Quikrise	Quikrise
Mode	Norm	Norm	Norm
KBD Track	0	0	0

EFFECTS - HALL REVERB	1	2	3
FX-1	10	FX-2	30
Decay Time	80	Diffusion	80
Detune Rate	10	Detune Depth	10
HF Damping	53		
HF Bandwidth	53		
LF Decay	+15		
MOD (Dest)	FX2-Mix		
BY (MODSRC)	Wheel		
MODAMT	+25		

vibes, and sax because I seem to use them in most of my sequences.

Fretless Bass	Vibes	Tenor Sax
Voice 1	Voice 2	Voice 3
Key Range A0-E3	F3-B5	C6-G7
Pan -14	Pan +28	Pan -28
FX1	FX2	FX1
Timbre Filters	LFO Tremelo	LFO Pitch
Hall Reverb FX1=10, FX2=30, Wheel -> FX2-Mix +25		

Of course, other instruments can also be simulated by using only one (or two) of a program's three Voices. Before fiddling with all the numbers, you may want to copy the parameters from the existing Sounds if you don't trust yourself creating them from scratch.

Start by selecting Fretless Bass (RAM 10) and changing the Octave value in the Pitch bank to -1 (Patch 2). Under Output bank lower the Volume to your usual performance level. This will save you the trouble of setting the Track Volume later. Adjusting volume at the Voice level will enable you to use Record=Add later without needing to use the volume pedal as you overdub the other two instruments onto this track. You then need to set the keyboard scale to Zone and Keyboard range to E1-E3. You could further customize this instrument by disabling the modwheel from the LFO to eliminate the vibrato. Set its Output Bus to FX1, which will later route fretless bass to the piano patch's FX1 value of Hall Reverb 10. Finally, set the Pan to -14 to move it a little off center.

Next we can adjust voice two in this multi-instrument Sound. Select the Vibes wave and change the pitch to Oct+1. You might disable the modwheel in this voice and adjust the LFO bank to provide a constant vibrato. Under the Output bank adjust the Volume to the approximate level you expect to use in your future sequences. Set Keyboard Scale to Zone and Key Range to F2-F4. Route the Output bus to FX2 since a little more reverb might sound good with vibes. Finally, let's Pan this voice +28, or however far right you want it in the stereo field.

For Voice three let's choose the Saxophone wave under the Brass class. Set the appropriate Modsources and Volume value. Set the FX1 to the lesser reverb value. Finally, let's Pan this voice -28, where it will locate automatically unless rerouted with a different Track bus setting.

Recording three instruments on one Track using Record=Add can be a little trickier than just one. However, you can be very selective in erasing Track data by setting Erase Track to the specific measures and key range you want to delete. Another way is to record each instrument on a separate Track and then merge data from the second Track to the first.

If you prefer wider key ranges for your instruments, you may wish to use only two per program. Since I often need only an occasional embellishment from an instrument to add a sense of variety to an accompaniment sequence, limited key ranges work fine for me.

You may also want to create your own drum kit programmed so that only one track will be necessary for percussion. A kit can use up to 17 drum and percussion sounds, each with its own volume (filter cutoff), pan, and FX settings. Remember that a wetter reverb value tends to spread an instrument out across the stereo field; conversely, a lower setting tends to position the instrument more precisely left or right. (See Drum Kit below.)

As you can see, by planning ahead when you design your Sounds, you can increase the variety of different instruments in a sequence and accomplish some significant FX and Panning results. ■

Wave	Elec. Kick	Brush Snare	Thump Snare	Clsd HiHat	Open HiHat	Ride Cymb	Crash Cymb	Crash Cymb	Room Tomlo
Range	A1G#2	A2A#2	B2D#3	E3F#3	G3A#4	B4D#4	E4F#4	G4G#5	B5D#5
Pan	0	0	0	+56	+56	+84	+42	-56	-42
FX	FX2	FX1	FX2	FX2	FX2	FX1	FX1	FX1	FX1

Wave	Conga Slap	Bongo	Clavs	Open HiHat	Mscns Tape	Shkr	Tamb	SdStk Snare
Range	E5F#5	G5A#6	B6C#6	D6E6	F6G#6	A7C7	D7E7	E#7G7
Pan	+70	-70	+28	+56	+56	+42	-42	-28
FX	FX2	FX1	FX1	FX2	FX1	FX1	FX1	FX2

(Complete parameters upon request.)

Bio: Dan Rohde is a part time musician and high school teacher who lives in Muscatine, Iowa. He hopes someday to balance his classic-motorcycle-repair-person self with his romantic ride-the-wind self. He also hopes to win the Powerball and to see the end to all conflicts in the world.

The EPS-16 PLUS and Background Vocals

Part 2 — Memory reduction

Robby Berman

Hello again. Last time we began our discussion of how to use your EPS-16 PLUS for creating full, professional-sounding background vocals (BGs) in your home recording studio. When we left off, you'd sampled a small slew of harmonies to accompany the lead vocal you'll record on tape a bit further on in the recording process.

If, at this point, you've sung and sampled all the background vocals you need for your song, and you've got all the instruments you need loaded into your 16 PLUS, you're home free already. Pan 'em any way and where you want (see below), put some reverb or some other effect on them (or not) and move on to life's next little task.

If you've got more harmony sections to sample, go ahead and start sampling them. You'll often find you've got more than will simultaneously fit in the 16 PLUS. For now, sample each section and save it to disk. When you've got a section safely filed away on a disk, delete it from the 16 PLUS's memory (while holding down the Instrument/Track button with its yellow LED lit, press NO/CANCEL).

You've got two ways to go. If the time between one vocal section and another is long enough, you can send program changes from your external sequencer to call up and load BG files from disk as you need them.

Realistically though, loading BG files as the song is playing is only a practical option if you have a hard disk drive, as loading from the built-in floppy drive will usually take too long to be of any use. Floppy drive users (like me) will have to take option number two: radically reducing the amount of memory the BGs use in order to have them all available onboard when they're needed. Let's discuss how to cut those memory block counts way down. The following process applies to any non-looped BG samples you've recorded; looped "oohs," "aahs" and "ohs" are as memory-efficient as they're gonna get.

Planning, Panning and Prepping

First, we have to decide how we want our background vocals to be panned in the final stereo mix. Although the EPS-16 PLUS allows us to play them across the stereo spectrum any way we'd like, for memory reduction pur-

poses, we need to group them at just two or three spots in the left/right field, as opposed to fanning them out like a handful of playing cards might be held. The reason for this is that we're going to ping-pong together whichever samples will go in the same place in the left/right picture.

Beyond this consideration, as far as panning goes, we're very much in the realm of personal taste. Unless you've already got a particular sound in mind, you'll have to experiment. I personally like the sound of two BG pairs, each containing one low and one high harmony, panned hard left and right. I'll eventually put just a touch of reverb on them; you can decide about the effects later.

Using my hard-panned pairs as an example, let's proceed. First, make sure you've only got one section of BGs onboard (say, a chorus worth) — what we're gonna do needs some elbow room in RAM to work in. The goal will be to ultimately convert four samples to two, freeing up half the memory used. Let's say I've sampled a low harmony in layer 2 (refer to this as "2") a high one in 3 ("3"), double the low in 4 ("4") and the high in 5 ("5"). Why don't you create a clump of harmonies in this configuration and follow along? We'll want 2 and 3 (one low and one high) panned hard left and 4 and 5 (one low, one high) panned hard right. This'll let us combine 3 into 2, and 5 into 4. Eventually we'll be able to delete 3 and 5 to get back some memory.

Time to do the deed. Press Edit and set LYR to 2. Press Edit, Amp and, quickly, 2 on the numeric keypad. Set PAN to -99. This will put 2 hard left in the stereo field. Repeat the process for 3, and then 4 and 5, panning the last two to the right (+99).

Press Edit and Instrument. Press the left Patch Select button and, while holding it, turn on layer 2 and shut all the others off. Do the same with the right Patch Select and layer 4. Now hold down both Patch Select buttons and turn only layers 2 and 4 on. Later you'll see that these steps will allow you to easily audition the results of your next, no doubt valiant, efforts.

Press Edit again, set the layer field to read "LYR=2, underline the WS field and press the key containing your har-

monies down. Get out a piece of paper and write down the LYR and WS numbers. Change the display to read "LYR= 3," underline the WS field and press your key down again. Write down those numbers. Repeat the procedure for the other two samples.

Over the Top

Press Command, Amp and 2 to get to the MIX WAVESAMPLES page, and press YES/ENTER. The first question you'll be asked is "ARE SAMPLES LAYERED?" to which you'll answer, of course, "YES/ENTER." On the next screen, see to it that you're in the right instrument, that the FR ("From") layer is 3 and the WS number is correct according to the notes you made. If not, set the screen so that is the case. Scroll right and set TO to the same instrument, LYR= to 2 and WS= to the number you wrote down earlier for your layer 2 WS. You can zip right past the next screen; its setting doesn't matter here since both samples have the same root key on the keyboard. Scroll right again. Positive values on this page will make your "to" sample (2) louder than your "from" sample (3), negative values the opposite. A setting, of 0 leaves your samples evenly balanced. Generally, you'll want your lower-pitched harmonies mixed a little louder, as high ones always seem to make themselves heard in a final mix. In this case, let's set it to a +10 value, making 2, the lower harmony, a tad louder than 3. Press YES/ENTER.

Should you press down your key on the keyboard, don't trust your ears yet! What you're hearing is all four samples plus an extra copy of 3. This is why we set up our Patch Selects the way we did. To hear the real results of the MIX WAVESAMPLES process, hold down the left Patch Select button; now you're listening only to your new supersample 2, a combination of itself and sample 3. Either press YES/ENTER or try again.

If there's a new click or thump at the end of the sample, that only means that 3 is a slightly longer sample than 2. Just start the MIX WAVESAMPLES procedure over, making 2 the "from" wave and 3 the "to." Set up the Patch Select buttons so that holding down the left one will leave layer 3 turned on, and holding both buttons down, 3 and 4, so that you can audition your work.

When you've successfully balanced and combined samples 3 and 2, it's time to delete your "from" sample. Press Edit to make sure that the correct sample is selected (in our example, that's 3). Press Command, Wave, 2 and press YES/ENTER. If you're sure you've got the right wavesample, press YES/ENTER and wave bye-bye.

Now go back and repeat this whole process for your other

pair of samples. If you want to use the above as a step-by-step guide, just substitute "4" for "2" and "5" for "3." On the MIX WAVESAMPLES FR and TO pages, you may have to scroll downward to reach the desired layers; why, I don't know. When you're ready to audition your mix, you can hear your new supersample 4 by pressing the right Patch Select button. Toggle back and forth between right and left Patch Select buttons to make sure the two supersamples have the same low harmony/high harmony mix. Hold down both Patch Select buttons to hear your whole set of BGs (supersamples 2 and 4) together.

Once you've got your samples combined, you may want to re-normalize and re-truncate supersamples 2 and 4. Normalizing can't hurt; listen to them to see if there's any extra schmutz on the ends that needs to be truncated.

Save what you've done to disk, but don't use the disks you saved your raw samples to. Getting the right mix of your harmonies can be a little tricky. Sometimes when you hear your BG mix in context with all your other instruments, you'll decide it could be better. You may well need to redo the MIX/DELETE WAVESAMPLES procedure. Leave yourself the opportunity. Only when your song is history (recorded and mixed) should you consider losing your original samples, and not even then if you have the storage capacity to spare. It's not uncommon to change one's mind later on.

Up to now, we've been discussing what to do with a single section of background vocals. Now that it's been safely stowed on a disk, repeat this procedure for each section of your song's BGs. After all your segments have been mixed and cut down to size, load 'em all back in to the '16 PLUS, and then save them as one big clump. I also recommend keeping, these single-segment disks intact until you're sure you're happy with all the results.

You've now reduced however many background vocal samples you've recorded for each section into merely as many positions in the stereo field as you need. You could reduce a dozen samples down to only two, left and right. This way you can fit a whole song's worth of samples on board at once. And the beauty of it is that you're doing all this submixing completely in the digital domain with no discernible fidelity loss!

Contingencies

If you find that all your sections won't fit in the 16 PLUS after all, there are two things to do. You can cut your memory use in half by mixing everything down to mono (one supersample) instead of stereo (two). We'll discuss how to simulate stereo with mono samples next time.

Your other option is to lower the sample rates of your wavesamples, which will cause them to use less memory. Since the lower the sampling rate, the lower the fidelity, you'll have to do a little research to find the lowest bearable rate.

Press Edit and select a sample. Turn off all the other layers (press Edit and Instrument) so you can hear clearly what you're doing to your poor BGs. Then press Command, Wave and scroll to CONVERT SAMPLE RATE. Press YES/ENTER. The display will default to the sample rate you last sampled at. Lower the rate (by pressing the up arrow button, ironically) by one step, press YES/ENTER and use the KEEP NEW/OLD audition function to see if the audio quality has deteriorated beyond acceptability. Press NO/CANCEL to keep the old sampling rate. Repeat this process until the fidelity of your sample is no longer tolerable; then back the sampling rate up one degree and press YES/ENTER. A too-low sampling rate will put your stunning vocals right into the toilet. Samples have to be converted one by one, by the way.

Next: tips on manipulating and sequencing your background vocals. ■

Bio: Robby Berman is a musician living with his wife and five cats in the inexplicably fuzzy Hudson Valley of New York. His latest album is "Rings and Rings."



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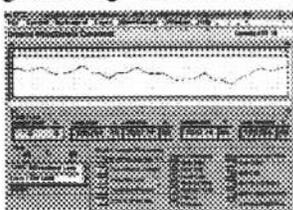
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The Adventures of Kaptain KS

Kaptain KS

In today's thrilling episode, Kaptain KS takes time out from fighting his arch-enemy, HerniaMan, to answer a few questions from the kids at home...

Q: Dear Kaptain KS, I have a spare footswitch that I'd like to use with my KS-32 to start and stop the sequencer. The trouble is, there's only one footswitch jack on the back panel. What do I do?

A: Having two footswitches can be very convenient. If you press the System/MIDI button, then press screen 2, you'll see that the left footswitch can be assigned to act as a sostenuto pedal, or either side can act as a start/stop pedal for the sequencer.

What Ensoniq might prefer for you to do is buy their optional SW-5/SW-10 footswitch, which has two pedals and only one cord. But since you already have an extra pedal, I'd advise you to march on down to your nearest Radio Shack and ask for catalog item number 274-302. That's a standard 2-into-1, quarter-inch stereo headphone adapter. Plug this gizmo into your footswitch input, and plug your two footswitches into the gizmo. Now pull whichever plug goes to your "left" footswitch slightly out of the gizmo, but not so far that it falls out. It should "catch" halfway out. It's not very elegant, but it works, and it only costs around five bucks.

Keep in mind that your spare footswitch must be the kind that is "normally open," that is, the circuit is completed when you step on it. Also, if you're handy with a soldering iron, you can make your own custom cable by splitting a stereo plug into two mono jacks.

Q: Oh Kaptain, my Kaptain! My band does a new age version of "All Along the Watchtower" in the key of D minor (the saddest of all keys). I'm using the factory "Lush Grand" patch for this. In the middle of the song I play some upper octave noodles, and at the end of the song, I'm supposed to hit a low D note. Unfortunately I've run out of keys! Do I have to use two different patches, such as one normal patch and one set up to play an octave lower?

A: What Ensoniq might prefer for you to do is buy their optional "KT-88," which has the extra keys you need. But we don't need to get that drastic if you don't normally use the lowest note on the keyboard (E) during the song. Just

set up a seq/preset with two tracks in it, both set to the patch you're using. Now limit the key range of track 1 to "F1 — C8" and limit the range of track 2 to "A0 — E1." Transpose track 2 down by 2 half steps (the last setting should read -02). Now layer them on top of each other by double-clicking.

Now your keyboard is in "drop D" tuning. It will play normally, except for the very lowest note, which will be D, not E. A quicker, but more dexterous approach would be to simply pull down on the pitch wheel for that last note, and play everything in E minor, provided, of course, that your pitch wheel amount is set to +02 or +02H.

Q: Dear Mr. KS, isn't it amazing the lengths some writers will go to, to make a short article somewhat more interesting?

A: It certainly is.

Thus concludes the thrilling adventures of Kaptain KS! For more thrills and chills, tune in tomorrow: same SMPTE time, same MIDI channel! ■

Bio: Kaptain KS disguises himself as mild-mannered Nashville musician, Jeff Jetton. If you have a question or comment for either of them, send e-mail to jeffjetton@aol.com. For the kids out there who sent in for their secret decoder ring, today's secret message is: "Cf tvsf up esjol zpvs Pwbmujo!"

Back Issues

Back issues are \$2.00 each. (Overseas: \$3 each.) Issues 1-40, 61, 67-74, 77, 79 and 82-85 are no longer available. Subscriptions will be extended an equal number of issues for any issues paid for that are not available at the time we receive your order. ESQ-1 coverage started with Issue #13. SQ-80 coverage started with #29, (although most ESQ-1 coverage also applies to the SQ-80). EPS coverage got going with #35 (and also applies to the ASR-10). VFX coverage (which also applies to the SDs) got started in #48. The SQs got going in #63. (SQ articles also apply to the KS-32 & KT-76/88.) DP/4 coverage started in #88 (much of which also applies to the ASR-10). TS-10/12 coverage got going with #98 but owners should also check out sample reviews (EPS/ASR) and SD & VFX programming tips. Permission has been given to photocopy issues that we no longer have available — check the classifieds for people offering them. A free back issue index is available which contains the tables of content for all issues since Number 43.

I've Got That Old Syncing Feeling

Kirk Slinkard

One thing that sets the ESQs and SQ-80 apart from many other polyphonic programmable synths (even other Ensoniq synths) is their ability to do some nifty tricks to the waveforms even before they hit the filters and amplifiers, like with SYNC for example. Whereas some of the better analog synths of the past and present have this feature, the ESQs and SQ-80 have it available not only on the traditional SAWTOOTH, SQUARE, SINE, and on the SQ-80, TRIANGLE waveforms, but also on multifarious (I should get more than 4 cents for that word) other digital waveforms and samples. This article takes up where an article I wrote in Issue 85 leaves off. It was about using the SYNC feature to get pulse waves with variable duty-cycles. This one takes a look at some different applications of SYNC. In other issues of the Hacker, the basics of the SYNC feature have been talked about enough that I won't rehash here.

Personally, I like to think of each SYNC application as being one of these two different types:

Category 1: Where the slave oscillator (#2 for us) is tuned higher in frequency than its master oscillator (#1 for us).

And... *Category 2:* Where the slave oscillator (#2) is tuned lower than its master (#1).

The tuning would include any modulator action from envelopes, LFOs, etc. For those scientific types among you who like mathematical completeness, strictly speaking there is a third category where both oscillators are tuned exactly the same. But this has exactly the same sound whether the SYNC is turned on or off, so I didn't bother with it here.

In the first category, OSCILLATOR 2 might be thought of as imposing a frequency-modulatable waveform onto a square wave from OSCILLATOR 1, sort of like the way a wah-wah can be thought of as imposing a frequency-modulatable sine wave onto whatever instrument is plugged into it. The hard resetting of slave OSCILLATOR 2 at master OSCILLATOR 1's frequency creates some of the characteristics of a square wave, no matter what waveform OSCILLATOR 1 is set to.

In the second category, you end up reducing how much of OSCILLATOR 2's waveform is looped during the wave cycle, anywhere from 100% (when both oscillators are tuned exactly the same) to something approaching 0% (when OSCILLATOR 2 is tuned way lower than OSCILLATOR 1). If you use a moving modulation, like an envelope or LFO, its

sound can be compared to the TRANSWAVES of more recent Ensoniq synths. The specific sound you get from this depends on what waveform you use in OSCILLATOR 2. As a general rule, the waveform of master OSCILLATOR 1 doesn't matter in either category as long as it is turned off at AMPLIFIER 1. Of course, you can turn on OSCILLATOR 1's amplifier to add it to the sound if you want to, but I didn't in any of these demonstration patches so that I could show off the SYNC effect by itself. When SYNC is activated, OSCILLATORS 1 and 2 are always going to be at exactly the same pitch — you can't get any intervals or detuning between them.

The first patch, "LETSGO," was a popular sound in the seventies, and here it is copied from a lead synth patch used in The Cars' hit "Let's Go." This sound was mentioned briefly in the pulse-width modulation article, but here it is shown as a finished patch that's ready to play. It's a classic Category 1 type sound. Here, the ESQ is set up to make its sound in the same way that the original monophonic analog unit did (an Arp, I believe) using a SQUARE wave in slave OSCILLATOR 2 which is swept downward in frequency by ENVELOPE 1 while master OSCILLATOR 1 has stationary pitch settings. As with all Category 1 and Category 2 patches, the tuning of the slave oscillator (#2) relative to its master is what determines the tone or timber, and the master oscillator (#1) determines the actual pitch of both OSCILLATORS 1 and 2. The MOD WHEEL adds a little vibrato. Note that it has to be applied the same to both OSCILLATORS 1 and 2, otherwise it would affect the tone as well as the pitch.

The second patch, "SYNBAS," is another Category 1 type of SYNC effect. With this one, I tried to give OSCILLATOR 2's SAWTOOTH wave a sound comparable to the pulse-width modulation effect used in pulse waves. The MOD WHEEL adds a static SAWTOOTH wave from OSCILLATOR 3 for some more bass and chorusing. This patch is layered to itself for some interesting stereo effects and a larger sound. Watch out for LFO 2, it is set up just for SQ-80s. For ESQs you could change its MOD source to pedal if you have one, or just leave it out if you don't. It's just used for vibrato.

The third patch, "CYGNUS," demonstrates an interesting Category 2 function. This is the category where regular static waveforms become virtual TRANSWAVES, and any pitch modulators applied to OSCILLATOR 2 actually turn into waveshape modulators. This patch uses one of the FORMANT waveforms, which have some unique properties when

ESQ-1 PROG: LETSGO

By: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	00	00	SQUARE	OFF	-	LFO1	+03
OSC 2	-1	00	00	SQUARE	ENV1	+63	LFO1	+03
OSC 3	-	-	-	-	-	-	-	-

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

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	127	00	00	OFF	-	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	41	08	OFF	-

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	26	OFF	OFF	TRI	00	00	00	WHEEL
LFO 2	-	-	-	-	-	-	-	-
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+63	+00	+00	00	00	00	38	00	63	00
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+00	+00	00	00	00	42	00	07	00

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

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

ESQ-1 PROG: SYNBAS

By: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-2	00	00	SAW	OFF	-	LFO2	+02
OSC 2	-1	09	00	SAW	LFO1	+27	LFO2	+02
OSC 3	-2	00	04	SAW	OFF	-	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	-	OFF	-	-	-	-
DCA 2	63	ON	OFF	-	OFF	-
DCA 3	00	ON	WHEEL	+63	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	000	00	00	ENV1	+63	ENV1	+63

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	54	08	LFO3	+63

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	06	OFF	OFF	TRI	63	00	00	OFF
LFO 2	22	OFF	OFF	TRI	00	00	00	PRESS
LFO 3	04	OFF	ON	TRI	63	00	00	OFF

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+44	+30	+00	34	00	00	16	63	46	00
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+63	+63	00	00	00	00	00	29	00

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

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

ESQ-1 PROG: CYGNUS

By: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	00	00	SQUARE	OFF	-	OFF	-
OSC 2	-2	04	00	FORMT1	LFO1	+25	OFF	-
OSC 3	-2	11	27	ELPNO	OFF	-	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	-	OFF	OFF	-	OFF	-
DCA 2	63	ON	OFF	-	OFF	-
DCA 3	00	ON	WHEEL	+63	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	000	00	25	ENV1	+63	ENV1	+30

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	50	08	KBD2	-63

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	18	OFF	OFF	TRI	63	00	00	OFF
LFO 2	-	-	-	-	-	-	-	-
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+50	+48	-15	35	00	00	03	52	18	13
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+63	+63	36	00	00	00	00	49	00

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

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

ESQ-1 PROG: HARPCD

By: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	00	00	SQUARE	OFF	-	OFF	-
OSC 2	+0	00	16	NOISE2	OFF	-	OFF	-
OSC 3	+0	00	01	PULSE	OFF	-	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	-	OFF	-	-	-	-
DCA 2	57	ON	OFF	-	OFF	-
DCA 3	00	ON	WHEEL	+63	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	088	00	00	ENV1	+63	ENV1	+63

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

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	-	-	-	-	-	-	-	-
LFO 2	-	-	-	-	-	-	-	-
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+00	-63	-63	00	00	00	56	00	00	18
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+63	+63	00	00	00	00	00	07	00

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

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

SYNCed. Rather than getting really complicated and technical, I'll just say that within a certain tuning range, these waveforms give a wah-wah type effect. Each of the FORMANT waves has a different tonal range. Be sure to try out each of them in OSCILLATOR 2. LFO 1 modulates the FORMANT wave's shape in OSCILLATOR 2 for the wah-tremolo effect. The MOD WHEEL brings a slightly detuned electric piano sound to beef up the sound a bit.

For the fourth patch "HARPCD," I created a patch that is very close to the harpsichord patch from the pulse-width modulation article. But here, it is based on one of the NOISE waveforms. If you play this patch with the SYNC turned off, you will get the usual grungy electronic sounds that you are supposed to get from these waves, but when SYNC is used in either category, each of these waves give a whole series of bright, harmonically-rich new waveforms that are perfect for harpsichords and other complex sounds. This particular one happens to fall into CATEGORY 1. In this patch, SYNCed OSCILLATOR 2 has no moving modulation — it just stays at one pitch per key. This is really important when using any of the NOISE waveforms. If you don't believe me, try using the PITCH BEND WHEEL and bend a few notes on this patch. Sounds pretty grizzly, doesn't it? This patch shows that the SYNC effect can give many different static waveforms from each regular ESQ or SQ-80 waveform, like how you can use

each of the more recent Ensoniq's TRANSWAVES as a collection of static waves. The main difference is that the ESQs and SQ-80 give you a much larger and harmonically varied palette to choose from. Be sure to try out some different pitch settings in OSCILLATOR 2 and see how it changes the tone. In this patch, the MOD WHEEL brings in OSCILLATOR 3 to add a 4-foot rank to the basic 8-foot harpsichord sound (back in the ancient past, before rock and roll, harpsichords borrowed pipe organ terminology to describe the different pitches on instruments that had more than one set of strings to work with).

Well, I hope this gives you some new things to consider when you do patches. There is so much programming potential hidden away in just the SYNC feature that one or two articles can only take a look at a small part of it. For example, a few of the SQ-80 waves give some really strange reactions to SYNC. And we didn't even touch on the A.M. function in this article — that's a whole nother story...

Mod you later. ■

Bio: Kirk synthesizes around near Denver and collects and restores vintage keyboards and amps so he won't have any need for Emu's Vintage Keys synth. He's also somehow under the impression that Ensoniq named the KS after him.

Keyboard Raves About Ramtek

November 1994

One of the benefits of Ramtek's products... is that they're rack-mounted, which is preferable to table-top units for rack-owning and/or traveling musicians. (Ramtek also makes tabletop models.) The cabinets are of rugged steel construction, a necessity for use on the road. In addition, whereas [Ramtek's] competitors shy from offering their storage systems in a single-space format because of the size constraints and possible thermal problems, Ramtek doesn't. In the 6 months we used [Ramtek's] D1200, we never encountered any trouble due to overheating. Those with limited rack room should appreciate the small space these products require. Also impressive is the fact that the internal cooling fan, which is quieter than the hard drives themselves, adds minimal acoustic noise to your music environment... If you're running short (of storage space) Ramtek should be one of the places you call.

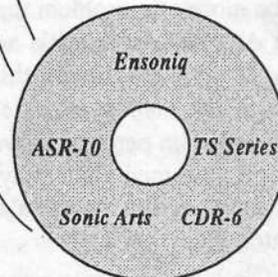
BOTTOM LINE

[Ramtek's systems are a] Grade-A choice for any rack-oriented and/or traveling musician in need of lots of reliable digital storage space.

Rackmount Mass Storage Systems Designed...



...Configured & Built for the Serious Working Musician



Ensoniq CDR-6
"Best of Sonic Arts"
Vintage R&B
and Rock
Instruments

Ramtek, Inc.

Memory Driven Technology

32003 Plymouth Road
 Livonia, MI 48150

Special Combination Pricing Available. For More Information, Call 1-313-513-7440

Reality Bytes

CD: *Dream So Real*.

Artist: PassionFix.

Contact info.: 900 Princeton Terrace, Glen Burnie, MD 21060, phone: 410-761-7253.

Equipment: (I hope you're sitting down for this one.)

Recorders: Tascam DA88 Digital 8 Track, Tascam MSR 16 Analog 16 Track, Tascam DA-30 DAT.

Digital Reverb: Dynacord DRP 20, Lexicon PCM 60, Ensoniq DP/4 Parallel Effects Processor, Ibanez SDR-1000, (2) Roland SRV-2000.

Compressor/Limiters: Anthony DeMaria Labs ADL 1000 Tube, LA2A Clone, Aphex Compellor Model 320, Valley 440 Compressor, Altec 436c Tube Compressor, DBX 166 Dual Channel Gated Compressor, DBX 160XT Compressor, Aphex 720 Dominator II MultiBand Peak Limiter, DBX 263X De-Esser.

Keyboard: Roland Super JX-10

Mixing Consoles: Hill Remix 24x16x8x2

Synth Modules: Korg M3R, EMU Proformance Piano Module

Noise Reduction: DBX Type I, 16 Channels

Digital Delays: (2) Lexicon PCM-41

Computers: Atari 1040 ST, IBM PC/40 Meg HD

Software: Hybrid Arts SMPTE Track Gold 60 Track Sequencer

Believe it or not this is a partial list of what lives in Dave Kelly's basement.

This tape is an excellent example of the maxim recording engineers are taught early on — get a good clean, obvious sound for each track. All of the instruments and especially the vocals are Defined and Clear. In many of the tracks on this CD the vocal almost seems too up front, too in-your-face, too dry, which would be more of a problem than it is if it were not for the fact that Angela Lazzaroni is a credible vocalist. Still, I can't quite get my head around this choice for the vocals when the rest of the instruments are so well mixed and matched and effected. The percussion was good, though rather static, more programmed than played. The guitar work balances these songs against Angela's vocals. The guitar work is quite expressive.

Now on to the songs:

Another World stands out as the best of the bunch with a cleverly placed Angela-on-Angela vocal hook in the chorus. This uptempo ballad is really a good listen, but doesn't give much to think about.

Thread The Needle is more meaty and biting in the thought

department and packs a punch creatively, with a real sing-song 4/4 structure and not even a hint of a chorus or a bridge. Verses are broken up by some very evocative guitar work.

City Lights has a great chorus and bridge coming off a light rock ballad. I would have loved a chance to hear everyone cut loose, get wild and really take the song to another level.

Bleed Me begins with the energy I was looking for in *City Lights*, and finally some more effects for Angela to work with. Once again this song could romp. There is real potential for this song to go somewhere. The guitar work reflects this off to the side, on the corner of the stage somewhere. These melodies also tend toward the singsong almost-spoken style.

Feel has a nice acoustic guitar and peppy percussion. Once again there is not necessarily any chorus to match these verses, but there is a bridge and the leads and music that weaves in and out is quite nicely done.

This was a very well done project, and this band would probably do well live. I would hope that their next projects take more chances and really challenge the listener. They have obviously long ago passed the test of making quality music. ■

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.

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.)

Five Moneymaking Promotional Ideas for Musicians

Jeffrey Fisher

Spending money to promote your music business is easy. But right now you may be overlooking a few low cost or no cost promotional ideas that can help you put more cash in your pocket. No matter what music business you are in — composer, band, recording studio, etc. — here are a few moneymaking strategies for you to use.

Advertising

Ads are expensive and it's easy to waste your precious capital resources on them. Here's a secret: many smaller ads are better than one big ad. Repeating your message to the same audience is crucial. And don't use a classified ad to sell directly because it's hard to sell most products and services from a few lines of copy. People want complete information before putting down bucks. Let your ads generate leads and then do the selling with subsequent marketing pieces. I'm fond of classified and smaller ads. They're inexpensive and can generate tons of leads for you. Just make sure your ad includes an indication of one or more benefits, an offer to induce response, and the necessary details:

MAKE MONEY scoring soundtracks and jingles! Turn your music into cash! **FREE** report: Jeffrey P. Fisher Music, 8341 Ripple Ridge, Darien, IL 60561.

A tantalizing benefit (make money) along with a strong offer (free report) creates an ideal small ad. Here are a few more tips. Don't use abbreviations. Whittle the words to a minimum but don't sacrifice the clarity. Keep track of all your advertising. When people call, take a second to ask where they heard of you so you know where your money, time, and energy are best spent.

Sales Letter

While every business is different, the basic promotional package is something shared by all. Your typical package consists of a brochure, cover letter, and business card. Sometimes more; rarely less. Don't worry about having some fancy four-color brochure. If your materials focus on your clients, their needs and their benefits, you can get by with much less. Using a sales letter is the best way to introduce yourself. Get as detailed or brief as you want. Use simple language and fill every line with compelling benefits and a strong offer. Your best weapon is a personal letter from you to your prospect printed on your letterhead.

There are seven major parts to every sales letter: headline, problem statement, solution, benefits of solution, offer, time limit, and post script (P. S.). Use the headline to grab the attention. State the problem and propose your solution. Explain all benefits and make an offer. Put time limits on all offers and encourage prospects to respond quickly. Use the post script (the most read part of the page) to restate all that came before in a concise summary.

Make sure your marketing materials are neat, organized, and well written. Keep your presentations simple, uncluttered, and use clean, readable typefaces. Print all your marketing materials on your letterhead or make sure you include your complete address and telephone number on every piece (don't forget your area code).

Attitude

I firmly believe that your enthusiasm, both for you own work and for client projects, is the easiest (and cheapest) promotional tool you can use. I confess that my attitude has won me more gigs than any single credential. A warm smile, a willingness to work hard, and an eager attitude will serve you well. When you are passionate about your work, it excites clients and prospects, too. Your enthusiasm gives clients confidence and reassures them that you can and will do the job right.

Demo "Hot Line"

Add a music demo hot line to your promotional arsenal. You need to get a second business telephone line and hook it to an answering machine. Ask people to call for a short excerpt of your latest music tracks. Make sure to include your sales message on the tape. Here's a sample I would use:

"Welcome to the Jeffrey P. Fisher Music Hot Line. Do you need music that works, sound great, and is very affordable? Stay on the line and listen to this musical montage of my latest work. I'll be back in two minutes with a special offer just for you." (Now run your short, two minute musical montage.) "Thanks for listening. Here's that special offer I promised. Leave your name, address, and telephone number after the beep and I'll send you a free booklet that shows you exactly how to get the original music you need at a price that makes sense."

Promote your demo line in letters (makes for an ideal postscript), in publicity releases, on postcards and flyers, and add a line at the end of your regular demo that invites clients and prospects to call and hear your latest music.

Open House

Bands and recording studios can really benefit from this promotional tool. Throw a party, invite clients, prospects, fans, family, club owners, and other influential people from your local music market (don't forget the media!) and you be the entertainment.

Make sure you have plenty of promotional material to give away. Make up a gift bag containing your latest music, printed promotional material, discount coupon or other appropriate offers, and more. Be sure to serve some munchies and libations. And show off what you can do. You could

offer discounts or give away door prizes. Make sure your prizes will result in more business, such as buy four hours of studio time and get four hours free. Don't forget merchandising. Popular acts can make heaps of cash selling T-shirts, caps, jackets, and other doo-dads.

When you use these and other promotional tools regularly, you keep your name alive, build credibility, and ultimately put money in your pocket. Try many different tactics. Get crazy and be different. Have some fun. And sell your music products and services by spending the least amount of money.

And here's the P.S. — Get more moneymaking promotional ideas direct from Jeffrey. Mention the *Hacker* and he'll send you details on how to turn your musical talents into cash. Write Jeffrey P. Fisher Music, 8341 Ripple Ridge, Darien, IL 60561 or call (708) 971-1641. ■

Classifieds

HARDWARE/SOFTWARE

TS-12, new in box, great condition. \$1799. Phone: 312-902-3557.

TS-10. Studio use only. Samples, sounds included. \$1699 obo or trade for ASR (keyboard). Call Chad, 209-358-1343.

VFX-sd2, \$850. Tons o' voices. Bob, 607-898-4868.

EPS-16 PLUS with full memory expansion, hundreds of sounds, and hard case. Brand new condition. \$1000. 607-776-9867 or 607-962-8078.

EPS-16+ w/ 4X, Flash, SCSI, disks & docs, \$1200. SQ-R, 21-voice, \$300. SDP-1, weighted keys, \$400. Best offers. Making room for ASR-88. Pat Finnigan at 317-594-2919 days or 317-462-8446.

VFX-sd 21 voice, with entire Ensoniq and Syntaur libraries, perfect condition. 2.10 software O.S. \$750. Phone: 1-714-577-4293.

Quakecaster! A unique guitar appearing in several Ensoniq manuals, used in designing DP/4 presets and testing Beta units. Silvertone

body, International neck, Fender tuners, Gibson electronics, unknown microphonic pickups. 23 3/4" scale. Best offer. Tom Tracy, Ensoniq Corp., 155 Great Valley Parkway, Malvern, PA 19344.

Wanted: KX-5, EPS-M. Bob, 607-898-4868.

TS-12. Expanded sample memory, SQX-70 installed. 50+ disks. \$2500. 610-942-4492.

Ensoniq ASR-10, 8mb ram, keyboard cover, extended sound library, 1 year subscription to *Transoniq Hacker*. Studio condition, less than 1 year old. \$1599.00. 704-542-1513, Chris.

VFX-sd w/hard case + large library. \$895. Tel/Fax: 212-727-0887. Mint!

VFX-sd, 21-Voice, all updates. \$700. Todd, 402-553-3750.

SAMPLES/PATCHES/SOUNDS

Original ASR, '16+, EPS, Mirage Samples! Will trade for 1960's and 1970's vintage combo organs, electric pianos, electric guitars and amps. Call Barry, 315-379-9763.

Still available — Jim's Toybox: 60 original sounds for the VFX-sd. Unusual, avant-garde. (See review in June, '93 *Hacker*.) Trade for bank of original sounds or *uncopied* copyright sounds. Or send \$20 check. Send SASE for documentation. Jim Samp, 90 Bell St., Fond du Lac, WI 54935. Phone: 414-922-4337.

"*Resonant Dwarf*" forges original electro/acoustic & electronic samples for EPS-16+. ARP, Korg, Moog, Hohner, Paiste, Roland, Sequential and assorted sonic surprises. Catalogue = \$1 or free with SASE. \$4 per disc. Andrew Faltonson, "Resonant Dwarf," 903 NE 50th St., Seattle, WA 98105.

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, 726 Fourth Avenue, Williamsport, PA, 17701.

MISC

Akai CD-ROMs: *Hyperspace*, *Hyperdance*, *CD-ROM Showcase* all for \$100. (2) 1 Meg Simms \$35. Syneman SMPTE to MIDI converter \$40. Call Brian 713-486-9427 after 1pm CST.

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 take ad dictation over the phone!

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...

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.

TH,

I'm purchasing an Ensoniq **Soundscape Elite**, and have found a cool DOS program called CTHUGHA which takes the input source of the internal audio CD-ROM or line-in, and draws psychedelic and colorful patterns on the screen, changes at random (with the music) or by user keypresses - all around just a NEAT program. Check it out at:

ftp://wuarchive.wustl.edu/systems/
ibmpc/simtel/msdos/sound/cthug51.zip

Other files there of note are CTHUG51P.zip, a patch for a bug, and CTHUG51S.zip, the complete source code.

HOWEVER, this program works ONLY with SoundBlaster and Gravis UltraSound. Bummer. I thought I'd write the Hacker and see if any of you readers out there are Soundscape programming wizards and might be interested in writing drivers for this program?? Any takers?

(P.S. I have no connection to the authors of Cthugha. I'm just a user.)

Dan Wellman
Via Internet

[CS - Thanks for the info, Dan. And good luck in your quest...]

Dear TH:

First of all, I like your magazine very much...:)

I have had an ASR-10 for more than two years. I own also a 486-DX2. Before asking my question I just want to comment that I think I'm the first Is-

raeli Hacker who asks questions!!!

So, my question is:

1. Is there any possible way to utilize my 486 as a sound bank with or without SCSI?

2. Is it possible to add or to change my RAM with ROM bank sounds? (What I mean in simple words is can I have some preloaded sounds, without using the H.D. or diskettes (Like the TS-10).

3. Can you recommend a good home tape recorder to connect to the ASR-10?

P.S. - I have my own professional BBS for music. Telephone Number: 972-4-769406.

Thank you,
Ariel Dvorjetski
Bialik, Israel

[CS - 1) There are a couple of things you might find helpful. One is a program called "Ensoniq Disk Manager," available for \$54.95 from Giebler Enterprises, 26 Crestview Drive, Phoenixville, PA, 19460. It's a (and I'm quoting Garth Hjelte from the October 1994 TH) "DOS EPS File/PC File Converter - (it) takes entire disks or single files from EPS/ASR disks and converts them to PC files, (and provides) automated copying." You might also watch for "EPSREAD, EPSWRITE" (shareware, available via online FTP - oak.oakland.edu:pub/eps/utills/msdos), "EPSPC" (freeware, available in the MIDI/Music area of Compuserve), and EPS/Disk (freeware, also available via online FTP from oak.oakland.edu:pub/eps/utills/msdos).

2) No. However, if you utilize banks to load groups of sounds from your hard disk, I think you'll find it almost as convenient as having the sounds available

in ROM.

3) I might take a stab at this question if you provide a bit more info; primarily, what kind of media are you interested in (cassette, reel-to-reel, DAT, etc.), are you looking for 2-track stereo or multi-track, is portability a factor, and what's your price range?]

[Ensoniq - 2) What you're describing is similar to the Flashbank option that was available for the EPS-16+. Unfortunately, this option was not very popular and was therefore not carried over as an ASR-10 feature.]

To: interface@transoniq.com
Subject: Ensoniq Service Excellence

I have a KS-32 and had some unusual problems with a major component manufactured by a third party for Ensoniq. Unlike some of the comments regarding Ensoniq's service I found it to be excellent. The problem with my KS-32 surfaced three weeks out of warranty and rendered the keyboard far less than acceptable. However, Ensoniq immediately responded to my call by authorizing a warranted repair. While I'm sure Ensoniq will not grant three week warranty extensions to everyone, this problem appeared to unquestionably earn their attention.

Print this good report and thanks to Ensoniq service for not following the Intel Example.

Sound Questions: If the battery in my KS-32 goes, can I get a service dealer to re-install the RAM sounds? Do the memory cards become blank when their battery goes? Is it possible to replace either the KS-32 or the memory cards batteries without loss of sounds? What a waste if not. Five years later the \$90

sound card becomes blank RAM?

Can someone make an interface card that would turn the memory slot into a computer port for PC based sounds?

75542.2134
Via CompuServe

[CS - I'm afraid it's a fact of life that if you remove the battery from either your KS-32 or your RAM card, any data contained in RAM will be lost. Theoretically, if you have your battery replaced by an authorized service center, they should back-up your sounds before removing your battery, and then restore them once the new battery is installed. Still, (keeping in mind the capricious nature of Mr. Murphy), I'd recommend creating your own back-ups for any data you wouldn't want to lose. Data can easily be backed up to a computer, of course, and nowadays most instru-

ments that feature a disk drive provide some way to store SysEx from external devices, so if you don't have a computer, perhaps you have another keyboard that will do the job. If none of these situations work for you, you might think about contacting the dealer where you purchased your KS-32; perhaps he'd be willing to help you create some sort of back-up for your data.

Even if it were possible to interface aspects of your instrument with a computer via the card slot, I think it's unlikely that anyone will go to the expense of designing and manufacturing such a system. Still, you never know...]

[Ensoniq - The batteries inside the KS-32 and on the SRAM card may be replaced. While Clark is correct about SRAM cards in general, you can replace the SRAM card battery by leaving the card in the slot and the KS powered

on. The battery inside the KS-32, on the main board, must be replaced by an authorized technician. When the KS-32 is powered on, the main board and the SRAM card batteries are bypassed. So an authorized technician could replace the main board battery without losing data and you can replace the SRAM card battery without losing data. These batteries should be good for many years (sometimes as long as 10 years under the right conditions) and when the "LOW BATTERY" message appears, you should have a few months to change it before any loss of data occurs.]

To: interface@transoniq.com
Subject: J Trammell letter

If you want to compute compression/expansion percentage for converting BPM "A" to BPM "B," simply divide one into the other.

120 BPM to 100 BPM would be:

$120/100 = 1.2 = 120\%$ compression/expansion (the sample will be 1.2 times longer (slower) than the original.

Keep in mind that equations whose answer is greater than 1 will be expansions, less than 1 will compression. So if you want your sample longer (slower), the answer should always be greater than 1. If not, then you're dividing backwards.

Steve Covello
Via Internet

[CS - Thanks for the info, Steve. And those lacking a calculator might want to check out Martin Zimmermann's letter below.]

Dear Hacker,

I refer to the letter of James Trammell in Issue #120. He was looking for some kind of equation for using the ASR-

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). Business hours - Victoria. (03) 480-5988.

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.

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@net.com.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.

10's time compress/expand function. I've created a table that helps changing sample-speeds-BPM to BPM. It also contains some values that are needed to change the pitch of a sample without changing its speed.

If any ASR-10 user is interested in this table, they're invited to send me their name and address as well as about \$5 (or equivalent) for my expenses.

Sincerely,
Martin Zimmermann
Rainstrasse 37
CH-8038 Zurich
Switzerland

[CS - Boy, it seems like everyone's calculatin' that compression/expansion thang this month. Now if I could just figure out how to compress my girth and expand my height (a ratio of, say, 47:1 ought to do it) I'd be set!]

Dear Hackers and Ensoniq,

It feels great to be a part of the world synth community. Thank you for printing my mammoth expose of self confessed madness, and for your kind suggestions of solutions to my problems. I hope one of those operating system Hackers will contact me!

Since that letter, I am pleased to say that I am feeling much better, mainly because my TS-12 has been back to the Ensoniq Hospital in Melbourne, had a brain transplant, (complete motherboard replaced), and is now acting in a much more civilized manner. However, it still has a long way to go to reach true Homo-Sapiens-Sapiens standard.

I have given up on the idea of using my Roland MC500 with the TS. One of the features I like about Ensoniq synths is the big display. Its brightness is good in broad daylight, but in low light conditions it is enough to light up the whole room. Unfortunately, despite its new brain, the TS continues to exhibit frustrating and time wasting little quirks of dysfunction.

(1) At last, the Electric Factory (Ensoniq Australia) people have agreed there is a major bug in the operating system. When data is entered into a track in EDIT EVENT, often the existing data is shifted, sometimes bars away. This appears to happen if GO-TO is used in the process. I had the same problem with the SD-1. They tell me that Ensoniq is working on it. Is there any progress and will there be an upgrade in the operating system?

(2) It takes objection to disks sometimes; FILE OPERATION ERROR 3. Disk has to be reformatted and files copied from back-up. I have to have two back-up disks!

(3) DISK ERROR; -----rebuild!!

(4) Often, after choosing a different sequence, the data entry buttons or the slider will not change and keep the value of a selected parameter until it is newly reselected.

(5) If the Tempo track is present, data or none, then the SONG TEMPO will not adjust the overall tempo.

(6) ERROR 129 occasionally. TS usually reestablishes contact with no loss of data.

(7) When deleting bars from a song

track, one bar cannot be deleted from bar 1. Data buttons don't work, slider does - but I could not delete that first bar.

(8) After creating a song, when I try GO TO a particular step, TS says SONG IS EMPTY! After much frustration, reinitialize and start again!

Why Ensoniq, so much right and so much wrong!? Why are the patch buttons grey and not black like all the other buttons? So they can be seen?

Questions -

(1) How can a user effect setup be copied to another sequence?

(2) How can tracks 1-6 be silenced, leaving tracks 7-12 sounding, in one procedure? This would allow each sequence location to hold more than one sequence. I realize this can be done by creating a song, but that uses up another location. I've tried setting VOL to +ve and -ve, selecting the required tracks, and then adjusting the CV control to either extreme, but that only affects live played tracks, not sequence data.

(3) How can a sound be programmed so that in different patch selects, some have SUS- ON and others SUS- OFF? Similarly for a layered prog?

Discoveries -

To get a track to send a PROG, change number greater than 60 to EXT, without it changing the FX of the sequence. Select the sound you want for the track to play locally, set the track to SEND-----, enter the PG in EDIT EVENT, (may be -1), and set the bank to 127. This way I send any PG to my

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FX unit on the same track which I play live.

Save memory, by erasing any track recorded, but empty, in MULTI mode. Mark centre of MOD wheel with white-out, to show position. TEMPO track only needs to be recorded at point where tempo change occurs.

To save sequence locations, copy those seq that are only used once in a song, to the song tracks. Most information about the TS applies to SD-1. TS-ROM string sample is flat as a tack! De-Tune (Retune) by approx +10.

A sliding potentiometer (available cheaply at electronics shop, or out of old TV), can easily be wired to make a CV controller, and put on top of synth.

A cheap momentary switch can similarly be used on board instead of a foot pedal.

COME ON PEOPLE! Get writing... Share your frustrations, your loves and hates. Tell us your tricks and discoveries and expose your opinions and passions! How about a regular feature in which musos show or explain their set-up, their combination of gear, how it's held together, and perhaps how they actually work on the gig?

Yours sincerely,
Mel Laraway
South Australia

[TH - Well, the Interface is a good place for that, and - it already is a regular feature.]

[CS - 1) Select the effect you want to copy, and press the "Copy" button. Select "MAKE COPY." Select the sequence into which you want the copy placed. Hit the "Copy" button again, and select "RECALL."

2) I can't think of any way to accomplish this without the use of external MIDI devices of some sort. Perhaps some reader brighter than I can come up with a solution (and that would be most of you, you know).

3) I'm afraid a sound can't have different sustain pedal settings accessed via patch selects. However, a sound that's part of a preset or sequence can have its sustain pedal setting predetermined. Try selecting a preset, for example, and then pressing the "Controllers On/Off" button. From this page, you can set whether each of the sounds in the preset will respond to sustain pedal presses.

And by the way, thanks for the tips, too!]

[Ensoniq - It's good to hear that you are feeling better about your TS-12. Several of the items in your letter have been sent to our software department. Keep posted for more details.

Here are answers to your three questions:

1) Select the sequence. Press TRACK

EFFECT. Press the COPY button. Press MAKE A COPY. Select new sequence. Press TRACK EFFECT. Press the COPY button. Press RECALL.

2) Mute TRACK VOLUME on tracks 1 through 6, one at a time. There isn't an easier short cut. Each track must be muted separately.

3) SUSTAIN ON and SUSTAIN OFF are track parameters only.]

To: interface@transoniq.com

I am trying to automate my sound design on the ASR-10 using a sequencer to send SysEx data to change parameters, make loops, copy waves, etc. I want to eventually program a list of transformations and parameter settings on a sound and then apply that list to other waves without having to sit there and do it manually. The problem is that there is no SysEx for sampling. I can loop, normalize, and everything else, but I can't resample with effect. When I virtually press sample, it works, but then if I virtually press enter or left or right, it first takes me out of sampling mode. Is there a way to do this?

Thanks
Jordan Roseman
Jordan0@aol.com

[CS - As far as I can determine, the ASR ceases to respond in any predictable way to virtual button presses once sampling has been initiated, so I guess you're out of luck on this one.]

Dear Hacker,

1. On my SD-1 I have a harp patch in a sequence that requires a special effect. I have been trying to find a way to spread the notes from D3 to G4 across the stereo field, with D3 located at the pan position 00 and G4 at 99. How can I do that using only one track?

2. Occasionally I run into a problem when using pitch bend on patches with over a certain amount of sustain. When

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bending a note, any prior sustaining notes will also bend. Any way to set things up so that only the last note on will be affected?

Thanks,
B. N.
Dallas, TX

[CS - 1] Normally, one would use the keyboard as a modulator, routed to the PAN MOD parameter, but this won't provide you with as dramatic an effect as you're looking for. However, you can make the effect more pronounced by using the MOD MIXER to multiply the effect of the keyboard as a modulator; just use KEYBOARD as the SRC 2 input to the MOD MIXER (you can leave SRC 1 set to OFF), and use the SCALE control to multiply the effect of the keyboard modulator by a factor of up to 8.0.

2) There's no way to set up the pitch bend to apply only to the last note played, but there are a couple of work-arounds you may find helpful. One is to edit the sound in question to use Poly-Key pressure to control pitch. The other would be to set up the sound to utilize pitch-bend in the "held"

mode. Press the Pitch Mods button, and set the BEND parameter to the pitch bend range you want to use followed by the letter "H." In other words, if you want the bend range set to two half-steps, set the BEND parameter to "2H." Now, only notes that you are physically holding on the keyboard will bend when you move the pitch wheel; notes that are sustaining because they have a long release time, or because you're holding the sustain pedal down, won't bend.]

The Interface,

I just bought the TS-10 a month ago, I've finished my first issue of the Hacker and now you're reading my first of many letters to you and Ensoniq.

#1 - Great toy, and I mean that with all due respect. Everything to me is a toy. Some are bigger than others, some are better, and the TS-10 is both.

Well, for ten years I have had a DX7 and a TR707 drum machine, MIDI'ed via an SQ-1 sequencer. (Are you laughing now??!!) I wanted to get an SD-1 so my partner and I could swap ideas, but they are hard to find! And when you do find one, they don't want to sell it!

#2 - I want to stay as up-to-date with this system as possible. How can I tell what ROM version I have? And how can I know when there is an update? Where do I go? What does it cost? What's with this ROM version stuff?

Well, that's it for now. I have so much to ask, so much to learn, so much to say. But I also want to play my baby. I call her Tess. No, it's not my wife - although my wife does call it "the other woman!"

Hey, thanks for listening (reading)!
Gerald Davenport
Nevada City, Ca

[CS - The TS-10 (as with any computerized device) has a set of instructions which tell it how to behave, and how to respond to user input. These in-

structions are generally stored in what are called ROM (Read Only Memory) chips. A manufacturer can then change these instructions for whatever reason, store the new instructions in new ROM chips, and distribute the new chips to customers who want the new version.

To find the software versions for your TS-10, press and hold the Presets button, then hit the System button. The TS-10 will briefly display both ROM and KPC version numbers. And you should be notified of updates if you've returned your warranty card. Also, we'll keep you posted in these pages. Updates should be handled through your local authorized Ensoniq Service Center. The charge may vary, but should be quite reasonable, and in many cases, free.]

Hacker:

Keep up the excellent work! Your mag is eagerly awaited each month.

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
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To Jeffrey Rhoads: As you no doubt know, there's one curious omission among the ROM waves in the TS-Series – swept brush! There are several brush hits, which are very usable, but why go halfway when you can go all the way?! I used to own a VFX-sd and there was a third-party sound for this particular need. When I traded in my trusty old axe to upgrade to the TS-10 I was surprised to learn I had lost a vital patch. My limited talents as programmer prevent me from creating a convincing program so I'm relying on your expertise on this one. If you published a swept brush patch for the TS-10/12, I'm sure you'd make many owners happy!

May the sun follow your path where ever you go and may your dream keyboard be announced in an affordable price bracket!

Markku Perala
Finland

[Ensoniq – Try ASR-10 Library AS-7, the Baldwin Piano library, which in-

cludes some Jazz Trio instruments. It includes a swept brush sound. You may order this library at your local authorized Ensoniq dealer or directly from Ensoniq at 1-800-553-5151.]

Hacker –

In response to Yiasoumis Anastasious's comment in June's Interface regarding "unassigning" selected sequence tracks, I have a solution!

Erasing the track twice on my TS usually results with the track reverting to "unassigned." Then, before playing the sequence, save it to disk, erase the sequence from memory, reload it and, *voila* (or *viola*/violin – you decide).

If you have several tracks to "unassign," you may find that for some strange reason after you have done this to, say, tracks 2 and 4, then changed to the 7-12 screen in order to do, say, track 6, then go back to the first screen to check, that the tracks have myster-

iously reappeared. But don't panic – shit happens. Just try again, perseverance should win out. I'm surprised that Ensoniq didn't include this tip in their manual or in their reply.

I have noticed that when sequencing, say, a drum track, and when reviewing with the event editor function, the TS sometimes "refuses" to go to the last few events at the end of a particular track, making editing difficult. The only way to view these events is to either scroll through the smallest time parameters or to copy something previous into a further part of the sequence. It's almost as if the TS is "afraid" of looking over a cliff edge, you have to nudge it, or extend the cliff face! Why is this?

Also Ensoniq – I'm still waiting for my "I (heart) my TS-12" bumper sticker (and roadcase sticker)!

Jeff Weir
New Zealand

[CS – Thanks for the input, Jeff!]

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