ROLAND U-110 RACK-MOUNT SAMPLE PLAYER
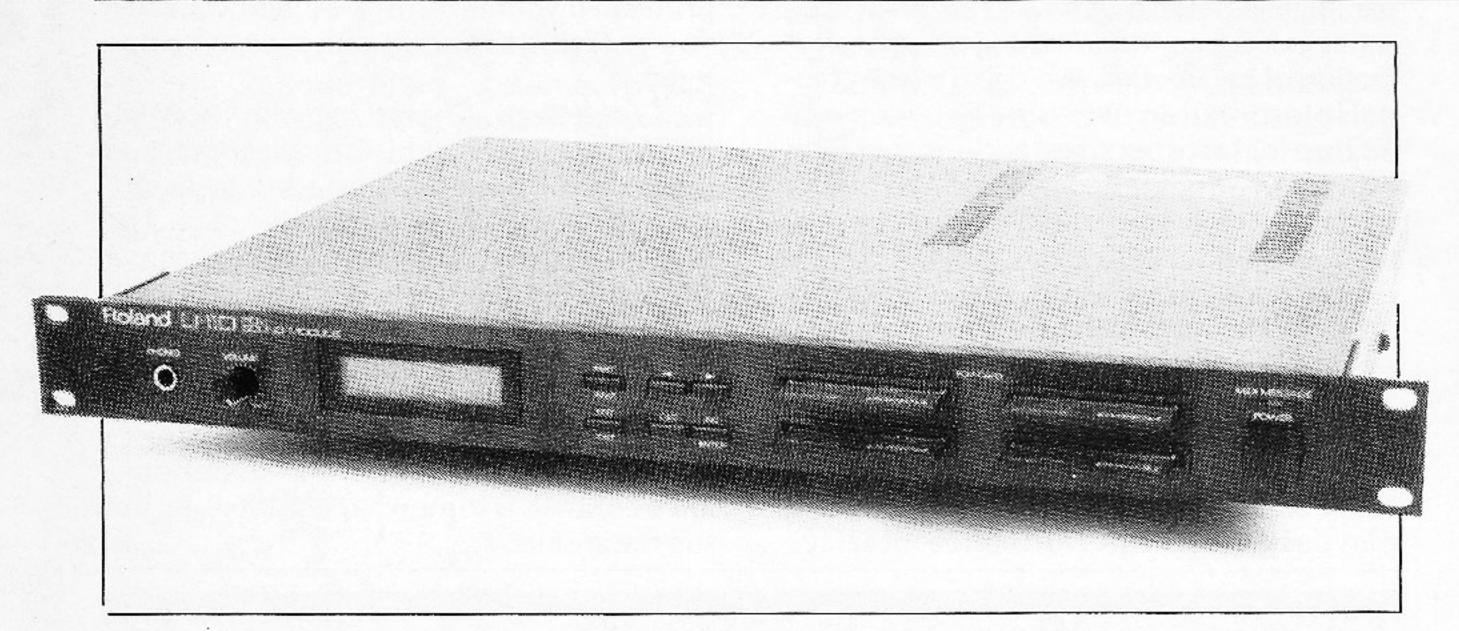
By Jim Aikin

PRACTICALLY EVERYBODY WOULD LIKE to have some extra MIDI voices lying around for those little musical emergencies. And since everybody seems to like the standard battery of instrument sounds—strings, piano, choir, a drum kit, and so on—while not too many people actually program their own synths, it makes sense that somebody would put samples of these sounds in a multi-timbral rack-mount box with plenty of polyphony, get rid of most of the messy programming features, and offer the unit to musicians at something approaching a reasonable price.

That's the theory behind Roland's new U-110. It's too bad reality doesn't always measure up to those glowing theories. The U-110 has quite a lot going for it, but it falls short in one crucial area—sound. The unit we were shipped for review had what everyone on the staff agreed was an unacceptably high level of noise in the samples. It's not extremely obtrusive, you understand, just eminently noticeable. In addition, a few of the samples had pretty blatant loops, and the envelope decays were not always realistic.

The sound quality may be very acceptable to home-recording musicians if they consider the U-110 as a cost-effective alternative to more expensive modules that may have programming features they don't need. If you're in this category, don't take our word on the noise; go down to the store and listen for yourself. (Ask to hear three-note chords on a four-voice layer, not just a single-voice patch, as layering sounds is the only way of creating rich original timbres on the U-110.) You might find that the noise doesn't bother you. But we wouldn't recommend the U-110 for any sort of professional audio application. We tried using our mixer's EQ to roll off everything above 12kHz, but this resulted in a somewhat muted tone. Adding reverb

helped when we played staccato, but with sustained tones (such as piano) whose volume naturally decays, reverb was no help.

Overview. The U-110 has 31 voices of polyphony, which can be allocated into as many as six different "parts" on different MIDI channels. Each part can have its own "tone" (Rolandese for the preset samples) and can be routed to its own output jack if desired. If you believe the front panel and the manual, the unit has 99 tones stored in ROM. The actual number is somewhat smaller, however, because many of the 99 are layered versions of one another. Many of the tones are multi-sampled across the keyboard, so maybe there are as many as 99 samples living inside the unit. Keyboard zoning is not programmable within an individual tone, however.

The instrument allows you to program 64 patches. Each patch consists of an assignment of tones to parts, along with values for a few basic parameters for each part—coarse and fine tuning, vibrato rate and depth, MIDI

Pros & Cons:

Pros: Variety of sampled sounds, plus card slots for more. Lots of voices with individual outputs.

Cons: Inherent hiss. Some obvious looping. Very few programmable parameters.

Roland U-110

Description: Rack-mount sample playback module.

Memory: 64 patches. 2 megabyte sample ROM. Cards contain 124K bytes.

Features: 31 voices, individual outputs with programmable allocation modes. Multi-channel, multi-timbral operation. Programmable levels, tuning, velocity response, envelope attack and release, LFO rate and depth, bend range, etc.

Interfacing: Stereo 1/4" outs, six individual 1/4" outs. Front-panel headphone out. MIDI in/out/thru.

Suggested Retail Price: $1,095.00. Cards: $74.95 each.

Contact: RolandCorp US, 7200 Dominion Circle, Los Angeles, CA 90040. (213) 685-5141.

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receive channel, volume level, bend range, velocity and aftertouch response, and so on. Attack and release rates can be set for a loudness envelope, with a rather coarse adjustment range of −7 to +7. Release settings below −4 are very long, and above +2 are almost instantaneous, so the usable range has about five possible values in it. Curiously, for most of the samples (excluding choir and strings) an attack rate of 0 is instantaneous, so the values from +1 to +7 are entirely useless.

If you're not picky about how you define things, you could say that the U-110 has built-in effects. So does Yamaha's TX81Z, by the same definition. The U-110's "chorus" and "tremolo" are simple detuning and amplitude functions that operate on the voices themselves. No actual audio processing is involved.

The user interface consists of six buttons and a 32-character LCD. This is rather spartan, but the menu structure is easy enough to get around in. We were able to learn the unit quickly, after only glancing through the manual. With only six buttons they managed to include a programmable page recall feature. You can choose whatever four parameters you need to edit most often, and store these for recall with a single shifted button-press. We'd like to see this kind of neat programming feature implemented on more instruments.

The Sounds. Some of the built-in samples in the U-110 are quite nice. There are also four card slots on the front panel for ROM cards that Roland is making available. As a convenience feature for those who absolutely don't want to mess with programming, Roland has included among the 99 "tones" a number of layered, detuned, differently enveloped, and velocity-mixed versions of the basic samples.

In fact, it can be hard to tell exactly how many of each type of sample the instrument holds, because of the velocity mix combinations. Two tones that are identical at low velocities may be rather different at high velocities. This offers more options without forcing the user to do the programming, but be warned: Choose one of the velocity mix tones and your available number of voices drops immediately from 31 to 15. The velocity mixing is not simply velocity cross-fading. With straight velocity cross-fading, one of the two sounds will be loud at low velocities, which can be quite unnatural. On the U-110, the mixing is handled more cleverly than that, so that it sounds very smooth.

There are three actual pianos (plus seven layered and mixed ones), ranging from muted to bright. There are only two electric pianos, a Rhodes and a Wurlitzer (plus three layers and mixes). And so it goes. The raw material includes acoustic and electric guitar, several basses, a choir, a string section, several electric organs, a trumpet, a couple of saxes, a flute, and a shakuhachi.

Then there's the drum kit. This includes somewhere above 30 samples—five snares,

ROLAND U-110

four bass drums, and so on. The drum kit can be fine- or coarse-tuned up or down an octave as a whole, and several sounds are retuned versions of others, but individual drums can't be tuned. The cymbal loops are not the best we've ever heard, and there are no timbales or bongos. To get the latter, you have to buy the Latin Percussion card.

The quality of the samples ranges from excellent to problematical. The acoustic pianos—which admittedly are among the harder sounds to sample well—don't respond nearly as realistically as those on Roland's own HP-5000 (see Keyboard Report, page 126). The soft notes have just as much treble content as the hard ones. The piano notes sustain a bit too long, while the low notes on the acoustic guitar don't sustain long enough. On the positive side, the electric bass harmonic (tone 37) is wonderful, the vibes and marimba are very playable, and the acoustic bass is full and meaty.

The worst loop in the bunch is unquestionably the bottom choral sample. One of the guys seems to be singing out of tune, and he fades in and out during the loop, rendering this whole region of the keyboard useless unless you like gargling basso effects.

The Pipe Organ & Harpsichord card has a couple of very usable organs on it. The harpsichords are rather harsh and brittle, in our opinion. The Electric Guitar card has both jazz (hollowbody) and distorted electric samples. The distortion presets offer feedback on a choice of different overtones, but

we were surprised that the attack had so little bite. The Orchestral Winds card has very nice clarinet, double reed, and French horn tones, plus a timpani hit that sounds great until the loop, which is quite bumpy, cuts in near the end.

The Latin & F.X. Percussion card was a pleasant surprise—lots of useful sounds, along with a few novelties that might find a home on a rap record. The preset tones on the Percussion card include individual full-keyboard versions (you can play scales) of just about all the percussion hits, as well as three assorted kits. We hope some of these sounds show up on cards for Roland's R-8, because they're great! Mysteriously, we couldn't get the U-110 to see the Orchestral Strings card, no matter what slot we plugged it into. Roland sent us a duplicate, but the unit couldn't see it either.

Assignment Modes. We're pleased to report that the U-110 has six individual outputs in addition to its stereo outs. Voice allocation is not dynamic, however. The manual includes a table with details on the 50 different "output modes." Each mode allocates voices to outputs in some fixed scheme. With modes ranging from all 31 voices on output 1 to a 7-8-4-4-4-4 spread across all six, you should be able to find a configuration that will do just about any job. Bear in mind, though, that if you've chosen a tone that has built-in layering or velocity mixing, the four voices in one of those outer parts will be layered so that you can only play two notes.

As we noted earlier, the "effects" section of the U-110 uses extra voices rather than

audio processing. Because of this, some output modes will have an "effected" sound, while others will not. If you've chosen the wrong output mode, you can crank the chorus or tremolo amount clear up to the top and not hear any effect. This is not a problem, it's just something for the novice to check if things don't seem to be working right.

MIDI Implementation. The U-110 responds to MIDI program change commands in two ways. When a patch has several parts responding on different channels, you can choose a new tone for each part by sending a program change on the appropriate channel. (A remap table is included.) In addition, you can send program changes on the unit's global channel, which will cause it to switch to a new patch. It's important for live performance to program the parts within the patch so that their individual program change is switched off. If you fail to do this, the parts will switch to new tones before you start to play.

Conclusions. The U-110 might be a reasonable addition to a small home studio, in spite of its noisy sound. If you do decide to buy one, you can think of it as saving you money on a tape deck: There's no reason to master to DAT when old-fashioned analog tape will do so much to mask the unit's hiss. After you've got the album deal, you can always lay the tracks down with a Synclavier. In the meantime, you'll appreciate the fact that your sample player has individual outputs and plenty of voices. As long as you're willing to live with its sound, it could be a real workhorse addition to your rig. ◼

KAWAI K3, ROLAND D-110, & YAMAHA TX81Z

ENTERING THE DATA FROM THE SHEETS that people send us is always an adventure. Sometimes a truly amazing patch takes shape under your fingers. Other times, alas, what you get is another wimpy piano, or worse. But we keep on slogging through, so that we can bring you the cream of the crop.

This month's K3 patch, "Swell Pad," comes from Harold Ault of Topeka, Kansas. The filter envelope provides just a hint of a swell; for more, use key pressure. Timothy Imlay of New York provided us with "Click Harp" for the TX81Z. (We did tweeze the LFO

a little bit, Tim. Hope you don't mind.) It's a clean, resonant plucked sound that would be ideal for an arpeggiated pattern. Any algorithm will work with this patch. For algorithm 4, though, Tim suggests lowering the output level of operator 3 to around 25 or 30.

A large and versatile group of percussive sounds can be generated using "PrePariano" for the D-20/10/110, from Gino Lazar of St. Louis. This four-sample layer is a basic template into which you can insert whatever PCM waveforms and coarse tunings sound best to you. (Changing the TVA levels may be helpful with some combinations as well.) Combinations that we thought worked well included waveforms 22, 56, 56, 55 tuned to C5, D#4, C3, C4, waveforms 21, 54, 51, 53

tuned to C5, C#4, G#2, C4, and waveforms 19, 55, 30, 57 tuned to A3, F3, A3, C4. The pitch-bender is switched on with two of the oscillators and off with the other two so that by bending and holding the wheel, you can alter the sound. Velocity response is different for each oscillator so that playing harder will alter the timbre mix as well as the loudness. And the fractional keyboard scaling produces a microtonal combination that is different on every key.

Send your favorite patches to *Keyboard* Patches, 20085 Stevens Creek, Cupertino, CA 95014. All submissions must be entirely your own creation, and must not be offered for sale commercially. We'll pay $50 for each patch we publish.

ROLAND D-20 — PREPARIANO

STRUCTURE 1&2	06			
STRUCTURE 3&4	06			
ENV MODE	NO SUS			
		1	2	3	4

		1	2	3	4
WG PITCH	CORS	C#5	C#4	A2	F5
	FINE	00	00	00	00
	KF	1/4	1/8	3/8	-1/4
WG LFO	RATE	–	–	–	–
	DEPTH	0	0	0	0
	MOD	0	0	0	0
	BEND	OFF	ON	OFF	ON
WG WAVE-FORM	FORM	–	–	–	–
	PCM B	2	1	1	1
	PCM NO	5	115	27	2
WG PW	PW	–	–	–	–
	VELO	–	–	–	–
PITCH ENV	DPTH	0	0	0	0
	VELO	–	–	–	–
	TKF	–	–	–	–
	T1	–	–	–	–
	T2	–	–	–	–
	T3	–	–	–	–
	T4	–	–	–	–
	L0	–	–	–	–
	L1	–	–	–	–
	L2	–	–	–	–
	ENDL	–	–	–	–
TVA LEVEL	LEVL	100	100	100	100
	VELO	+25	+30	+35	+40
	BP 1	–	–	–	–
	BL 1	0	0	0	0
	BP 2	–	–	–	–
	BL 2	0	0	0	0
TVA ENV	VELO T1	0	0	0	0
	TKF	0	0	0	0
	T1	0	0	0	0
	T2	–	–	–	–
	T3	–	–	–	–
	T4	–	–	–	–
	L1	100	100	100	100
	L2	100	100	100	100
	SUSL	100	100	100	100

KAWAI K3 — SWELL PAD

	PAR	VAL		PAR	VAL			PAR	VAL		PAR	VAL			PAR	VAL
OSC	1	18	VCF	10	53	VCA	LFO	19	31	LFO	25	1	TOUCH SENS		31	6
	2	16		11	0			20	0		26	48			32	7
	3	0		12	3			21	26		27	25			33	0
	4	4		13	9			23	31		28	5			34	7
	5	2		14	15			24	15		29	0			35	0
	6	0		15	23	KCV		37	8		30	0			36	0
	7	6		17	19			38	-15							
	8	0		18	18			39	1							
	9	-3														

TX81Z — CLICK HARP

	ALGORITHM		2		
	FEEDBACK		0		

		OP 1	OP 2	OP 3	OP 4
	FREQUENCY	1.00	1.00	8.00	11.30
	OSC WAVE	1	2	1	4
	DETUNE	-3	+3	0	0
	OUT LEVEL	99	60	60	82
EG	AR	18	20	9	27
	D1R	7	13	7	24
	D1L	15	4	15	2
	D2R	5	0	0	0
	RR	4	3	1	4
	EG SHIFT	OFF	OFF	OFF	OFF
SCALING	RATE	2	0	0	0
	LEVEL	0	0	0	0
SENS	PITCH		4		
	AMP (0-3)		0		
	(ON-OFF)	OFF	OFF	OFF	OFF
	EG BIAS	0	0	0	0
	KEY VELO	0	0	0	0

LFO	WAVE	TRI
	SPEED	31
	DELAY	17
	PMOD DEPTH	48
	AMOD DEPTH	0
	SYNC	OFF
FUNCTION	MODE	POLY
	PBEND RANGE	4
	PORT	FULL
	PORT TIME	0
	FC VOLUME	40
	FC PITCH	0
	FC AMP	0
	MW PITCH	99
	MW AMP	0
	BC PITCH	0
	BC AMP	0
	PC PITCH BIAS	0
	BC EG BIAS	0
	MIDDLE C	C3
	REVERB RATE	OFF