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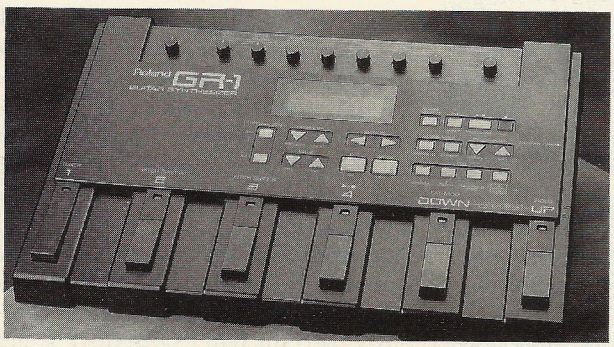
Roland GR-1 Guitar Synthesizer

By Michael Molenda

Finally, a MIDI guitar workstation that won't bust your chops.

My aversion to guitar synthesis can be summed up in two words: *Total Recall.* That's the name of a movie in which Arnold Schwarzenegger is subjected (clandestinely) to a mental overhaul that makes him believe he's someone he's not. What a mess! Poor Arnold doesn't know whether he's a freedom fighter, a government agent, or a simple construction worker. Few things are as terrifying as losing your identity. And that's why I've always hated guitar synthesizers.



Roland's GR-1 uses voltage, rather than MIDI, to trigger its onboard sounds from the GK-2 pickup, evading tracking delay problems. Its MIDI Out also lets it control external synths and signal processors.

In the past, playing a guitar synthesizer meant tossing away your identity as a guitarist in exchange for a new tonal frontier. At best you were forced to conceptualize sound like a (ugh!) keyboardist, and at worst you had to give up your own axe to play a dedicated guitar controller. But that's not all. The mercurial pitch-tracking of most units often denied guitarists the basic tricks of their trade, such as bends and hammer-ons. Even Faust wouldn't make this deal.

But Roland's GR-1 changes everything. The unit is arguably the first guitar synthesizer designed to expand a guitarist's horizons on his or her own terms. You can use your favorite guitar as a controller; perform bends, trills, and hammer-ons without fear; edit patches in real-time, with actual knobs; and change programs (and some parameters) stomp box-style. It's the first guitar synthesizer I'd consider making friends with.

THE BASIC TOUR

The GR-1 is the guitarist's equivalent of a keyboard workstation. It offers 200 internal sounds (Roland calls them "Tones"), expandable to 400 with an optional internal expansion board; 64 user memory locations; a 4-track, 2,000-note sequencer; and onboard signal processing (reverb, chorus, flanging, and short delay).

Cosmetically, the GR-1 looks no different than familiar, floor-controlled, multi-effects units. Any guitarist who can program one of these grand stomp boxes (or a rack-mount signal processor) should be able to simply plug in and play. The intuitive layout prompted me to muddle through the unit *sans* manual. Within twenty minutes, I was able to figure out enough features to audition the GR-1 for the engineers at my recording studio without looking completely incompetent. (However, the GR-1 is quite deep, and comprehensive use requires aid from the surprisingly well-scripted manual.)

The front panel is distinguished by six sturdy pedals that—depending on the chosen mode—select programs, effect real-time pitch shift and hold functions, enable the onboard guitar tuner, or start/stop the internal sequencer. A switch on the Roland GK-2 pickup that drives the synth from your guitar (more on this later) selects the pedal mode. Well-labeled control buttons handle the majority of editing and sequencing commands, but limited real-time sound-editing can be enacted via knobs (the guitarist's friends) located at the top of the unit. All functions are shown on a bright, easy-to-read LED display that combines alphanumeric information, patch numbers, and status lights.

In the rear are the power-supply jack; power switch; MIDI Out and In jacks;

PETER DIGGS

the GK-2 port; two external pedal jacks (for volume and expression pedals); an unprocessed, ¼-inch, mono Guitar Output; ¼-inch, left/right effects-return jacks (Roland calls them Guitar Returns because the effects send is considered to be the Guitar Output routed to an external signal processor); ¼-inch, left/right stereo output jacks (left is mono); and a ¼-inch, stereo headphone jack. A side-panel slot accepts optional memory cards.

THE SETUP

Despite all the fancy controls and the promise of things to come, nothing happens until the performance gestures enacted on your guitar are sent to the GR-1. The messenger is the optional GK-2 Guitar Synthesizer Driver. (The GR-1 is sold without this essential component because the GK-2 also works with Roland's GR-50 guitar synth.)

The GK-2 assembly comprises a pencil-thin hex pickup containing six individual pickups for each guitar string. A control pod includes a ¼-inch input jack for the regular guitar signal; the output jack for the GK-2 cable; a power-indicator light; a synth volume knob; and a switch that outputs guitar only, synth only, or a mix of the two signals (the levels of which are set by adjusting the GK-2's synth volume and the volume on your guitar). Switches S1 and S2 move the GR-1 between Pedal and Play modes and act as increment/decrement buttons when the GR-1 is in Edit mode.

The GK-2 must be attached to your guitar, and two options—screw-on or double-sticky pads—are available. I opted for the less-permanent option, as Roland still owns the review unit. Luck was with me: Installation took just a few seconds, and the pickup tracked perfectly. However, some guitars may take a few adjustments before optimum tracking is achieved.

CUTTING TO THE CHASE

I could continue describing the GR-1's features, but I can feel you're getting antsy. I realize that most guitarists only *really* care about the GR-1's playability. So calm down; here's the scoop.

Pitch-tracking for the internal sounds is triggered via direct voltage, which allows lightning-fast and accurate note translation without the time delays associated with MIDI guitar synths. But the GR-1 is not an isolationist; expandability is ensured via the unit's MIDI In and Out facility (and the optional SR-GR1-01 expansion board). If you use the MIDI ports to access outside sound modules, you will encounter the slight signal delays necessary to translate performance gestures and string vibrations into MIDI information.

Although pitch-tracking in this type of design necessarily involves translation delays, I wasn't aware of any drop-outs as I ran through the GR-1's guitar, bass, and brass sounds. I played full-fretboard scale runs clocked to a metronome at 160 beats per minute without note glitches or false triggers. (Okay, I'm no Al DiMeola.) I even performed rapid, single-note, flamenco trills—although I cheated by using a pick—and every note seemed to ring through.

Next, I performed a series of bends into hammer-ons into trills, and when my technique was clean enough, every nuance was faultlessly translated. I even got ridiculous with the whammy bar and achieved reasonable results. (Although the synth sound dropped off if the string tension—or lack thereof—was too severe.)

In Play mode, the GR-1's pedals become real-time performance controllers that effect pitch shifts and several hold functions. Pitch-change parameters can be programmed to sweep up or down to a preset pitch, or sound instantly. The limits are one octave up and two octaves down from the fundamental note. All pitch and hold features are enacted very musically—no annoying clicks or mutes are audible—and pitch sweeps are performed with minimal zipper noise.

Anytime I played the GR-1's basic patches, my normal performance technique remained uncompromised. Obviously, certain patches require some adjustment of style: It's unreasonable to expect Slow Strings to match blistering picking lick for lick. (Although it was fun trying.) However, in a fair fight, I couldn't trick the GR-1 into mistracking.

Using external sound modules (a Roland D-550 and an Oberheim DPX-1 sample-playback unit) required MIDI translation between the GR-1's internal pitch tracking and the receiving units, which resurrected a few of the old guitar-synth bugaboos. Occasionally, notes performed on the low E string failed to sound, and rapid scale runs produced noticeable glitches. Lush patches, such as strings and synth pads played at moderate tempos, were more successful.

The GR-1's MIDI capabilities are limited, but I found them sufficient. The instrument can send Program Changes and Velocity. Real-time parameter changes can be performed via MIDI General Purpose Controller 16, and an optional expression pedal sends Modulation (Controller 1) messages. The sound module supports sustain pedal messages via MIDI, but there is no sustain pedal jack. Fortunately, the GR-1 recognizes All Notes Off and supports SysEx load and dump.

There are times when the GR-1's programming power *did* seduce me to adapt my playing technique. For example, I could use velocity-switching to change Tones simply by picking harder or softer. In addition, the GR-1 allows velocity mixing, where a Tone sounds continuously until harder picking mixes in a preselected second Tone. Programming Tones and matching sensitivity to pick dynamics isn't difficult, and I never heard a glitch.

PATCH WORK

I'll say it up-front: I liked the GR-1's sounds. A studio client lamented that most of the sounds were not robust, and indeed the GR-1 is *not* a killer sound module. However, the GR-1's facility for layering and editing internal sounds promotes sonic sculpting. That is, if you don't mind twisting a few knobs and/or patrolling some nested parameter menus.

Product Summary

PRODUCT:
GR-1 Guitar Synthesizer
PRICE:
GR-1 $1,295
GK-2 pickup $199
MANUFACTURER:
Roland Corporation
7200 Dominion Circle
Los Angeles, CA 90040-3696
tel. (213) 685-5141
fax (213) 722-0911

EM METERS	RATING PRODUCTS FROM 1 TO 5
FEATURES	● ● ●
EASE OF USE	● ● ● ●
PLAYABILITY	● ● ● ● ◖
VALUE	● ● ● ◖

If simplicity is paramount, you can call up one of the 200 PCM-based Original Tones. Most of these Tones are clean representations of actual instruments. For the most part, strings, basses, brass, and woodwinds sound nice, while the acoustic pianos and some of the GR-1's guitar Tones are too thin for my taste.

The synth offers a few basic sound-editing parameters. The Guitar section Tones use an attack-sustain-release amplitude (volume) envelope that is programmable from a front-panel knob. Other knobs control the filter's cutoff frequency and resonance and the vibrato rate and depth. However, the real kick is combining two Tones into a Patch. A little fearless imagination can produce absolutely huge pads and searing lead sounds.

The "in-house" reverbs, chorus/flange, and short delays won't deliver lush timbres, but they're fine for adding a little presence to your patches. There are six reverbs (three rooms, two halls, and a plate), one simple delay, and a panning delay in which the repeats alternate between the left and right channels. Parameters include the number of repeats (feedback) and reverb time and level. It's also a simple matter to set level, depth, rate, and feedback for the chorus/flange effects. You can commit 64 of your sonic creations to the GR-1's internal memory and an additional 64 patches on an optional memory card.

In addition, the GR-1 allows a limit of two Tones to be assigned, layered, or split anywhere on the guitar. You could play a slap bass on your sixth and fifth strings and a saxophone on strings 1, 2, 3, and 4; or you could set up a complex layer where the slap bass remains on strings 5 and 6, but the other strings perform a sax Tone with some slap bass mixed in.

Maximum polyphony is 24 voices. The GR-1 also offers a Voice Reserve function that prevents random note-stealing if you use up all the voices recording parts to the internal sequencer (or an external module). For example, you could ensure the Rhodes Tone that restates a song's hook always has two voices. Reserving its voices should prevent the important motif from disappearing when your polyphony hits the wall.

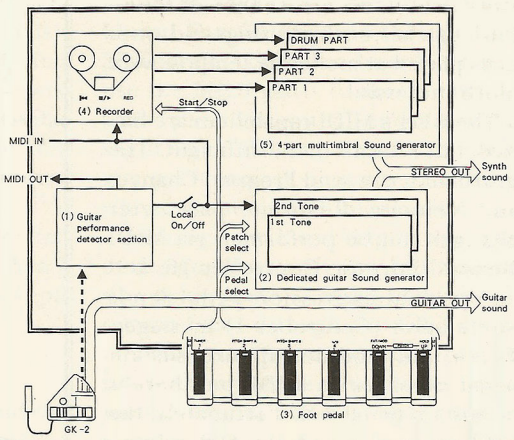


FIG. 1: The GR-1's internal hierarchy. Note that the guitar section and onboard sequencer have completely independent sound generators. (Courtesy of Roland Corporation.)

THE SEQUENCE OF EVENTS

The GR-1 includes a rudimentary sequencer that records four tracks (three instruments and a drum part) to match its 4-part multitimbral sound module. The sequencer has a dedicated bank of Original Tones at its disposal—called the Multi-Timbral section—that, unlike the Tones available in the Guitar section, cannot be edited or layered. Also, you cannot record any of the more-complicated Guitar-section patches into the sequencer. (Of course, you *can* record the Guitar-section patches into an external sequencer.) Basic song-editing functions include copying, quantizing, erasing, and deleting parts for each track.

As a notebook, the sequencer works just fine. The limited Tones are serviceable as tonal "place holders"—if you take a song sketch a higher level, you probably will replace the sounds—and the drum sounds are tough enough for demos. When I forgot my Recording Walkman at a band rehearsal, the GR-1 saved the day because I could record a new song arrangement into the sequencer.

Although the GR-1 allows you to record drum parts from the front panel, the keys are not velocity-sensitive, which is a minor drag. (The drums *are* velocity-sensitive when triggered from the guitar.) And because the GR-1's internal memory only saves one song at a time, you're stuck paying for an optional memory card when your demo repertoire expands beyond a single tune. This is an expensive method of data backup, especially when the memory cards also are maxxed out at a single song. Of course, the GR-1 allows you to dump your sequence to an external sequencer or data filer, but this can be inconvenient and frustrating if you have a run of inspiration and no such beast is available.

NO MIXED MESSAGES

Quibbles aside, the GR-1 is truly an instrument that respects the heritage of the guitar. That's important. Roland's sensitivity to guitarists may do more to advance guitar synthesis than any impending technological breakthroughs. The GR-1 allows us old codgers to meet the future on our feet.