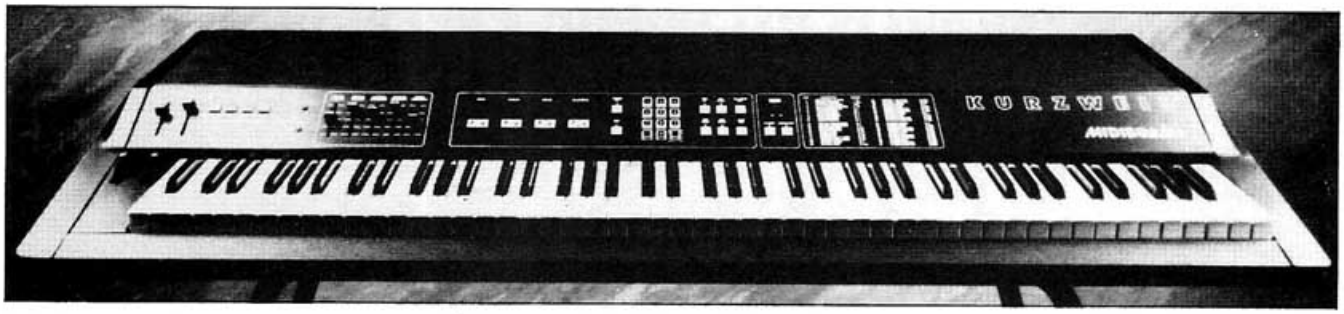
Keyboard Report

Dave Frederick



kurzweil midiboard & 150 expander

VERY FEW ISSUES IN THIS WORLD ARE yes or no, black or white, right or wrong. We want to be as objective as possible, presenting the facts so that the reader can make an educated purchasing decision. And yet, we must also offer opinions, subjective responses to our own experience with a particular instrument. The more complex the instrument is, the more likely it is that one person will feel different about it than another. Very few musical instruments have achieved the lofty status of being accepted as the standard against which others are judged. Still, as great as a Stradivarius violin or a Steinway piano is, there are still individuals who, for one reason or another, don't see what all the fuss is about.

Which is another way of saying that some people will like the Kurzweil Midiboard and 150 expander more than others. The people at Kurzweil have always had strong ideas about what a keyboard instrument should be able to do, and how it should feel and respond. The Kurzweil 250 demonstrated that an electronic keyboard doesn't have to feel like an organ, and that it's okay to offer preset instruments when those instruments sound as good as the 250's. But not everyone can afford a 250. Now Kurzweil has put a weighted keyboard in a MIDI controller and a new type of sound modeling process into a rack module. Both of these are within the monetary grasp of the average electronic keyboard musician.

Midiboard

THE MIDIBOARD IS DESIGNED TO OFfer a piano-like feel and response and complete MIDI control over the rest of the instruments in your setup, and still to allow you to make minor adaptations to special circumstances without having to reprogram the entire controller configuration. This makes it very powerful; a host of synthesizers and outboard effects can be configured and controlled with the touch of one preset button. It's also very easy to program. Once you learn what the various controls do, you should be able to alter parameters on the fly.

Controls. The one control you'll be using most often on the Midiboard will be the weighted, solid key, 88-note, *A*-to-*C*, velocity-, mono pressure-, and poly pressure-sensing keyboard. We can't say this keyboard feels like you're hitting strings when you play it, but it is one of the best-feeling keyboards in the electronic market today. This could have easily become our favorite keyboard—but when we connected the MIDI output to a sound source, another factor of keyboard design became apparent: the response. Kurzweil has created an action with a fairly bouncy keybed, which facilitates key repetition, but also proves to be a hindrance if you tend to play off the keys or with a light touch. What happens is that when you play a note softly or near the inside of the keyboard, the initial throw of the key is sufficient to provide the desired velocity, but the key bounces very slightly and immediately sends another note at a very low velocity. The effect is that the note is choked. It sounds as if someone suddenly put their hand on the strings of a piano. This happens only occasionally, but it is not easy to avoid. A touch response control is included in the unit (see below), but we still experienced the problem even at its lowest setting. Players who hit hard may never experience this phenomenon, and therefore will not have to change their playing style. We had to alter our touch drastically, concentrating on playing the outside ends of the keys and maintaining force after the key was played. Rock players should be fine, but classical players should try it out on several pieces first before making a commitment.

The controls on the instrument deal with configuring and recalling keyboard and controller setups. They're arranged very comfortably and logically across the front panel of the instrument. The two spring-loaded center-return controller wheels at the left end of the keyboard take a little getting used to; you just have to reach farther than on most instruments. The wheel mode control allows you to set whether the wheel will be used like a pitch-bender—that is with a range of 0 to 127 in one direction with 64 as the rest position—or as a mod wheel with its point of rest equal to 0 and a range of 127 in either direction. These wheels, as well as the two control sliders on the panel just above them, the four control buttons just to the right of the sliders, the two control pedals, and the footswitch, can all be assigned to any MIDI controller number. Controller assignments

Midiboard

Keyboard: 88-note, *A*-to-*C*, weighted action with adjustable attack, release, touch, pressure, and retrigger response; attack and release velocity, monophonic and polyphonic pressure sensitivity.
Memory: 99 setups, 10 MIDI lists, 89 instruments. Each setup includes a total of eight MIDI lists or instruments and two split points.
Interfacing: MIDI in, two outs, thru, two control pedal (sweep type) inputs and voltage outputs, dual switch pedal in, cassette in and out.
Features: 12 user-assignable switches and controls, all-notes-off and tune request buttons, instrument solo and mute, adjustable keyboard response, MIDI in for remote controller operation, all omni button for immediate access to all instruments on line.
Dimensions: 53½" x 20½" x 5¼", 74 lbs.
List Price: $2,495.00.
Contact: Kurzweil Music Systems, 411 Waverley Oaks Rd., Waltham, MA 02154; (617) 893-5900.

can be different for each Instrument (what Kurzweil calls a channel, its program number, and 40 other parameters we'll cover below).

Since the wheels are spring-loaded, they aren't a good choice for controls that you need to set and forget, such as volume and portamento rate. The sliders are a better choice for these applications. Control pedals (sweep type) also can be used. The control buttons are good for controls that you want to trigger temporarily, or turn on or off and leave that way. They can be programmed to operate in toggle mode (push for on, push again for off) or momentary mode (push on, release off). Buttons (and the footswitch for that matter) don't necessarily have to be used to control only on/off controllers such as portamento on/off, or command controllers such as sequencer start. They can also be used to send two different programmable values for a continuous controller such as volume. Let's say, for example, you want to occasionally switch the volume of one of your slave instruments between two specific pre-determined levels. The Midiboard allows you to set a destination, a data byte for the on position, and another for off. Here's another example: We wanted to use a Yamaha sustain pedal, which is wired backward from what some brands of keyboards require. By assigning the switch on value to 0 and the off position to 127 (reversing normal operation), we were able to re-invert the polarity of the switch so that it worked fine.

Programming. Of course, all of the functions we've discussed so far are programmable. Now let's take a look at some of the other programmable functions. The 42 individual parameters are stored as a group and referred to as an Instrument. You can create and store up to 89 instruments. In addition to the controller parameters discussed above, each instrument includes a MIDI channel, a program number, a semitone transposition of ±99, and which region(s) will trigger notes. An instrument can include mode information such as omni on or off, mono on or off, and how many channels are required for mono mode operation. Each instrument's velocity, poly pressure, and after-touch can be enabled or disabled.

You can also create up to 10 MIDI lists, strings of specific MIDI data, that can include anything from notes to system-exclusive commands. A MIDI list can contain up to 30 bytes of data. Since the first byte refers to how long the message will be, and the second byte determines the MIDI channel, you actually have only 28 bytes available for your message. You had better know your MIDI stuff if you plan to start creating and editing MIDI lists. The manual of the destination instrument may give you information on its system-exclusive data format, but you could find yourself calling the manufacturer for more specifics.

A total of eight instruments and lists can then be combined with two split points to create what Kurzweil refers to as a Setup. There can be up to 99 setups in memory at one time. Once a setup is defined, you can still edit or add information to individual instruments and MIDI lists. Also, setups can be stored in three performance groups called banks for quick retrieval. The normal procedure for calling a setup can take as many as five keystrokes, but using banks cuts it down to two. All the information stored in memory can be off-loaded to cassette.

Other Controls. There are a number of dedicated controls on the front panel. These are provided so that they can be accessed and changed easily, either during programming or during performance. Probably the most obvious ones are the five keyboard response sliders. These allow you to adjust the response of the keyboard to fit your playing style or the needs of the instruments you're slaving. However, they're not programmable. Attack and release velocity can be adjusted from full range to almost no change no matter how quickly you play. The touch control determines the force you must use to make a key sustain. Even though the manual warns of the bouncing effect and advises setting the touch control all the way down to avoid double-struck notes, we still experienced them occasionally with the control in that position. The pressure sensitivity slider permits you to determine the amount of pressure needed to produce an effect. Finally, the retrigger threshold slider determines at what amount of pressure the note will be replayed. This means that you can replay a note without lifting your finger off the key. Although this is an interesting effect, and works well for sustained trills and arpeggiating chords, it's extremely difficult to control, and you'll probably only use it occasionally.

There are also buttons which allow you to send all-notes-off and tune request commands, mute or solo the instrument being edited, place all instruments in omni mode (provided they respond to mode messages), and enable or disable the MIDI in port so that remote keyboard information will be passed through to the MIDI out port on the Midiboard. The Immediate Access button allows you to quickly examine and change preset numbers for any MIDI channel.

Conclusions. In terms of real-time control over MIDI data, the Midiboard is one of the most capable master controllers available today. The configuration options for sliders, wheels, buttons, and pedals are really wonderful, and easy to program as well. Polyphonic after-touch takes a little getting used to, but it allows you to create some really stunning effects (provided the instrument you're controlling responds to poly pressure). The front panel is clearly organized, and a breeze to learn. In terms of keyboard response—well, you'll have to make your own determination. We found the response inconsistent and more than a little frustrating. You may not. The Midiboard isn't the most portable item either; it's well suited for remaining in one place. But it's solidly built, and should withstand normal road use and abuse. Those who like it will love it.

150

THERE HAS BEEN SOME CONFUSION AS to just how the sounds in the Kurzweil 150 got there. The 250 uses high-resolution sam-

KURZWEIL

pling, but the 150 employs something Kurzweil calls Contoured Sound Modeling. This is a process of resynthesis, in which a sample is fed into a computer. The computer divides the sound into its component harmonics and then recreates the sound using one sine wave per harmonic and altering the amplitude of each sine wave over time. It's essentially computer-controlled additive synthesis. The concept of the 150 is to allow you to build up performance sounds using these sound models of complex evolving waveforms rather than simple sine, sawtooth, and square waves. These sounds can be layered, detuned, mixed, chorused, vibratoed, and equalized, but not actually altered. There are slots for extra voices, which will be available soon, and we're told that eventually there will be a way to transfer sounds created with Digidesign's Softsynth Macintosh program (reviewed on page 149 of this issue) into the 150. But for now, the sounds you get in the 150 are the sounds you will use.

Controls. On the front of the instrument are a pair of twelve-key pads. One of these pads selects functions and features, while the other is used for direct data entry. We find flush-mount buttons like these slightly uncomfortable, although many people don't. One other uncomfortable aspect is that the increment/decrement and previous/next button sets are arranged backwards. The increment and next buttons are placed to the left of the decrement and previous buttons. This may seem like a petty complaint, but when you have to use these buttons for almost every editing function and you find yourself consistently pressing the wrong button, it becomes an issue. We liked the fact that the master volume of the unit is controlled via a pot on the front panel as well as MIDI control commands. The large orange LED display can easily be read from any angle and even from across the room or in bright light.

Programming. The 150 is set up in layers. A layer consists of a sound and its specific sound modifiers, such as tuning, transposition, EQ, and so on. Up to seven layers can be combined and mixed on any one of three keyboard regions. So it's possible to have

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Description: Rack-mount preset additive synthesis voice module.
Voices: 16-voice polyphony.
Memory: 255 programs consisting of up to three regions of seven layers each.
Interfacing: MIDI in, out, thru, 1/4" audio out, 1/4" headphone out.
Features: Built-in modeled sounds, up to three regions per program, chorus, vibrato, EQ, non-equal tempered intonation, velocity mapping, MIDI controller mapping, up to three program lists, timbre shift,
Dimensions: 19" x 7" (four rack spaces) x 17", 45 lbs.
List Price: $2,995.00.
Contact: Kurzweil Music Systems, 411 Waverley Oaks Rd., Waltham, MA 02154; (617) 893-5900.