SIEL DK 600 & EXPANDER

FIRST IMPRESSIONS can be misleading. At first glance, the Siel DK 600 looks to be just another no-frills 6-voice programmable polyphonic synthesizer. Its voice is fairly unremarkable — two DCOs, a 24dB/octave filter, a single ADSR, and three LFOs. However, glancing over the panel, you might notice that it says *dynamic* ADSR. A little further investigation will reveal that the instrument sports a velocity-sensitive keyboard with adjustable sensitivity, which is certainly not a feature that you see in this price range (under $1,300) every day. The instrument gives you 95 on-board programs, and can be expanded via MIDI.

This month, we take a look at both the DK 600 and its sister Expander, which is virtually an exact duplicate of the 600, minus the keyboard and external controls. All programming is handled remotely by the DK 600's panel. Programs are first set up on the DK 600 and then transferred to the Expander. The combination of DK 600 and Expander gives you access to split and layered keyboard modes, which makes for some very expressive possibilities.

The Keyboard. This is an unweighted 5-octave C-to-C velocity-sensitive keyboard. The feel is a little light for our taste, but still responds well. The velocity sensitivity is adjustable in that you can select four levels—high sensitivity, two medium levels, and a lower dynamic response. The level of responsiveness will be the same for each voice, but the actual sound of the response will change depending on the type of envelope settings used. You can use the velocity sensor to control the ADSR level and/or the attack time. Velocity sensitivity is lost on many analog machines, but the effect on the 600 is very pronounced, and can be used to great effect. If you hold down more than six notes on the keyboard, the microprocessor will steal one and only one of the first six to sound any subsequent notes. This is an ideal system for playing leads above a sustained chord.

Programming. A two-digit LED display is used to indicate what program is called up. There are 10 switches, labelled 1-0, used to access the 95 on-board programs (00-94). An eleventh switch is used to activate a live front panel mode. However, when this function is used, the panel goes into a default mode. The oscillators always come up with no waveforms selected, and the ADSR routing switch is off. This is different than the system found on most synthesizers, where the switches all retain the values they had when you switched over to live mode. Thus you can't get two patches for the price of one by switching back and forth between a preset and the live panel. A small limitation, but one to be aware of.

You might wonder what happens when you call up programs 95, 96, 97, 98, or 99. Well, 95 is used to toggle on and off the record protect function. 96 does nothing at the moment, but may be assigned a function in future software updates. 97 is for setting the keyboard split point when the instrument is used with an Expander, 98 calls up the velocity sensitivity level-select function, and 99 does nothing.

The Front Panel. At the top left of the panel are pitch-bend and modulation wheels. The range of the pitch wheel is plus or minus about a minor third — it actually seemed to fluctuate a little between a major second and a minor third. The center detent on the instrument we looked at was all but non-existent, but there is a dead band, so you don't need to worry about playing out of tune after a bend. The wheel can be used to control either oscillator by itself, or the two together — a nice addition that would have meant more if one of the oscillators could be synced to the other. The mod wheel can be used to control the depth of modulation from either LFOs 1 and 2 and/or LFO 3.

The three LFOs are divided into two sets of panel controls. The first set is for adjusting LFOs 1 and 2 simultaneously. These put out sine waves that can be used to control the frequency of DCO A and/or B. Depth and speed controls are provided. The range of the LFOs is wide enough to get into some low-level audio frequencies, so you can add some bite to the sound with them. While the frequency and depth of modulation of LFOs 1 and 2 are controlled from the same knobs, they are actually separate (not phase-locked) LFOs; LFO 1 modulates DCO 1, while LFO 2 modulates DCO 2. Since this is your vibrato source, the vibrato in any two-oscillator patch will move in and out of phase with itself every few seconds — a subtle but audible effect that you may or may not like. The third LFO outputs triangle and square waves, which are available simultaneously if desired. This third modulation oscillator is used to control the pulse widths of the two audio oscillators and/or the cutoff frequency of the

VCF. Having a separate LFO for these functions is a nice addition for getting a fatter, chorused-type sound.

There is a pink noise source, which sounded quite digital to us. There are distinct clicks in the noise pulsing at a regular rate, which if you're picky may drive you nuts. Then again, you may never even notice it.

The oscillators are DCOs, digitally controlled oscillators. This means that you can't get effects like polyphonic glide or hard syncing. However, they will be rock-stable once set to the pitch you want. As we've mentioned, there are two DCOs per voice. DCO A's controls include 16', 8', and 4' octave settings (only one octave available at a time), sawtooth and pulse waves available simultaneously if desired, and an initial pulse width control. Pulse width is variable from about 1% to 99%. DCO B features 16', 8', and 4' octave settings, simultaneously available sawtooth and pulse waves, a pulse-width control, a switch for lowering its volume 6dB in relation to DCO A, and two tuning controls — a fine tuning control and a coarse tuning control, the latter having a range of a tritone down. You cannot tune DCO B above DCO A unless you set the octave control to a higher octave and then tune down.

There is a separate 24dB/octave 4-pole filter for each voice. It features the standard cutoff, resonance, and envelope amount controls, as well as a keyboard track switch that turns 100% of the keyboard control voltage on and off. The filter will go into oscillation, so you can use it as a third oscillator if you want to.

The dynamic ADSR can be routed to either the filter, the VCA, or both. When the ADSR is not controlling the VCA, the instrument produces a straight key on/key off organ envelope. You can use the velocity sensitivity from the keyboard to add to the maximum envelope amplitude and/or decrease the attack time. What this means is that you can have the velocity affect the filter or the volume by choosing

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SIEL DK 600

which to route the ADSR to. When you choose to control attack time with the velocity, hitting a key slowly will produce a longer attack. Hitting a key fast will produce a faster attack. The velocity sensitivity is polyphonic, so you can affect individual notes. You can bring out different lines as you would on a piano with this feature, which allows for some very expressive playing.

The front panel also contains master volume and tuning controls, along with a switch that controls a few MIDI functions. It's labelled INT and EXT for internal and external. Like many of the switches on the front panel of the unit, this has two red LEDs next to it to show you what its setting is, and hitting the switch rotates among three different settings — A, B, or A and B. What the INT and EXT functions do is allow you to send or receive program change information to or from an external MIDI-equipped instrument, such as the Expander, which we'll get to in a minute. When you set the switch to internal, you can change the other synthesizer's programs. When it's on external you can change the DK 600's programs remotely. When it's on internal/external, you can change both instruments' programs simultaneously. By change programs, we don't mean alter parameters or anything like that, although it is possible to do this with Siel's own expander. By change we mean step to another program.

The Back Panel. Included on the rear panel are MIDI in and out DIN jacks, VCA and VCF control input jacks (unfortunately, these are also 5-pin DIN jacks, which means you're going to have to have special connectors made for any unit you want to use as a control voltage source),

tape to and from 1/4" jacks for the cassette interface, the power switch, a mono audio output, a fuse, and a detachable power cord.

MIDI Expander. This unit is a box that contains virtually the same 6-voice polyphonic synthesizer that's in the DK 600, except for the keyboard and front panel controls. That means that all programming is done by setting up the patches you want on the DK 600 and then offloading them via MIDI to the Expander. We're told that software will soon be available for programming the Expander from a Commodore 64 computer. Therefore, the front panel of the Expander is simplicity itself. There are 10 numeric switches that allow you to call up programs, a 2-digit LED display to indicate what program is called up, an enter switch to initialize the program you've called up, and a MIDI internal/external switch that functions exactly like the one on the DK 600: i.e., internal allows you to call up programs internally, external lets you call up programs on the DK 600, and internal/external lets you change programs on both simultaneously. Also included on the front panel are volume and master tuning knobs, and a non-programmable detune knob for DCO 2.

Connecting the Expander to the DK 600 or other Expanders is simple. MIDI in, out, and thru jacks are supplied on the back panel. Unfortunately, pitch-bend and modulation wheel information cannot be sent from the DK 600 to the Expander via MIDI. The rear panel also includes VCA and VCF control inputs (again, 5-pin DIN jacks, for what reason we'll never understand), to tape and from tape cassette interface jacks (1/4"), an on/off switch, an audio output, and a detachable power cord.

Conclusions. The velocity sensitivity on this

instrument really works well, although the feel of the keyboard doesn't support it as well as it might. The action on the instrument we reviewed didn't have as much resistance as we like. We're sure you could add tighter springs if this bothered you, though. The voice of the DK 600 isn't set up to give you lots of Twilight Zone special effects, but we did think the overall sound was quite solid and pleasing. The brass sounds were particularly nice when complemented by the velocity sensitivity.

Alone, the DK 600 would make a great start-up synthesizer. It's got a straightforward panel layout, and the functions aren't complex enough to confuse a novice. The only thing we'd recommend is that you read the manual in order to understand how to deal with toggling the write protect function on and off and how to select velocity sensitivity levels. Anyone with any experience will find the functions very easy to pick up. The addition of the Expander gives you some very useful split and layering capabilities, especially since you don't lose any voices when you layer the two units together. Six-voice polyphony is maintained. In split mode, you actually get 12 voices, six from the Expander on the lower part of the keyboard and six from the 600 on the upper part of the keyboard. And even without the Expander, the DK 600 has the features it needs to make it quite competitive with many of the relatively inexpensive polyphonics on the market.

The DK 600's dimensions are 16" deep, 7½" high, and 36¾" long. The Expander is 13¾" deep, 24¾" long, and 4¼" high. Prices are: DK 600, $1,295.00; Expander, $795.00. Siel is distributed by MTI, 105 Fifth Ave., Garden City Park, NY 11040. ◼