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MUSIC AT THE TOUCH OF A KEY

The new music package from Hybrid provides a highly sophisticated synthesiser.
David Johnson-Davies calls the tune

The Music 4000 keyboard is the latest component of the Hybrid Music System. It complements the versatile Music 5000 synthesiser, which uses a system known as Ample for music notation and control.

In the Music 5000 you enter music from the computer keyboard either in stave notation, with the *Staff Editor* program, or alternatively in the Ample program's own compact notation, devised by Hybrid for representing multi-part music and sounds, and into which every composition is ultimately converted.

The new Music 4000 keyboard is a far more natural and convenient way of writing music. You can now enter notes in real-time, directly from the keyboard. By means of some clever software, the end result is converted to exactly the same Ample notation used by the other Music 5000 programs, so that it can easily be integrated into larger Ample compositions, or edited with other Music 5000 programs like the *Staff Editor*, the *Mixing Desk* or the *Notepad*.

The Music 4000 is a four-octave piano-style keyboard with a good feel compared to some of the cheaper synthesisers currently on sale. It plugs into the micro's user port, and is supplied with new software which replaces the original Music 5000 disc. This new software adds recently launched programs to the main menu: *Keyboard* and *Recorder*. It also contains improved versions of the existing programs, enabling it to be used as a music input device.

All the programs are very easy to use, and have the usual convenient Music 5000 user interface, where most parameters are altered with the cursor keys and the Shift key; you seldom have to type in numbers, or even remember what the valid range of inputs is.

Many musicians may consider that the sounds available from the Music 4000 and 5000, quite apart from the music composition facilities they provide, will justify their purchase. The *Keyboard* program lets you play on the keyboard, and at the same time it gives you control over the choice of



The basic Hybrid Music System with the new Music 4000 keyboard

instrument, and several other aspects of the sound not found on more conventional types of synthesisers.

Two example files supplied with the software give menus of 90 or so pre-defined instruments, covering just about everything you would find on a synthesiser. The first of these example files, called 'general sounds', includes some good standard instruments, like a cinema organ, a more church-like organ, strings, a harpsichord, and one of the best electronic imitations of a piano that I have heard. There are also percussive sounds, like drum and cymbal, and some more complex sounds such as a complete orchestra, reminiscent of the symphonic sound at the beginning of *Sergeant Pepper's*, several synthesiser and Moog sounds, and a vocoder sound like a human voice.

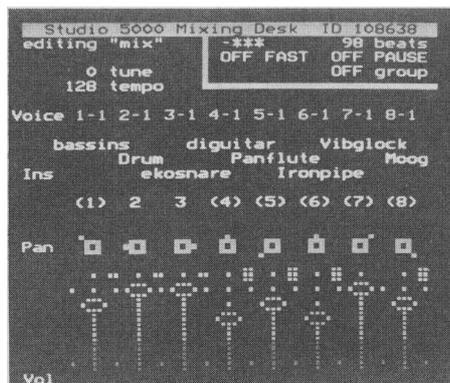
The second example file which is supplied, called 'special sounds', adds some more extraordinary effects including explosion sounds, and others best described as atmospheric. Although it's fun trying to guess what some of the more exotic sounds are from their abbreviated titles, it is a pity that Hybrid does not give a full list with

more detailed explanations in the manual. Having selected an instrument from the menu on the screen, you can play polyphonic music on that instrument. The number of notes that can be played simultaneously depends on the complexity of the instrument. Most instruments use two of the 16 channels, which means that up to eight voices can be played at once — a chord of eight notes can be sounded. The most complex sounds use all 16 voices, so if one of these instruments is selected only one note can be sounded at once. The keyboard comes with a foot switch which acts as a sustain pedal. For playing percussive instruments, the best effect is obtained by holding the pedal down so that all notes are sustained; a short lift of the foot pedal then acts as a damper.

If the pre-defined instruments do not give you quite the sound you want, you can edit and modify any of the definitions to create your own new instrument. The facility is the same as in the Music 5000 system, with the added advantage that you can now use the full range of the keyboard to try the sound you are designing. The keyboard interface provides six controls in

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Final mix-down of a recording

addition to the choice of instrument. These allow you to alter the effects created by the keyboard. And you can transpose the pitch of the whole keyboard up or down in units of a semitone.

A parameter allowing some quite unusual effects is Scale, which sets the pitch scale in 16th-semitone units. For example, setting Scale to -16 reverses the whole keyboard, putting the highest notes at the bottom; playing a familiar tune, by touch, on a reversed keyboard is quite thought-provoking. Setting Scale to eight gives a quarter-tone scale, allowing experiments in achromatic sounds.

Control of the stereo position of successive voices is provided by the Spread parameter, which takes two numbers, the position of the first voice, and the offset for each successive voice. For example, setting it to $-3\ 1$ spreads the eight voices from left to right across the stereo field.

The Split parameter is used for playing multi-instrument tunes, and allows each white key to be used to play a particular voice, rather than a different pitch.

Single-key chords

Perhaps the most interesting controls are Reduce and Expand. These can be used in conjunction to create arpeggios, chords, echos and other effects with a single key.

To program one of these effects you first switch the Expand parameter to 'on.' The function of the foot switch then changes. With the foot switch pressed you play a sequence or group of notes to specify the effect you want. Then, with the foot switch released, each note on the keyboard will produce the specified pattern, transposed by that note's position.

For example, by playing a chord with the foot switch held down, the transposed chord is played for every note on the keyboard. Alternatively, typing a sequence (of up to eight notes) will cause that sequence to be played as an arpeggio for every note you play, transposed by the position of that note.

The Reduce control causes the volume of the successive voices to be reduced, giving echo effects. For example, programming Expand with the same note repeated eight times and setting Reduce gives an echo effect, which can be spread over the stereo field with Split. Used creatively, the Reduce

and Expand controls enable a one-finger pianist like myself to create an extremely impressive sound.

Playing music on the keyboard, in synthesiser fashion, is just the beginning. The keyboard is fully integrated with the other Music 5000 modules, and can be used as a means of entering and composing multipart music. The music you create is stored internally in a universal notation used by all Music 5000 modules, and can be displayed and edited in staff notation, or in Ample's pure note letter notation. Furthermore, compositions created using the keyboard can be mixed in the *Mixing Desk* program.

The recorder comes complete with two pre-defined mixes, which can be used as a starting point for creating a composition. The advanced mix assigns six two-voice instruments to six players.

The recorder gives a metronome beat through the BBC micro's loudspeaker as a timing signal for playing a tune. You can either practise, using the Perform option, or record a part with the Record option. You then have the option of selecting 'Play original', which plays it back as you played it, or 'Play final', which adjusts the timing of what you played to the most likely whole time intervals. You can adjust this rounding effect with the Quantum setting, which is the smallest interval that will be represented in the final piece of music, but by making it too small you run the danger of getting a very complicated representation of what you probably intended to be a much simpler piece of music.

Having entered one part, it is converted into Ample notation and stored using a Make command (by pressing a function key). You can then record another part while listening to the parts you have pre-

viously recorded, just like multi-tracking in a studio. There are also several features which will appeal to those, like me, whose ambitions exceed their talent: you can record at a slow tempo and play back faster, and you can edit mistakes in any part or record a part in small sections for subsequent combination.

Ample notation

Because compositions built up part by part are converted internally to Ample notation, you can load the composition into the *Staff Editor* or *Notepad* at any time, and edit what you have composed using their respective facilities.

The Music 4000 keyboard can also be used to input notes to the *Staff Editor* and *Notepad*. In the *Staff Editor*, notes played on the music keyboard are sounded, and simultaneously appear in conventional music notation on the staff. The system even allows you to enter chords, which are displayed in the usual exploded way on the staff. The foot pedal is used for entering rests, or, if pressed simultaneously with a note, to lengthen its duration. Seeing the results of playing a keyboard instantly in staff notation must be one of the best ways of appreciating the meaning of conventional music notation.

With the addition of the Music 4000 keyboard it is possible to create music with very little knowledge, either of music notation, or of Ample notation, and I would recommend it to budding composers and musicians, or to any music lovers interested in exploring the many varied possibilities of music composition.

Despite the ease with which you can get started and create simple compositions, it is reassuring to know that the whole system is capable of the sort of performance that would easily satisfy a professional music maker, and I look forward to seeing the Hybrid Music System in the credits of more professional compositions.

The Music 4000 and Music 5000 together cost £330 inclusive; the Music 4000 alone (for existing owners of the Music 5000) is £169. Available from Hybrid Technology Limited, Unit 3, Robert Davies Court, Nuffield Road, Cambridge, CB4 1TP. A special amplifier, the Music 1000, is also available, and a Music 2000 MIDI interface has just been released.