SYNTHETIC FIBRE

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New Sounds, New Style
One of several new synthesisers in the DX range from Yamaha, the DX7 incorporates a method of building sound, FM synthesis, previously restricted to machines costing thousands of pounds. Instead of taking an existing sound and modifying it by passing it through filters or adjusting envelope controls, the DX7 creates it own complex sounds by combining six waveforms in a variety of ways. As a result, the DX7 approximates the sounds of acoustic instruments much more closely than other synthesisers. The DX7 also incorporates breath control, so a musician can blow into a receiver and add breath-like variations to saxophone or trumpet sounds, for example. The DX7 can use ROM packs with prerecorded sound characteristics, or it can store sounds you create on RAM packs. The DX7 sells for about £1,400

Of all the available microcomputer-based music systems, MIDI offers the widest range of applications. Musicians use the interface to upgrade performance capabilities, both live and in the studio. And MIDI offers the home computer owner a way into the world of electronic music.

In education, MIDI offers some very real advances, both in schools and in the home. Learning to read music is often difficult, even when the learner is already quite competent as a performer. The early stages of working out such things as sharps and flats and time signatures can be laborious and time-consuming, and the connection between the marks on the paper and what is actually heard rarely seems obvious.

A major part of the problem lies in the nature of music itself: in order to make any sense, it has to be a series of events occurring through time. If the only way that a beginner can keep track of the visual notation is to keep stopping the music in question, then all the time-duration indicators in the score become pointless. Similarly, the beginner may spend some time in trying to interpret a particular bar or sequence; while this is being done the music will have moved on to something quite different.

MIDI removes these obstacles. It can enable a synthesiser performance to be stored in a micro's memory and, with the appropriate software, will give a graphic display of the music being played. This is an invaluable aid to any music student — it means that if, say, a Middle C is played on the synthesiser keyboard, then a Middle C will be shown on the five-line stave on the display screen. If a B minor chord is held down for a certain length of time, the harmonic components of the chord — B, D and F — will be displayed, together with the appropriate duration.

This idea could be extended by software that plays a pre-programmed piece of music on the interfaced synthesiser while a fully notated score rolls by on the screen. In this situation, both the music and its notation could be stopped simultaneously and re-run from a specified bar number if the user encounters a problem. In addition, the overall sound of the music could be varied by changing the control parameters on the synthesiser — thus introducing the user to the art of arranging.

Once a degree of confidence in reading music has been attained, then it should be easier to write music with the aid of the alphanumeric computer keyboard. This may involve entering performance data without any immediate reference to a sound from the synthesiser and then testing the result against the original intentions. Once this more advanced skill is acquired, five-line stave notation could be discarded in favour of another system such as MCL (music composition language). For electronic music, an MCL is a more appropriate means of entering data as it includes specification of characteristics exclusive to electronic sound production. No standard has been developed for MCL application — each machine has its own MCL. Stave notation, although a useful