



GRAND FINALE

In this final part of the series, we look at some of the advanced systems that have appeared since electronic music began to incorporate digital technology. Many of these systems cost thousands of pounds, but there are signs that, as research costs are recouped and competition increases, drastic price reductions are on the way.

The single most significant recent development in electronic music has been in the area of digital recording. Not only has sound recording quality improved immensely, but the whole meaning of the word 'recording' has changed to embrace a number of different techniques. If we now understand recording to mean 'the digital encoding of sound and its organisation into music', then we can begin to grasp what is happening to music in the 1980s.

Since the Second World War, sound recording on magnetic tape has been the norm, with formats ranging from the tiniest microcassette up to the large spools of 24-track tape used in professional recording studios. When a recording is made on magnetic tape, the minute particles of metal oxide on the tape surface become rearranged in complex patterns that are analogous to the sound waveforms they represent. As the tape passes the playback head of a recording device, these patterns are converted into chains of electrical voltages. These voltages are then fed to the loudspeakers, which reproduce the sound recorded on the tape.

Because the arrangement of particles may be fairly accurately judged in relation to the tape playback head, it is quite easy to find where a particular sound is on a piece of magnetic tape, so the splicing and editing of tape with demagnetised razor blades has become an important skill to be acquired by sound engineers.

In digital recording, sound is encoded numerically along the tape, and the playback head becomes a digital-to-analogue converter. The loudspeakers are powered in the same way as before, but they use voltages generated by the D/A converter. Provided there is sufficient data for conversion, digital tape can produce reproduction that is greatly superior to that achieved with magnetic tape. And, as long as the data remains intact, the tape may be copied digitally hundreds of times with no loss of quality. With magnetic tape, however, each 'generation' of copying adds hiss and distortion to the recording.

This type of noise degradation has been a familiar problem for sound engineers for many



Synclavier

The Synclavier from New England Digital is considered one of the most advanced in the world. Apart from the usual synthesiser functions, the machine has the capacity to store up to 10 Megabytes of sound on disk.

Fairlight CMI

The Fairlight CMI was one of the first computer music systems. The Fairlight's operating system is menu-driven, allowing a variety of options from keyboard control to waveform drawing. The machine also has the facility to produce hard copy printouts.



Yamaha KX5

The Yamaha KX5's MIDI interface provides a link between synthesisers and the Yamaha CX5. This device will also be used to interface the Yamaha MSX home computer when it arrives in the United Kingdom.

Roland MSQ-700

The Roland MSQ-700 claimed to be the world's first MIDI-compatible sequencer. The MSQ-700 has a full range of MIDI facilities and can store up to 6,500 notes.



Drumulator

The Drumulator drum machine from Emu systems has a memory capacity of 10,088 notes within 64 songs. There are also facilities to allow the insertion of additional ROMs that provide additional effects such as Latin or African percussion.

HARDWARE COURTESY OF SYCO SYSTEMS
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