ELECTRONIC SOUNDMAKER & COMPUTER MUSIC
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NUMAN & SHARPE
The Odd Couple

FREE TAPE
60 MINUTES OF ORIGINAL RECORDINGS

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Reader's System

All on tape; plus more in the mag!
The Hungarian Revolution

S
uch is the planetary significance of ES&CM that I was no more than mildly surprised to receive a letter from Hungary a couple of weeks back. Purporting to be from two scientists-cum-musicians, Mr. Szalay and Mr. Korb, of the group Omega it announced the imminent launch of a hardware and software package for the ZX81, capable of giving it the kind of sampling and sound processing facilities previously found only on machines of megabuck proportions (1.6 secs. sample into 44k RAM, up to 37khz bandwidth).

At first, I suspected a wind-up along the lines of the IBM-Fright hoax of a couple of months back, but further investigations established that it was all for real; and a friend of the Hungarian’s London agent, semi-pro musician Chris Palmer, had the only working prototype in the country. First with the news as always, we arranged for him to come down to our recording studio to show us the gadget, the Muzik 81 Processor, and what it could do.

Even as we set about putting a piece together for the tape, however, news came through that the original concept had been extensively modified and updated, to run on a 48K Spectrum. What follows, therefore, is an overview of the whole system as it stands at the moment, followed by a closer look at two of the programs currently available for it.

The system will be based around a hardware add-on for the Spectrum, featuring rear connections for MIDI and CV/Gate in and outs, tape sync, tape in and outs, and signal in and outs. Top panel controls include a Gain pot (with L.E.D. overload indicator) for adjusting incoming signal levels. Feedback control (for reprocessing the signal), and Mix (for adjusting the balance of clean and effected outputs).

Version
The ZX81 version that I saw in operation required a 64k add-on (remember them — the Hungarians do), though the Spectrum version operates within the combined limitations of computer and Processor.

The range of software that is to be available for the system is quite staggering: I played around with the Simulator sampler, and the Audio Effects package (of which, more later), but also in the pipeline are a Composer package, offering 8 voice polyphonic sequencing to MIDI or analogue synth, with extensive editing facilities, save to tape, sync to tape, and optional score printout of completed compositions; a Drummer program, offering complementary rhythm composition utilising a variety of sources (A rumoured rack-mounting sampled percussion system, ‘slaved’ drum machines, or Simulator samples.) A comprehensive MIDI/Analogue converter, offering CV/MIDI/MIDI/ CV conversion, sync to tape and more (on paper at least, the equal of Korg’s KMS 30 Synchronizer); a Multisampler, offering up to six user-defined split points on a keyboard, with each resulting section capable of supporting a separate sound making a six-piece sampled drum kit.
possibility, for instance a DX7 Editor program and, perhaps most exciting of all, the
Digisynth digital synthesiser program, allowing the construction of 22 different
spectra consisting of 16 Fourier components from which six complex
waveforms can be evolve. Additionally, 16 user-defined frequency modulation functions
are defined, chosen for any wave and
completed sounds dumped to tape. Yes, we are talking F.M. here!
That’s all in the future though; back in the
here-and-now, we’ve connected the CV &
Gate sockets from the processor to an SH101
which we’re using as a keyboard controller,
and Chris is loading up the Simulator Sound
Sampler program. I ask him to take us through it.

Sample talks
“First up, you have the main menu screen,
offering you a top window with a range of
options selected by initial letters from the
computer keyboard — R for record, and so on.
Beneath that is another window, displaying
current status of the system, with sensible
default options for the various values.”

R-REC D-DISP T-TUNE P-PLAY
I-INS C-CKEY L-LOOP N-NR/L
V-TRIG U-USER B-BKND G-G/TR
S=<TR E-SAVE J-LOAD B-TR>

Menu screen from Simulator program

I notice that you’ve got a definable trigger
input. “Yes — so when you’re in record mode,
nothing happens until there’s something there
to record. It defaults to —10dB, but you can set
it to anything you want.”

How do you record a sample?
“Easy — connect your sample source —
mike or line — to the audio input on
the processor, adjust Gain so it clips the L.E.D. at
peak levels, and press Record. As soon as
Trigger level is reached, the machine records
your input. The screen goes blank during the
recording of your input, and returns to the Main
Menu when it’s complete. That’s it. You can press
Display (D) for a graphic read-out of the
sample in 37 millisecond chunks — which is
handy for checking that the level and
consistency of the sample was Ok, and for
helping with any editing.

“Next thing is to select a Center Key (C)
which will replay the sample at the pitch it was
recorded. You just follow the prompt on the
screen, and press any key on the SH101 you
want to be the center point of the sample. After
that, you can play up to one octave above
center, and down to any range — although
beyond about two octaves the run down tape
recorder effect as the sample is read out
slower hampers straight ‘musical’ applications.

“You then have to select Gate or Trigger
mode (Defaults to Trig) — Gate starts the
sample again only after all the keys on the
SH101 have been released. In Trig mode,
pressing a new key starts it from the beginning.
You select between the two by pressing ‘6’ on
the ZX. The sample can be played Backwards
(B) or Forwards (F), in Natural (N) or Loop (L)
mode. Natural simply plays the sample to the
end, but Loop can be used to create sustained
sounds. To help avoid glitching, you’ve got 3
options — Auto, which looks automatically for the best ‘match’ between two adjacent
segments of the sample, and joins them
together.”

(Surprisingly effective — it was the option we
used most).

“Manual, where you can listen to the sample
playing a note on the SH101, and step through
the sound in 1 or 10 byte steps, or Question,
where you were prompted to enter a ‘rough
guess’, in milliseconds, having used the
Display mode, perhaps.”

“If the sound was shorter than the space set
aside for it, you can chop off the silence at the
end using Truncate, a flexible endpoint
selected by the 5 and 8 keys on the ZX, and
displayed in milliseconds. This doesn’t get rid
of the sample beyond the endpoint though, so,
on a long sample, you can do some
sophisticated things — using Truncate and
Backwards, you could play half a sample
forwards, and then have its second half
reversed! Whatever samples you end up with,
you can then dump to tape.”

And the results? In a word, devastating. We
sampled a compact disc of Carmina Burana
(The Old Spice ad — Classically-trained Ed.),
electric bass, some guitar chords, drum
sounds — and everything came out crisp and
sharp — from an SH101 keyboard! I still can’t get
over the shock. One finger, and Whammp!
—a hundred voice choir!
Reluctant as I was to leave the sampler
alone, and leaving aside some of its more
esoteric options — keyboard rescaling, note
by note, for example—we next loaded the Effects
package, which offered, in the same sensible,
flexible and error-trapped format Echo (1 to
9999 msec, 10 user-definable memories,
freeze and unfreeze play live over a ‘frozen’
echo — full bandwidth up to 1390msec, with
an increasing trade-off up to 9999 msecs —
yes, a 10 second delay, which still retained
enough bandwidth to be useful for unfussy
sounds!), Reverb, which allows two
independent delay lengths of up to 1460 msecs
to be set up, simultaneously, complete with
independent phasing; Transposer, again with
9 user-definable presets offering transpost in
frequencies of a semitone, and Loop (in msecs).
— Use of feedback can produce ascending or
descending scale effects from a single input.
And finally, Dual Transpose, offering all of
the previous facilities on two separate pitch shifts,
plus independent mixing of their respective
volume levels. Some great harmoniser effects
on vocals can be had with this one.

As if that wasn’t enough, the package comes
complete with a set of diagnostic routines to
tailor the package to your synth if it needs it, but
we had no problems.

What can’t I say? If these two programs are an
indication of the quality of the whole range,
then EVERYONE had better look out. At
the moment, these products must be the home
recordist’s dream. If the Hungarians can be
persuaded to develop a microdrive option, or,
best of all, a CBM64 Disk based version — they
could be a major hit with pro musicians too.

Prices and availability of the whole Muzik
Processor range have yet to be finalised, but
we’ll let you know the second (well, the month),
that anything is decided. We also hope to bring
you in-depth reviews of the programs in the
range over the next few months. Keep ‘em peeled.

• U.K. agents for the system are Vulcan
Electronics, on 01-203 6366.

The audio processor with ZX81 and SH101 squeezing into the picture.