VITAL STATISTICS:

Produced: 1969 to present (out of production for a short time in 1989)
Total Number Made: VC53, estimated 350, Synthi A/AKS, 860.
U.S. EMS Servicing: Everett Hafen, EMSA (Electronic Music Studio, America), 11 North Main St., Willimantic, MA 01046. (413) 268 3588.

Description: First commercially Inundated Modular System. CMS. It is a 2/4 octave, variable waveform oscillator, the other with variable pulse width square and rising or falling triangle waveforms, an LFO (oscillator to 30Hz, variable pulse width square and rising or falling triangle waveforms), noise generator, 43 stereo filter, 100V/400V, 2 to 15kHz, sine wave generator, ring modulator, envelope shape), a 43Hz to 20kHz, joystick controller, signal level/control voltage meter, dual input channels (1/4" mono, 1/4" line, and CV levels), outputs (1/4" mono), VCSs for audio or pre-VCA for CVI, headphone and scope outputs. Built-in stereo amplification/speaker system. Optional 43 octaves, duophonic (2x) orchestral keyboard with internal oscillator and velocity-sensitive dynamics, and 2/12 octave Ks capable of touchplate keyboard and 43 octaves, Dougacane monophonic digital sequencer (this inside Synthi A Ltd, resulting in the AKS).

Insider Information: The VCS is better known in the U.S. as the "Putney," perhaps due to EMS's original address in Putney, a borough of London. David Cockrell now works for Akai; he designed the hardware used in Akai's $1000 and $1100 synthesizers. Tronsam Cary is a Professor of Electronic Music at Adelaide University in Australia. Composer Peter Zinovieff was taking "holiday" on a remote Scottish island and was incommunicado during our research. Current EMS owner Edward Williams, a contemporary classical and electronic music composer, is perhaps best known for scoring music for television broadcast. Among his projects is the long-running nature series Life on Earth, narrated by David Attenborough.

Original Retail Price: VC53, $330 (about $825). Synthi A, $1,975 (about $495). AKS, $2,420 (about $650). [U.S. dollar to British pound exchange rate in 1971 was 2-1/2 to 1].


Current Street Price: $250 to $500 ($500 to $1,000).

Although Brian Ennington's kick Minimoog in this photo (very similar to the jolly little Keyboard cover shot), the EMS A/KS was the background is also like to his heart. At that time, Fox told us about an interesting quirk that the AKS had developed. "If I feed a 440 input signal into the ring modulator it triggers the envelope... It's very useful, because you can use this envelope to trigger any other function in the synthesizer... When I got a kickstart, I have to put little notes all over the thing saying: Don't write this part. Don't change this."
This fit inside the Synth A's lid.
A combination of the Synth A and the KS was called the AKS.

While Cockerell did all the designing, Wood was busy with other duties. "Half of my jobs were to do with keeping the studio in order: tidying, lining up tape machines, sweeping up, making tape copies. The other half was actually concerned with demonstrating, the equipment to quite a lot of notable pop stars who would come by and decide whether they wanted to buy something." Ready for a list of who was who in the European rock scene? Go ahead. Robin, "Pink Floyd, the Who, the organ on 'Won't Get Fooled Again' was processed with the VCS3's envelope. Royalty Music [Brun Eno's band], King Crimson, Tangerine Dream, Klaus Schulze, Moody Blues, Curved Air, Jean-Michel Jarre, Gang, and yes, Rudi Randgen (one of your own) used the VCS3; there's a good picture of it on the inside cover of *Something/Anything*. Many other groups bought EMS gear but never seemed to make use of it: Rolling Stones, Led Zeppelin, Fleetwood Mac, John Tull, and Deep Purple.

Like the American analog synths of the time, EMS's oscillators tended to drift. "They were a bit dodgy on stage," Cockerell reports. "You had to keep tuning them up." Wood concurs. "They're rather temperamental with regard to tuning and pitch stability. People who used them on stage deserve a lot of credit for their bravery. If you wanted to use one with a keyboard in performance, you had to keep settling down for about half an hour before you could set the tuning. Even then, if someone were to open the door and let in cool air just before your lead solo, you could easily be in trouble. Lots of people used them live. Pink Floyd used them for quite a long time. But a lot of their stuff wasn't pitched; it was just effects. There were many applications where the machines were just used as effects generators. Jean-Michel Jarre is probably the best-known performer who still uses them. He's got six of them in a big rack."

Rock stars haven't been EMS's only supporters. "Educational people consider that the VCS3 has never been bettered as a tool for teaching people about sound processing, acoustics, and analog audio synthesis," Wood points out. "We've also got the jingle and effects professionals, broadcasters, people like that. There are younger enthusiasts who may have seen Jean Michel with his enormous array of VCS3s, and they want to make sounds like he does. We get young musicians who have listened to early Tangerine Dream stuff, when they used a lot of VCS3s. We haven't only attracted people from the pop end. There have been young people influenced by avant-garde music, acid rock, or Jean-Michel Jarre."

Of all the synths we've covered in this column, only the EMS lineup of VCS3, Synth A, and AKS is still being manufactured—albeit on a custom-order basis. In fact, they were out of production only briefly during 1980. And if you don't want to pay for a custom-built one, you can save a bit of money by ordering a factory-refurbished unit. But don't look for MIDI connectors. "We were asked by the shop that markets these rack-mount Minimor and Prophecy modules [Studio Electronics] to MIDI the VCS3 and put it in a rack," Wood recalls. "The trouble with that is that it would take up an enormous amount of panel space. It would be a monster. None of it would be present; you'd have to make all the connections for the audio and control lines, and you have to modulate all of its controls in real time. It seems like too much of a sweat to start tinkering with the old design. Why not just tell people to go out and buy a MIDI-to-CV converter and keep the design the same, so as not to confuse the issue? It doesn't feel right to me, having one of them in a rack. Besides, the AKS is quite handy as it is."

Not that there weren't some design changes along the way. "The most significant changes came in early '72," Wood explains. "We call them the MkI and MkII. We're still on the MkII to this day. It has a redesigned power supply, which can deliver a lot more power in order to drive the KA's monophonic digital sequencer. The original design also used a different output amplifier. On the MkII, you can trigger the envelope using an external audio signal. When the amplifier reaches a certain threshold, it triggers the envelope generator, which wasn't possible on the Mids. The patch-board matrix layout was also slightly changed. On the MkII, there were separate rows for the two oscillator waveforms: sine and sawtooth. You could route the saw waveform to say, ring modulate some sounds while sending the sawtooth through the envelope generator to do something else. On the MkII, these were mixed together on one row."

According to Cockerell, there were electronic circuit changes as well. "In the first VCS3s, there weren't any integrated circuits. It was all done with transistors. That's my excuse for it not working very well."

Talk about excuses—check out Cockerell's modest explanation for bringing the VCS3 to life: "It was just a means of raising money for Zinoviev's studio."

**CORRECTION**

In last month's column on the Roland MC-8 MicroComposer, we incorrectly listed the release date for EMS's Synthi 100 as 1974. In fact, EMS delivered two Synthi 100s in 1971: one to Belgrade Radio in Yugoslavia, the other to the BBC Radiophonic Workshop in London. Thus, the sequence built into the Synthi 100 qualifies as the first TTL-based digital sequencer on the market, not the Oberheim DS-2 as we reported.