Yamaha A5000

The A5000 now flies the sampling flag for Yamaha, expanding on the groundwork of the A3000. Derek Johnson & Debbie Poyser salute.

Until mid '97, when Yamaha launched the A3000, there had been a conspicuous sampler-shaped hole in their otherwise comprehensive music and studio equipment range for almost 10 years. Having got their fingers burned with 1988's ill-fated TX16W, Yamaha seemed to have decided to leave well alone and let Akai, E-mu and others make the running in the sampler stakes.

The A3000 changed all that. Here was a serious sampler with bags of power that made a breakthrough on the price front – beginning the process of chipping away at the stubbornly high cost of studio samplers. Some found its OS inscrutable, possibly because Yamaha adopted a different mind-set than that of the competition, but it also won dedicated fans. Obviously encouraged by such success, Yamaha are sticking with professional sampling, launching two new A-series machines, the A5000 and A4000, and continuing their assault on the cost of sampling.

Main Attractions

The feature list of the A5000 (the big brother of the new pair) is little short of staggering: mono/stereo 16-bit sampling; 126-voice polyphony (64 for the A4000); 32-part multitimbrality (16 for the A4000); 128MB maximum RAM, from a relatively stingy 4MB base; four analogue outputs (expandable to 10 with the AIEB1 board that also features S/PDIF digital I/O); synthesis facilities; comprehensive effects; looping, editing and DSP tools; space inside for a SCSI or IDE hard drive (plus SCSI connection for external drives); a floppy drive that can be replaced with a Zip removable; the facility to write A-format or audio CDs to an attached SCSI CD burner; basic Standard Midi File playback sequencer; real-time Midi controller knobs; free editing software; and a set of sample CDs. It also reads Akai S1000/3000, E-mu EIIIx, Roland S760, WAV and AIFF samples, plus some Yamaha synth voice/wave data, and can save in WAV or AIFF as well as native format.

Several items on that list reveal improvements over the A3000 – multitimbrality, polyphony and effects processors are doubled on the A5000, for example – and the 5000's 13cm by 3cm backlit graphic LCD is immeasurably better than the 3000's meagre two-line display. Indeed, the display plays a huge part in making the A5000 more immediate and easier to use than the 3000, offering menus, icons, and waveform displays. Like the 3000's LCD, the 5000's works in tandem with five soft knobs which line up with parameters in the display, selecting them or changing their values. Function-specific windows are chosen with a familiar Yamaha front-panel matrix: one axis details five labelled operating modes (Record, Edit, Play, Disk, Utility), each with accompanying status LED, while the other offers six switches to select each mode's six 'Functions', again with LEDs. The five soft knobs can also output any Midi controller, on independent Midi channels, and are perfect not only for tweaking A5000 parameters in real time, but also for controlling parameters on other Midi synths. The six Function keys on the front panel have a Midi *raison d'etre*, too: they can send out Midi notes and so are ideal for checking samples during editing or triggering them in performance. The A5000's Midi facilities, in general, are perfectly sufficient and include some additional useful real-time Midi control options.

Back-panel connections are adequate – four analogue outs, SCSI socket, and two sets of Midi I/O – but they can be improved with the addition of the cost-effective AIEB1 board mentioned earlier. The necessary analogue sampling inputs are located conveniently on the front panel.

Orientation Course

When it comes to sound hierarchy, the A5000 may feel unfamiliar to those accustomed to the way most other samplers (and, indeed, sample-based synths) work. All

the options you'd expect for multisampling, synthesis, and key/velocity splitting are available, but they're applied at individual sample level rather than Program or Patch level. Up to 960 samples can be on board, and each can have its own central pitch, Midi channel, key range, synthesis parameter settings, and effects routing. For easier management, related samples, such as multi-sampled piano notes, can be grouped into a 'Sample Bank', which can have the same parameter settings applied to all its constituent samples.

Organising samples into a multitimbral form, to allow them to be played over Midi, can be done in one of two ways. In Single mode, multiple samples and/or Sample Banks are all assigned to one Program slot (of the 128 available), and the Program basically becomes a multi-timbral setup, as all the samples/Banks in it have their own Midi channels and so on. Multitimbral mode (new for the A5000, probably because so many people were confused by having a layer of sound hierarchy removed on the A3000) works slightly differently. Each individual sample or Sample Bank required in the multitimbral setup is first assigned its own Program slot, and the resulting Programs are assigned to 'multi' parts, each with its own Midi channel. The latter mode is close to how many other hi-tech instruments work.

Sample This

Sampling with the A5000 is straightforward, though it might seem that there are a lot of different pages to visit first: the Setup page, to choose which input(s) to record from and select a sample rate (from 44.1k, 22.05k, 11.025k and 5.5125k analogue, with a grungy 'low-fi' option for the lower three; 44.1k, 48k and 32k rates are offered by the digital board); the Trigger page to set up an automatic triggering threshold, if required; the Effects page to sample through the A5000's effects, which is a useful option; the Monitor page, which can provide a metronome for those sampling their own playing; and then back to the Record page to initiate sampling. Quite a trip, but most people will only have to set up these preferences occasionally, because the A5000 remembers your settings. Making a sample, after you've completed the process once, could simply entail going to the Record page, setting a level (there's an input meter on the page), and hitting 'Go'. Especially useful during tweaking, is the fact that the A5000 can remember where you last were in each page and take you right there.

Yamaha have built in a couple more labour-saving refinements to make sampling less of a chore. You can choose to automatically normalise a sample after recording (as opposed to recording it straight and normalising later), and there's a very useful consecutive sampling facility for capturing multiple samples on-the-fly without the need to start and stop recording each time; the process can even be automated – brilliant for painless recording of multiple sounds off a sample CD. Samples can also be automatically collected into a Sample Bank (or Program) and mapped to adjacent keys.

Anyone who might need to make very long samples, say for extended remixes, or for broadcast sound effects/atmos work, should note that the way the A4000/5000's RAM is accessed means that the maximum length of a single sample is six minutes 20 seconds stereo at 44.1k. Oddly, the maximum mono sample is exactly the same length. So although 25 minutes of audio can be recorded with a fully-stuffed A5000/A4000, it can't be contiguous.

Fun In The Waveforms

The A5000 offers pretty much all the bread-and-butter sample playback and editing features you'd want, plus some rather tasty 'jam'. The neat 'wave start address velocity sensitivity' parameter, for example, causes a sample to play back from a point inside itself, in response to velocity, rather than its official start point, which yields some very neat effects.

Sample trimming has the benefit of zooming to single-sample level in the display, while looping – a tedious job with any sampler at the best of times, is made more bearable by a couple of nice features. For a start, you can hear loop changes in real time while holding down a note. The A5000 can also scroll through a sample from one zero crossing to the next, to find the one that yields the smoothest loop – great for avoiding clicks. Only one loop per sample is available (though you can let audio after the loop point play out on key-release, or not, which can help to add interest to a sample), but the 5000 does crossfade looping, which helps disguise awkward joins in samples that are difficult to loop. There are three crossfade curves to choose from, and you can set a percentage of the loop to be crossfaded. Good loops can be easily achieved on both instrument-note samples and rhythmic material.

Moving on to more creative editing, the A5000's clutch of DSP processes includes timestretching, pitch change, sample reverse and fade in/out. All work as expected, with timestretching being particularly good and producing useable results with quite extreme stretches. Serious fun is also to be found in a couple of innovative DSP sample manipulation tools that are unique to Yamaha. The excellent 'Loop Remix' divides a sample and randomly re-orders it, in terms of sound quality, pitch and playback direction. It's non-destructive and can be performed repeatedly until you like the result. User interaction with Loop Remix, via four tweakable parameters, is possible, though results are fairly unpredictable! The process is probably most usefully applied to rhythmic material, but it also has potential with textures, sound effects, and speech samples.

The less chaotic, but equally useful, Loop Divide chops a sample into up to 32 equal chunks, then places them in a Sample Bank, mapped to consecutive keys. Ideal for dividing drum loops into component parts, it's also effective for chopping up other material. For example, a two-bar sample of any musical material could be divided into 16 chunks roughly an eighth-note long, and reorganised just by triggering the new samples in a different order.

Also welcome is the Loop Tempo control, which allows

you to assign a tempo to a rhythmic loop or to tell the A5000 to determine the tempo. The latter option works nicely as long as the sample is some multiple of four beats long – ideal for matching breakbeats and loops.

Samples can achieve even greater heights with the A5000's synthesis powers, encompassing multi-mode resonant filtering, envelope generators and low frequency oscillators. The filter is meaty, with a huge amount of bottom end, and has the potential to be extremely cutting. It's also very comprehensively specified. In fact, the synthesis section as a whole does everything you'd reasonably want – the 5000 even has seven basic synth waveforms so you can create sounds from scratch without sampling – and Yamaha have sensibly made it comprehensible rather than esoteric. Yet there's enormous power available just by virtue of the fact that every sample can have its own settings. Parameters can easily be copied from one sample to another, too.

Deceptively Spacious

The A5000 boasts a generous total of six effects processors (three on the A4000), and each can be assigned one of 96 effects covering a very wide range of treatments. A decent four-band 'Total' EQ (the LF band goes all the way down to 32Hz!) can also be applied to complete stereo mixes.

Various flavours of delay, reverb, chorus and flange are augmented by distortion, overdrive, amp simulation, a turntable effect, and the eccentric Jump and Beat-Change effects, which chop up or modify the input signal in real time. Radio simulation, rotary speaker effects, compressors, enhancers and noise gates are all there, and many effects comprise dual or triple chains. Nine treatments, including some delays and flanges, can be synced to Midi clock, and all effects are fully editable, with up to 20 parameters each. We encountered a couple of little irritations during effects editing, but they were far from insurmountable.

The effects would certainly be one of a creative samplist's reasons for buying this machine; as well as being diverse, they're generally of good quality, and can even be used to treat external audio, via the audio inputs. Distortion and overdrive effects are occasionally harsh, but modulation treatments are warm and pleasing. Reverbs are slightly grainy and would be too unsophisticated for some applications, but they have a desirable character for others.

It's all good stuff so far. Actually accessing the effects, however, requires you to (as one slogan goes) Think Different. There's no 'global' effects processing, nor send-return loops, since effects are applied to individual samples. However, it's possible to override sample-level effects at Sample Bank level and, with the useful 'Easy Edit' facility, at Program level, should you want to apply the same reverb, say, to a whole Sample Bank or Program.

The Verdict

The A5000 is a very worthy successor to the A3000 and a serious competitor to the more established sampler brands on the market. It seems to have started something of a price war, which could mean that the other players realise just how serious a competitor it could be!

As far as hardware specification goes, the A5000's 128MB RAM capacity isn't as high as that of the latest Akais (at 256MB), but it matches the market's other main player, E-mu. The essential SCSI is standard, it's nice to have an option to install the increasingly popular Zip drive (especially since floppies are of little use for the kind of samples we all tend to use these days), two sets of Midi I/O is a bonus, and S/PDIF I/O can be added cheaply. And for the really forward-looking, the A5000 will accommodate Yamaha's forthcoming Firewire-based mLAN interface board, but not at the same time as the digital board.

In terms of usability, the new display helps to put to rest many of the criticisms that were levelled at the A3000, though it sometimes tries to cram in too much information, resulting in a busy feel. Unfortunately, the manual is of little help in explaining crucial aspects of the Yamaha mind-set. But, fortunately, a Quick Start guide should soon be available free of charge, which aims to correct the manual's shortcomings.

When you're familiar with how the A5000 works, it's not only very powerful, but also very fast. Sampling, trimming, looping and DSP operations are quick to perform, with or without the use of the helpful free Mac and PC editing software. While we're on the subject of freebies, the nine-strong sample CD collection bundled with the 5000 is also worthy of praise. It covers a wide variety of instruments and styles, and while the samples seem quite memory-hungry it's an excellent starter or expander set.

In conclusion, then, the A5000 offers great value for money. Its large array of well-conceived, often innovative, features and top sound quality won't disappoint demanding samplists. Yet its cost puts it within reach of newcomers, who should find that even relative inexperience won't prevent them from producing exciting samples with it. Yamaha have worked hard to make this machine more than just a sonically faithful digital recorder: it's a sound-design powerhouse, with the sampling routines and DSP tools you'd expect, augmented by unique but easy-to-use sonic mangling devices, sensible, well-integrated synthesis facilities, and effects power to spare.

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• A5000: $4,495 RRP; A4000: $3,495 RRP; AIEB1 Expansion Board: $549 RRP.