

Taking VST instruments on stage

In an amazing quarter of a century of gigging with Marillion, keyboardist Mark Kelly has seen music technology change almost beyond recognition. His latest solution to keyboards on stage is a computer running Brainspawn's innovative *Forte* software, which allows VSTis to go live...

Like most things, music goes in cycles. Styles go in and out, and it's the same for the gear too.

All those analogue keyboards we sold off in the late '80s in favour of new digital gear are now making a comeback, not as tenth-hand hardware, but in VST form. However, whereas these old classics were designed specifically for live use, as well as for use in the studio, you can't say the same for software running on a PC or Mac. In fact, it would be hard to think of anything less suited to the rigours of an on-the-road lifestyle than a delicate computer stuffed to the gills with potentially problematic operating systems, audio drivers and application software. But it would be such a shame if gigging musicians were unable to take advantage of all these lovely emulations of old gear. Surely there's a solution?

There is — but before coming to that, I'd like to describe exactly why I'm so keen to use multiple VSTis on stage. First, we need to travel back to 1982...

Setting the scene

I started my career as a professional keyboard player using a Farfisa Compact Duo organ, a Yamaha CS15 monosynth and a Mellotron, although what I really craved was a Hammond C3, a Minimoog and a Mellotron. Unfortunately, production of the Minimoog had ceased a few years earlier, so I eventually

Marillion's Mark Kelly ■ Using Brainspawn's *Forte* software

settled for a Sequential Circuits Pro-One, and added a Roland Jupiter 8 and a Hammond impersonator in the shape of a Korg CX3 organ. With four reasonably manageable keyboards at my disposal I was ready to record and tour the first Marillion album.

During the recording of our first album, *Script for a Jester's Tear*, I was encouraged by one of the A&R people at EMI to shell out around £5000 for an Emu Emulator sampler. Clearly this guy wasn't on the same planet as the rest of us. At today's prices, a new Emulator would cost over £25,000. Nevertheless, I bought one, followed a few months later by a PPG Wave 2.2. Those were the days! Looking back, the early 1980s was a golden age for keyboards, and for keyboard

manufacturers. If you wanted an organ sound, you reached for the organ. If you needed a piano, you reached for the piano. Every time we recorded a new album I bought one or two new keyboards, and when we went on tour I added them to the others. Within five years my rig was stacked high on three sides of a square and, as far as I was concerned, this was cool. Understandably, my keyboard tech wasn't as happy!

The MIDI years

If things had continued as they were I'd eventually have needed my own 32-ton truck to move the keyboards from gig to gig, but the turning point was the appearance of MIDI. Layering sounds from two dissimilar but



linked keyboards, such as a Yamaha DX7 and a Roland Juno 106 was new and exciting, although I still needed both pieces of hardware at my disposal to be able to do it. But rather than continuing to add more keyboards to the rig, I started to make some tough choices, replacing older keyboards as I bought newer ones. When I acquired a Roland D50, the Juno had to go. Next, the DX7 disappeared in favour of a tiny TX7 module and the Jupiter 8 made way for a rackmount MKS80 Super Jupiter.

As the 1980s rolled on, MIDI significantly altered the way that I — and most other multi-keyboard players — approached creating sounds on stage. I had become heartily fed up with playing with one hand and trying to stuff a floppy disk into a sampler with the other, while at the same time trying to select the next patch on something else, all in time for the chorus. The programmability of my new MIDI controller keyboard (a Roland MKB1000) was the key. This gave me control over my growing rack of modules, and it enabled me to layer some interesting sounds, while reducing the number of keyboards on stage. I particularly liked the new approach of programming the changes in the songs in advance and stepping on a footswitch to switch patches during the show. For once, my keyboard tech and I were happy simultaneously.

Nevertheless, I soon became frustrated with the MKB1000. I needed a more powerful MIDI patchbay and router, so a friend offered to write a program to my specification, to run on an Atari ST computer. In the months leading up to our next tour, the software seemed to be doing everything I wanted, so with a few final tweaks I took it on tour. Disaster! It started to crash in a dramatic and embarrassing fashion, and I was soon under pressure to replace it. I quickly bought a programmable MIDI patchbay and said goodbye to the Atari.

As each album came and went, so did the keyboards. But far from finding life getting easier, I was becoming buried, as the band expected me to recreate ever-more complex keyboard arrangements live. We wanted to be able to reproduce the sound of our CDs on stage, without resorting to tapes or backing tracks. In 1994 it took me no less than six weeks to program my keyboards and samplers in an effort to reproduce both the analogue sounds of our early material and the complicated, modern layers of sound on the then-current album, *Brave*. It was time for another new approach.

The introduction of VSTis

In 1995 we began to record our albums at our own studio in Buckinghamshire, initially using

Tascam DA88s, but later upgrading to a Pro Tools system with a *Logic* front end. We all have *Logic* at home so, for the first time, the act of recording became something we were able to do independently from one another, and in our own time. I really enjoyed working in this way, and it gave me the time and the creative freedom to start experimenting with

sounds in ways that were previously impossible. This was when I started to become interested in soft synths. I realised that their scope was enormous: from simple recreations of my old Minimoog and Mellotron, to the DX7 and PPG that I had used for many years, and way beyond, they could (almost) do it all. Suddenly I had a huge



Marillion backgrounder



■ The whole band during the Philadelphia leg of their recent US tour.

For those who haven't a clue who Marillion are, here are a few of the bits I can remember from the last 25 years...

The band was formed in 1979 by guitarist Steve Rothery and drummer Mick Pointer. I joined two years later, by which time vocalist Fish was fronting the band and doing his best to secure gigs in every pub, club and student union bar that would have us. Pete Trewavas (bass) joined a few months after I did, and the five of us spent the next 18 months slogging around London and the South East of England. In 1982, a dozen sold-out nights at the legendary Marquee club forced the record labels to recognise that we might have a future.

We struck a deal with EMI, and our first album, *Script For A Jester's Tear* (1983) sold well in the UK. Nevertheless, we parted company with Mick Pointer at the end of the first tour and former Steve Hackett drummer Ian Mosley joined us in 1984 for our 'difficult second album', *Fugazi*. This didn't sell as well as *Script*, so we were packed off to Berlin (to keep costs down), to record *Misplaced Childhood*, in 1985. This was a turning point for the band, because the first single from the album, 'Kayleigh', was a huge hit all over Europe. We were No. 1 in many countries, and everyone's favourite for 15 minutes. But despite appearances, all was not happy on planet Marillion and, following the tour that supported 1987's *Clutching At Straws*, Fish quit the band to pursue a solo career. After six months of searching, we found a replacement vocalist in Steve Hogarth. Looking back, it seems we spent a couple of albums settling down with our new line-up, at the same time moving away from our old sound with the albums *Season's End* (1989), and *Holidays In Eden* (1991).

Two of our best albums were to follow. *Brave* (1994) proved hugely popular with our fans, and we followed this soon after with *Afraid Of Sunlight* (1995). Our fans felt that we were on great form, but EMI nevertheless 'let us go'. We then signed a three-album deal with an independent label, but

began to regret it almost immediately, as the label would spend little on promotion, counting on our loyal fans to seek out our work. This resulted in slowly diminishing sales and what we considered to be a bleak future for the band.

In 1997, I posted a message on the Internet, informing our US fans that there would be no American tour to support our next album, simply because we couldn't afford to lose any more money touring North America. In response, a fan instigated a whip-round on the Marillion mailing list. They raised \$60,000 and made it possible for us to tour after all. This woke us up to the potential of the Internet, and we made plans to set ourselves free from our record label. Having released two of the three contracted albums, we had one more album to make under the existing deal and we called it *Marillion.com* (1999) to advertise our newly-launched web-site and record label.

This was when we also dreamed up the idea of asking our fans to pre-order and pay for the recording costs of our next album, some 12 months in advance of its release. It was a revolutionary concept and it hit the headlines in 2001.

Astonishingly, over 12,000 of our fans pre-ordered and we struck a deal with EMI to market the resulting album, *Anoraknophobia*, in the shops. We

launched a similar campaign to fund our most recent release, *Marbles*, but this time all the money raised (£350,000) went into the campaign fund to promote the album. It worked. In April 2004, we had our first top 10 hit since 1987 with 'You're Gone' (which reached No. 7) and followed it with 'Don't Hurt Yourself', which reached No. 16 in the summer. Some DJs accused us of

cheating because we used the internet to encourage our fans to go out and buy the records. I couldn't quite understand why that was cheating. Oh well...

If you want to decide about Marillion for yourself, you can hear what we do by visiting our web site, www.marillion.com. We'll even send you a free CD, *Crash Course*, to introduce you to our music.



Info

Feature by Mark Kelly
Photographs by Joe del Tufo, Studio M

» keyboard rig at my disposal, but it weighed next to nothing.

I was left with a dilemma. For the first time, I had access to all the sounds I wanted without resorting to that 32-ton truck. But the means for running them — and, in particular, running lots of them at the same time — was far from suitable for stage use. Of course, many VST instruments are capable of running as stand-alone applications, and it would have been easy to tuck away a portable PC somewhere on stage, but I found that running and controlling more than one of these at a time was problematic. I needed a program that was capable of managing all the audio and MIDI routing for my multiple VST instruments.

I started to experiment with Steinberg's *V-Stack*. This allowed me to play multiple VST instruments simultaneously, but it wasn't able to store patch and routing settings for recall during a gig, so it was quite unsuitable for what I needed. At this point, I seemed to have hit a brick wall, but I couldn't believe that I was unique in my needs, so I spent a few days searching the Internet and downloading various bits of shareware and freeware, with no luck. I was close to resigning myself to sampling the sounds I'd created on my soft synths and taking my old hardware rig back on the road, but when I was on the point of giving up I came across Brainspawm, a small US software company, and their *Forte Live Performance Workstation* (only available from www.brainspawm.com). I can't say that I was too inspired when I read on the web site that the staff "spend an inordinate amount of time relaxing in a hot tub, and maybe, just maybe, release a product or two", but I downloaded the demo to see if *Forte* would do what I needed. Pretty soon I realised that they spent less time in the tub than they claimed. *Forte* seemed to be just what I was looking for. [Ed: *Forte* has also been used in the *Open Labs Neko* instrument, reviewed in *Sound On Sound* January 2005.]

Forte on the road

Despite my horrific experiences with the Atari ST, I prepared yet again to take a computer on the road. Once I had determined that this was the way forward, I decided to build my own rackmount computer, so that I could be confident that it would be powerful and reliable enough for touring. In the end, I built two: one for regular use, and the other as a permanent backup. Inevitably, I needed a high specification to handle the number of VSTs that I wanted to run simultaneously, so I chose a motherboard with a 3.2GHz P4 processor and 3GB of RAM. This specification would easily allow *Forte* to host and run 18 VST instruments through six stereo busses, which would be adequate... for now.

The user interface of *Forte* is an on-screen representation of a rack of modules, referred



▲ Forte 1.5 showing Mark's rack file from the *Marbles* tour.

to as a 'rack file'. There are various choices of skins, none of which look great, but beneath this unappealing exterior *Forte* has a set of features specifically designed for live use.

Before taking *Forte* on stage, you create as many 'scenes' as you need to represent your songs or, if they are complex enough to require this, parts of songs. *Forte* scenes are reminiscent of automated mixer scenes: they give you the ability to recall an entire setup with a simple press of a button or footpedal. A scene change can do a number of things to your rack: change the settings and sounds on each VST plug-in, alter your MIDI routing and filtering, modify tempo for sync'd effects, and change a VST instrument's audio-buss assignment. Furthermore, it can do all of this from a single MIDI

program change. This allows you to set up a complete set list of scenes, each named after a song or a part of a song, and run through them with little or no interaction with the computer on stage. You can even configure *Forte* to start up when Windows loads, automatically

▶ *Forte*'s Scene View, offering on-stage prompts for the band's set.

loading and selecting the first rack file and scene you need. So by simply turning on the PC you can be ready to play the first song in your set. This was exactly what I was after: there's no need for a keyboard, mouse, or even a display, which is something that I was keen to avoid, because I want to look like a musician on stage, not a computer geek.

Forte has a very simple but useful feature called Sceneview. This is a full-screen, high-contrast display of the scene list, displayed in a huge font so that you can read it in the most adverse conditions. Even on the tiny monitor that I use on stage (see 'More About Monitors' box), I can see the previous scene, the current one and the next one. It's like my own personal prompter, letting me



know what's coming next so that I can prepare for the next song, or for the next section in the current one. If you need more info to be displayed, you can load a background JPEG image for each scene, with lyrics and prompts, or a picture of your girlfriend if that's what you need to get you through the gig!

In addition to all the above, *Forte* offers extensive MIDI translation features. You can configure it to re-map and filter channels, filter keys by range, transpose notes and re-map MIDI controllers. Should you need to do so, you can do this independently for every VSTi in the rack and every MIDI input port. To top it all off, you can have a completely different MIDI translation for each scene. This is amazingly flexible, and makes it possible to configure and control soft synths in ways that would be all but impossible using traditional keyboards and equipment. Another useful touch is Toggle mode, with which you can configure a MIDI pedal to toggle a VST parameter on and off. I use this primarily for speeding up and slowing down the rotary speaker effect within Native Instruments' *B4* organ, but there are many other uses for it.

On stage

Once I got to grips with *Forte*, I found it a dream to program, although it crashed a number of times while I was setting everything up. The guys at Brainspawm reassured me that it would be more vulnerable to crashes during the programming stage, because of the way in which different software developers implement the VST standard. This can be 'loose', to say the least.

By this time I had also become comfortable with computer-based samplers, so I ditched my Akai S6000 for Steinberg's *Halion*, of which I have three copies running simultaneously on stage, all hosted by *Forte*. One of these provides sampled instruments such as pianos, flutes and so on; one provides sound effects; and the third is dedicated to loops. I was also able to bring my Minimoog out of retirement in the shape of Arturia's VST soft synth, and I have two copies of this running: one for me to play the widdly-widdly bits and the second controlled by MIDI bass pedals played by Pete, our bass player. Of course, Pete isn't limited to playing Moog Taurus bass-pedal sounds (although there are lots of these during the two hour gig), so — taking advantage of *Forte*'s MIDI routing — I have configured everything so that he can use the pedals to trigger plenty of samples throughout the set. This simultaneously takes some of the load off me and keeps him out of trouble!

Nevertheless, none of this would be of much use if I had to mix everything 'live' within the computer. I could balance everything perfectly in rehearsals, but that would be no guarantee that things wouldn't

More about monitors

In truth, the idea of not having a monitor on stage is too scary for me, so I have two of them tucked away, although you'd never know that if I didn't tell you about them.

The first is a seven-inch LCD mounted on the side of one of my keyboards. This allows me to see which

scene is active, and read which one is coming next. However, this display isn't big enough to edit scenes or to make changes on the fly, so I also have a large flat-panel display placed out of view for soundcheck tweaks, or just in case an emergency crops up during the gig.



▲ This view of Mark on stage from the side shows his flat-panel 'safety' monitor, tucked away at floor level but still available for visual feedback if anything needs tweaking mid-show. Photo by Michiel Koolen.

need tweaking at each venue. Happily, this is no problem at all in practice. Using *Forte*'s audio-routing capabilities, I can direct the stereo output from each 'soft' instrument to a different pair of outputs on my Delta 1010 soundcard, and from there on to separate stereo pairs on my Yamaha 01V digital mixing desk. This has the added benefit of allowing me to use the 01V's on-board reverb rather than a power-hungry PC plug-in. Let's face it, I don't want to drop out of real time in the middle of one of the loud bits!

Once everything was configured, the system proved completely reliable. During a 43-date European tour, followed by a further

15 dates in North America, neither the PC, *Forte* nor any of the VSTis crashed once. This means that I never saw *Forte*'s safety feature. Called Advanced Performance Recovery, this is a separate Windows application that monitors *Forte*'s health by listening for a signal from it every few seconds. If APR stops detecting this signal, it will forcibly kill *Forte* (if it still exists in a running state) and restart it with the last rack and scene it was using.

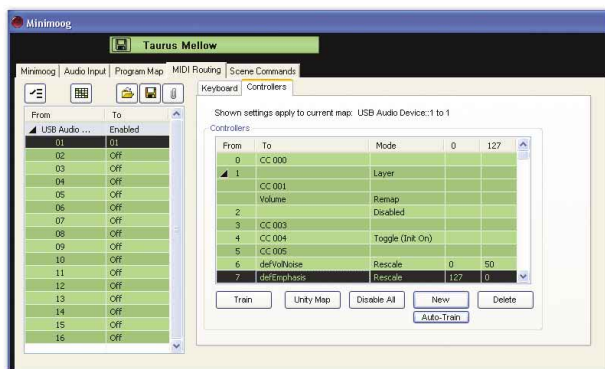
From version 1.4 to version 1.5...

The *Marbles* tour, in 2004, was performed using *Forte* 1.4. However, as a result of several conversations and a visit from the Brainspawm >>

» guys (who came to see our show in Chicago), there is now *Forte* version 1.5, which offers many enhancements over the previous version.

The most obvious new feature is that scenes can now be organised into set lists. Each scene is considered part of a song, which is part of a set list. You can re-order songs in the list very easily, and *Forte* will then shift the scenes around automatically for you. Even if you have a song with 10 scenes or more, everything will stay in the correct order. You can have more than one set list in the rack file, too, although only one can be active at a time. In the past, I would always protest when the rest of the band suggested last-minute changes to the running order. Depending upon the equipment used by a band, changes of this nature can be trivial for a singer or drummer, and at least manageable for guitarists and bass players, but they are a technical nightmare if you're trying to reconfigure something with the complexity of my rig. With *Forte* 1.5, I can adapt much more easily to last-minute crises.

One of the few difficulties that I encountered with *Forte* 1.4 was that it re-loaded the patches in every VSTi when it changed scene. Since some VSTis (particularly samplers) can take a long time to load, this could have been a real problem on stage. I managed to find ways to work around this, but I found that these also negated some of the power of the system. In the end, I tried side-stepping the problem by selecting different MIDI channels for changing patches as I used to play them. But even this wasn't a complete solution. For example, *Atmosphere*, my VSTi of choice for strings, is unable to



A *Forte* screen showing how MIDI controllers can be re-mapped.

respond to different channels for notes and patch changes. And, since this was one of the packages that was slow to change patches, I ended up with six copies of it running simultaneously, all with different patches selected.

Happily, none of this is necessary using *Forte* 1.5, because it's now possible to set up each VST's response to each scene change. This means that a given package will only load a patch at a scene change if the new



Mark Kelly and Marillion frontman Steve Hogarth, on stage during the Philadelphia leg of the US *Marbles* tour.

scene requires a new sound. What's more, I can now send MIDI program changes to each VSTi at a scene change, so instead of loading new patches I can, for example, pre-load everything into the samplers and switch between patches rather than loading new ones. Another huge benefit is that scene changes can be much smoother and can be placed anywhere with a song, because if no change is being made to a given VSTi, you can sustain notes over the scene change... something that was not previously possible.

MIDI filtering is also more powerful in version 1.5. You can re-map a single incoming MIDI channel to several layers on the same instrument (in 1.4 you could layer across VSTis but not within a single instrument), each with

independent key filtering, transpose and controller re-mapping. Additionally, you can now map incoming MIDI controllers to several layers, each controlling different parameters. For instance, you could map a knob sending CC11 to alter several parameters on a VSTi simultaneously, and even make some parameters react inversely by setting up an inverse

scale where the minimum value is 127 and the maximum is 0. What's more, *Forte* 1.5 allows you to use MIDI controllers to start and stop VSTi arpeggiators and other tempo-synchronised instruments. This allows me to do things like start and stop rhythmic sequences simply by pressing a footpedal.

If you want this kind of flexibility and power, you'll have to work for it, because setting up such a degree of control can be quite complex. If your needs are more basic

there's a Quick Route feature that rapidly configures a VSTi to respond to an input port and channel. There's also a channel-routing grid where you can set up more complex MIDI routing quickly and easily — a nice touch.

Finally, for the non-test pilots (and to take away some of the worry of using VSTis), *Forte* 1.5 includes a built-in 'stress tester'. This will run simulated MIDI and scene changes through your rack file, to help you build confidence in your configuration before you take it on stage. This is a significant benefit when you consider how many components must be working correctly to do a show: not just the PC, but Windows the MIDI and soundcard drivers, *Forte* itself, and all the VSTis you've chosen to use. To be honest, it's best not to think about it too much or you'll never take the plunge!

Conclusions

For me, what's really exciting about the latest VSTis is that some manage to surpass the originals, while preserving the sound that made the old synths special in the first place. But whereas the originals were eminently useable, surely no-one in their right mind would ever consider taking a bunch of VSTis on stage — and certainly not on a tour of Europe and the USA — would they? Computer crashes, glitches, power surges and brown-outs, the guitarist tripping over a power lead... so many things could go wrong. But this is exactly what I did in 2004, without once leaving the rest of the band to wonder why the keyboards had suddenly gone horribly silent.

If you decide to take this route, I think that you'll find the benefits of using VSTis live outweigh the risks. For me, that's thanks to *Forte*, which I've found to be robust and powerful. I can heartily recommend it to any keyboard player wanting to go 'virtual' on stage. **EOS**