ON TEST

Autograph Signature Series

Simon Allen discovers what's new in Autograph's Signature Series of changeover units . . .

ABOUT THE EXPERT
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As one of the UK's most prominent audio suppliers, serving leading shows and venues across the West End, Broadway and internationally for over 40 years (*see LSi October 2021*), Autograph holds a notably high reputation. If you were to ask anyone who works for Autograph today, they'd probably tell you this success is thanks to attention to detail, providing solutions for any challenge and reliable repeatability. To this end, Autograph is often faced with providing solutions that don't exist on the market, and so designs and builds its own products in-house. One such solution is the Signature Series, which has recently received a couple of new additions. I was invited down to the company's HQ in Kentish Town, London, to meet with lead engineer Rob Tory to find out more . . .

XDANTE-1 DANTE NETWORK AUDIO CHANGEOVER SYSTEM

Sometimes simplicity is the best policy, and that's clearly Autograph's concept with this new XDANTE-1. There isn't much to be seen on the front panel of this 1U 19" rack-mountable unit. On the left are two LEDs indicating the status of the dual redundant power supplies, a big Change button in the middle and two switcher sections on the right, each with only four buttons. On the rear the simplicity continues with just two switcher sections, both offering primary and secondary Dante ports, connections for remote control and of course the dual redundant power supplies.

The unit consists of two independently-controllable 64 into 32 channel Dante switchers. These can be combined to allow up to 128 inputs to 64 outputs at 48kHz. At 96kHz operation, up to 64 inputs into 32 outputs can be switched simultaneously. There is a second switching mode available, where the first 32 inputs can be switched to the first or second block of 32 outputs.

Configuring these units couldn't be easier. No external programming or software is required, just some patching in Dante Controller. For example, when being deployed with a main and a back-up QLab system at 48kHz, each set of 32 outputs from the QLab systems is routed to the XDANTE-1 first switcher inputs. The first 32 outputs of this switcher are then patched to your console. Autograph users often find they use the switchers for 32 channels of music playback and 32 channels of FX playback respectively across the two switchers.

Finally, the operation of the switching is mostly carried out via the big green buttons on the front panel. These buttons are clearly illuminated and easy to hit if you were in a moment of panic during a live performance. The main Change button will obviously operate both switchers together, and the other two buttons will reverse the state of each switcher independently. Recessed out of accidental reach, each switcher in the XDANTE-1 harbours three extra buttons for Lock, ISO or Mode. Lock keeps the switcher in its current position; ISO isolates that switcher from the main Change button, and Mode turns the switcher to output switching mode.

Tory makes an interesting comment at this juncture which I really appreciate. While this system is designed to offer a back-up, as an operator you shouldn't be complacent and assume that both playback systems are working. He recommends that you randomly alternate running your show from the main or back-up system, as that's the only way you can be sure both systems are working. "Why not flip a coin each night?" he comments.

↓ XDANTE-1 Dante Network Audio Changeover System

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"You can quickly see how these units add up to provide a very neat and secure playback system for any show . . ."

I found XDANTE-1 all refreshingly simple, and it introduces a neat form of redundancy that can otherwise be clunky to build into a theatre system. However, this isn't an automatic switcher. In the event one playback system fails, it requires a manual input to switch from one to the next. Tory explains that this isn't usually a problem for theatre, as either the operator is quickly aware something is amiss, or the sound effect cue in question is short enough that switching to the alternative system can happen between cues. Tory comments: "The philosophy here is to be robust and simple, without over-complicating or carrying out too many tasks."

XUSB-2 COMPUTER CHANGEOVER SYSTEM

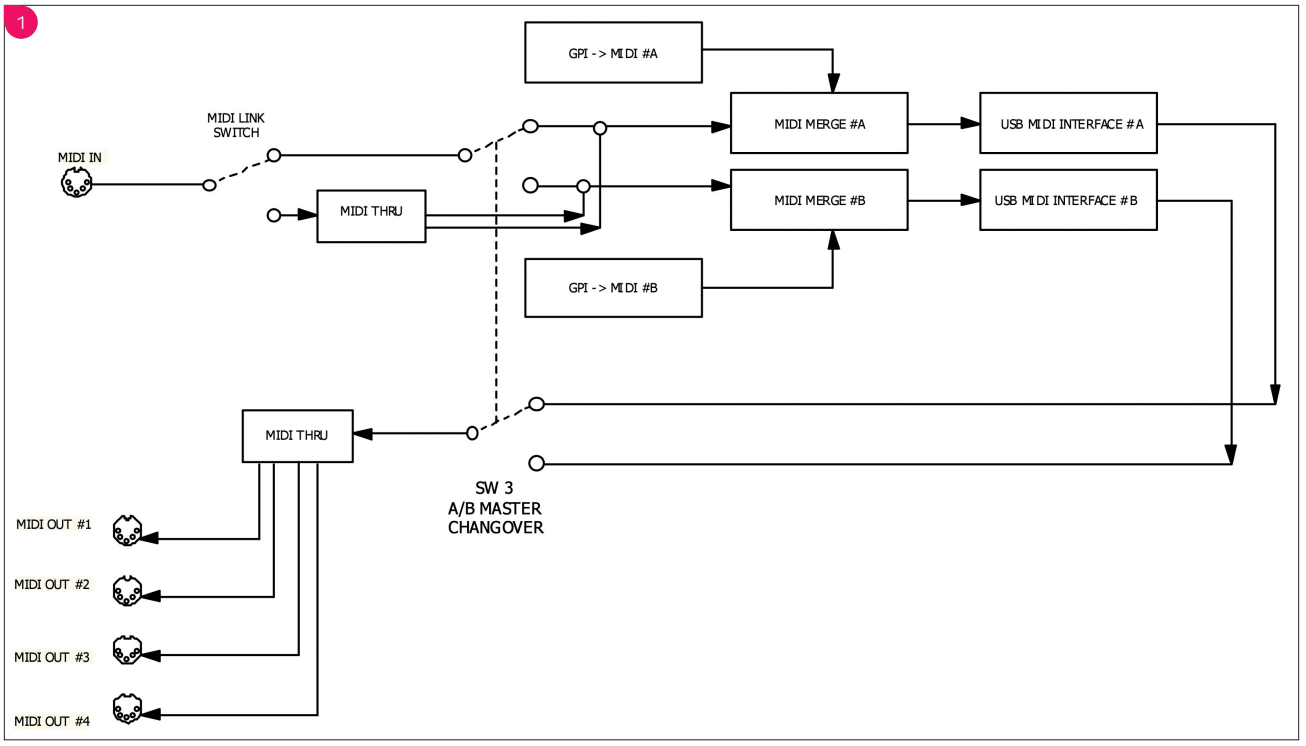
Thanks to Autograph having on average 60 computer systems running QLab out on hire at any one time, the XUSB-2 was developed out of the repeated need to supply a changeover solution. With the best will in the world and even the most stringent installation process, computers can and do fail. Avoiding a technical hitch during any of Autograph's shows has been of paramount importance to the company's practices. The result is not only something beyond a straightforward KVM switch, but is in fact a compact and ready-made product for a variety of scenarios where two computer systems are operating in a critical environment.

Constructed as another 1U 19" rack-mount unit, the XUSB-2 is designed to work alongside the XDANTE-1, or any of the other Signature Series units, to provide a complete control package for peace of mind. Conveniently, while I was visiting Tory, he also had two Mac Mini's installed in a 1U 19" Sonnet rack mount. This gave him a Primary Dante network to experiment with, but larger chassis are available for Primary and Secondary Dante networks. The XUSB-2 will also work with Windows computer systems and Macs. Either way, you can quickly see how these units add up to provide a very neat and secure playback system for any show.

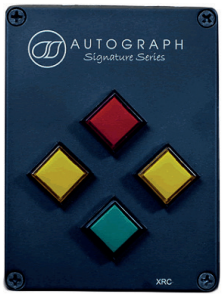
The XUSB-2 is designed to switch between two computer systems by incorporating a USB keyboard and mouse, dual display outputs, MIDI inputs and outputs and contact closure control via GPI. There are up to eight GPI inputs available, which along with the Joystick Go, Stop, Previous and Next input offer a total of 12 inputs. The current model, which we were using, offers dual display ports for each computer via VGA, but Autograph is already working on supporting digital video for the new model. At the moment there is a single IEC power connection connecting to two redundant PSUs, but the new model will also offer independent IECs to connect to these supplies.

The clever part of the XUSB-2 is that it first converts the GPI input information to MIDI information, which is combined with any MIDI input information via two MIDI merge units. This combined information then hits in-built dual redundant MIDI interfaces before the main changeover switch. This can be seen in the flow diagram shown in *Figure 1* overleaf. The MIDI information obviously fires simultaneously to both QLab systems, a little bit like hitting the keyboard at the same time but more accurately. While the audio won't be phase accurate and the two systems aren't running from the same clock, if you switch from one system to the other, the audio may only have a slight glitch. Tory comments that the audio is surprisingly close and this method results in the two computer systems remaining independent without any interconnectivity.

The front panel design of the XUSB-2 is similar in style and layout to the XDANTE-1 for easy operation, should you find yourself in an emergency situation. The centrally-located master changeover button is labelled PC2, which if activated changes all the connections from PC1 to PC2 and becomes illuminated. This includes the KVM, MIDI and GPI connections, unless the DATA or KVM buttons aren't engaged. When illuminated, the DATA button allows the change of MIDI and GPI control without switching the KVM facilities. Likewise, when illuminated the KVM button allows the changeover of keyboard, mouse, and video displays without switching the MIDI and GPI facilities.



XMADI-1 Changeover System



XRC Remote Controller

Apart from these main controls, some monitoring information can been viewed from the front panel. There is an LCD display showing the current default MIDI channel and a record of the last MIDI event to have occurred. There are also a number of LED indicators for any MIDI, GPI or Joystick activity, as well as PSU status. Like the XDANTE-1 however, it should be noted that the XUSB-2 doesn't offer any form of automatic switching. Should a computer system go down, a manual input is required to switch to the other.

Autograph offers a 15-pin connector on the rear panel, which accesses the Go, Stop, Previous and Next buttons. Tory explains that the new XUSB-2 model will offer this control via an RJ45 connector. The rear panel also offers a remote connection, which via a 4-pin XLR connection offers a relay output for changeover of other Signature Series units, such as the XDANTE-1. Finally, besides the two USB ports for each computer for keyboard/mouse and GPI/MIDI connections, there are two USB connections on the front panel which aren't switched, for convenient connection of removable storage to each computer.

XMADI-1 CHANGEOVER SYSTEM

As the name suggests, the XMADI-1 is a MADI changeover system, which can receive four MADI streams in and provide two outputs, each with a mirrored output. As with any MADI stream, that's 64 channels at 48kHz and 32 channels at 96kHz. The mirrored outputs allow the switched output to be sent to two different locations, such as redundant mixing consoles.

OTHER SIGNATURE SERIES DEVICES

In addition to XDANTE-1 and XUSB-2, there are the XRC remote controllers (three versions with various button configurations) and the most recent addition to the range, the AES160-D. This is a Dante-to-AES converter, (i.e. Dante in/AES out, one way) equipped with two fully-redundant PSUs with separate inputs, fully configurable in Dante controller.

CONCLUSION

Some of the best inventions come from trying to solve an inherent problem in the most direct and simplest form. The Signature Series from Autograph is just that. Not only did the company's engineers decide that there wasn't a suitable product on the market to execute their desired levels of redundancy in playback, but they've developed an

AES 160-D Dante AES3 output unit

off-the-shelf solution which is both flexible and simple to use. After all, complexity isn't your friend when you hit a glitch and your show is in jeopardy of coming to an early close.

While there are some scenarios in other areas of the live industry where a degree of automatic failure detection and more accurate time-domain clocking would be preferential, these are aspects that could equally result in the downfall of a system. By keeping the two systems you are changing between strictly independent, it removes any possibility that a failure could effect both of your systems. For the theatre world, mostly working with short cues, the Signature Series certainly offers complete peace of mind.

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