

Soundscape R.Ed

Len Davies takes a detailed look at the latest in Soundscape DAW design.

Ever since I first bought a Soundscape system back in 1993 I've followed its steady growth and success and waited anxiously for each new development. The SSHDR1 continues to evolve with regular software upgrades and third-party plug-in involvement, along with collaborations with some of the various video editing systems, but the technological advancements in the industry since the system's conception warranted a re-invention of the Soundscape format to embrace these enhancements, and so R.Ed was born.

R.Ed, R.Ed Ready

Upon opening the box I was pleasantly surprised to still see the familiar 2U chassis with the two removable drive carriers, although sporting the new R.Ed logo on the left-hand side. However, the real surprises came when I looked at the rear panel, as little of the old design remains apart from the 37-pin PC interface socket, Midi in, out, and thru, analogue In 1 & 2 and Out 1, 2, 3, and 4, and the AES/EBU digital equivalent. There are now three TDIF sockets providing 24 digital ins and outs; a 68-pin mini centronics expansion port for bi-directional superclock; L/R clock signal connections and a

512-channel TDM audio bus; optional RS422 serial port for machine control and slave via Sony nine-pin protocols, with LTC and VITC ins and outs; and finally wordclock and superclock in and out.

Specifications

The R.Ed has the capability of 16-bit or 24-bit recording with sampling rates up to 96k, while allowing up to 32 tracks to be recorded simultaneously (16 at 96k depending on the hard drive used). Chips from the Motorola 56300 family provide the DSP for recording and mixing, which are 24-bit fixed point with 56-bit calculation accuracy. The comprehensive manual provides specifica-

tion data for both the R.Ed and the SSHDR1 (logically as most of the control functions are basically the same), and the 24-bit specs read quite impressively over the already impressive SSHDR1 – but, logically, the 24-bit system should show the stronger numbers.

As with the SSHDR1, the host PC to be used does not need to be high-powered as the rack unit of the R.Ed itself carries the DSP (which can be further enhanced by installing additional Mixtreme or Mixpander cards if you wish) – so the PC is purely for control and monitor functions, along with interfacing to back-up devices. The interface card that comes with the unit must be installed into the PC, and nothing could be easier as it uses a unique address of 250H – DMA or IRQ settings are not required, as Soundscape doesn't use them. Using the 'Add New Hardware' function, and following the instructions in the manual, the card takes only a few minutes to install, as does the software that comes on a CD-Rom along with some of the plug-ins.

On powering up the system, the first thing that strikes you is how familiar it all feels. Granted, I've been a Soundscape user for a long time, but I still remember my first experience with the SSHDR1 version 1.14, and I can imagine that first-time R.Ed users will share the same feeling of security I felt

back then.

The screen is self explanatory, whether you use the manual or not, and the familiar toolbars showing the move,

copy, cut, glue, fade, reverse, normalise, (among others) make the transition into the system simplicity itself. This and the capability to customise your own toolbars and the manner in which the system operates means in no time it will be dancing to your tune.

The Version 2 Mixer

The flexibility of the Soundscape system was greatly enhanced by the creation of the v2 mixer, which provides the possibility of creating an infinite amount of mixers depending on the users needs, and this has been further enhanced in R.Ed with the additions of some quite specific configurations. The system operates from unique



codes generated for your Soundscape unit, and the mixer won't operate without this, and you'll hear no sound until a mixer is activated. There are a substantial amount of pre-prepared mixers to choose from, including surround sound, 16, 24, and 32 tracks, MS encode and decode (nice touch that one), guitar amp simulators, seven-band graphic equalisers, and so on, but I feel it's nicer to create your own. Upon selecting 'New Mixer' you are literally presented with a blank canvas upon which your mixer can be built. By selecting the 'create new mixer column or element' icon on the toolbar, and pressing 'E' to activate the edit mode (or pressing the edit window), a mouse click on a blank mixer column produces the options. These include inputs of mono, stereo, four-channel, six-channel or eight-channel, routing to outputs of mono, mono with stereo panning, stereo, four-channel, six-channel, eight-channel, and 4:1 and 5:1 surround modes. Next comes the fun part – your own customising. Your mixer can literally be any configuration you like (depending on the DSP), and no two arrangements need use the same mixer as all parameters can be saved and instantly loaded from disc. As well as two-band parametric EQ, faders, peak meters, pre/post send sliders, and sample delay lines, there is the possibility of including optional real-time mixer DSP effects plug-ins such as the Audio Toolbox bundle (chorus, flanger, dynamics, delays and dither), among a host of other third party plug-ins from the likes of Cedar, Apogee, and Aphex (to name but three). Bear in mind that all of these eat up the DSP quite quickly, so a bit of forethought is needed. All of the processors have the capability to store and recall to disk any settings, and apart from the very useable examples provided, it's possible to build up your own customised library very quickly.

Routing in and out of a channel is simplicity itself: by selecting the 'change mixer element assignment' tool (the loudspeaker icon) and activating Edit as before, access to the menus is allowed, by clicking the mouse over the input source. This will show a choice of TDIF inputs (one to 24, two digital inputs, two analogue inputs, one or any of 16 internal buses), with outputs at the bottom of the channel offering TDIF outputs (one to 24, four digital outputs, four analogue outputs, or any of the 16 buses), allowing quite complicated routing scenarios to be established if needed. This allows the creation of the most sophisticated instant recall mixer, depending on the needs of the user. Should R.Ed be used as a standalone unit mixing direct to stereo or surround, the latest addition to the version 3.04 software will be a boon, as Soundscape has just added total automation.

The Recording Procedure

As with the SSHDR1, clicking the right mouse button on the left of the arrange window in the prepared track windows allows the creation of record tracks in either mono or stereo, by specific numbers. 'All' instantly creates the appropriate amount of stereo or mono tracks (up to 32), depending on how your mixer is configured. A click with the right mouse button arms or disarms all tracks (as do the bottom commands in the 'tape' menu at the top of

the screen), while the left mouse button arms single tracks or stereo pairs independently. The left and right locators are used to select the length of recording (either in SMPTE or bars time axis, selectable in the settings menu), and the record button does the rest. R.Ed can operate either as MTC or Midiclock master, and MTC chase or trigger slave – the difference being that 'chase' literally follows any wow or flutter of the source timecode tape, slowing down and speeding up, sometimes quite amusingly, as the master machine hiccups; while 'trigger' is for use when an external device provides a digital clock reference. There is a sync option that provides access to VITC and LTC master/slave, RS422 master/slave (Sony nine-pin protocol) and video sync (blackburst) which should cover most other eventualities. Really for the first time, I attempted to record 32 tracks in one hit on a hard disk, and the system performed flawlessly, and did so for the duration of the recordings I undertook. While it's true that I've only been recording eight tracks at a time, I've been playing back 32 simultaneous tracks regularly without one stutter, and *no* crashes.

The Automation System

We all take the word 'automation' for granted these days, as it's pretty much assumed that any facility worth its salt will feature it in some form. Long gone are the days when somebody had to remember to mute an instrument or change a level at certain points in the mix. The Soundscape team has taken it one step further, however, and the automation system is not timecode based, as most others are, but relates to the direct position in the timeline of the part it's affecting. Should that part be copied or moved, the automation track will keep all of the movements intact, (provided they're kept together) – meaning that sections of songs can be copied fully-automated for simplicity.

In order for the automation to work it has to be enabled by activating the new 'Automation Enable' button next to the mixer edit button, and from there the automation works in much the same way as an audio track. An automation track is created the same way as an audio track, by clicking the right mouse button over the left side of the arrangement window where a choice of 'create audio' or 'automation track' is offered. However, whereas the audio tracks are limited to 32, the automation tracks allow up to 128 (being the maximum number of possible channels on any mixer), and the automation specifically controls the functions on these.

Once the automation track(s) are created, it's a simple matter of arming them, hitting record, making the moves on the automatable elements of the mixer, and stopping. This generates an automation take on the Sound-disk which is easily distinguishable from an audio take.

During the course of the review, I discovered that not only volume, pan, mute, bypass, and pre/post send were affected by the automation, but also the EQ parameters and delay effect parameters could be adjusted in real time – greatly increasing the possibilities of the types of creative effects that are expected in many of today's productions. The automation is written as nodes in the actual



take, and these are editable once recorded by simply clicking on the automation line to add a node and moving it as required to adjust the data.

There are three automation recording modes:

- Normal record: where only the mixer controller's changes are recorded.
- Touch record: re-records all events of active Parts that refer to the same automation track into the newly recorded Part/Take. From the moment a knob is touched, the changes will be recorded overriding all existing events of the same knob. It automatically returns to the previously recorded level within the specified 'knob auto return time', and proceeds with the same function as before the knob was touched as soon as the knob is released.
- Touch record till stop: re-records all events of active Parts that refer to the same automation track into the newly recorded Part/Take. From the moment a knob is touched, the knob moves will be recorded, overriding all existing events of the same knob until the tape transport is stopped.

The system also features a snapshot button which will record the status of all automatable controls of armed

SoundScape takes us through the new Mixpander PCI card

"The SoundScape Mixpander PCI card provides a considerable additional DSP processing power for SoundScape R.Ed (and the older SSHDR1-Plus system). It connects to the 512-channel Expansion Bus Port on the rear panel of the rack unit via a special cable (looks like a SCSI cable but isn't) and integrates with the SoundScape Mixer transparently, taking advantage of all the real-time DSP effects plug-ins. The V3.0 Dynamic Mix Automation feature in the SSEditor software extends automatically to Mixpander and external control of mixing and effects is provided through SoundScape's Console Manager.

"Mixpander is designed to add serious amounts of additional DSP processing to cope with any size of mixing task and has the power and bussing structure that we think can be compared to that of top-flight digital consoles, plus a rack of outboard effects processor units. Mixpander has full 24-bit/96k operation for complete compatibility with R.Ed, and this makes R.Ed the only system available that is able to run DSP-based real-time plug-ins like the TC Reverb and TC Dynamizer plus other effects from Apogee, Aphex, Arboretum Systems, Wave Mechanics and Sonic Timeworks all at 96k.

"Mixpander/9 contains nine of the latest Motorola 563xx DSPs on both sides of a full-length PCI card. The total processing capability is up to 2.6 GIPS (Giga Instructions Per Second). This is more than 11 times the processing capability that's already included inside the R.Ed unit (15 times the processing power of an SSHDR1-Plus). Suffice to say, it's enough processing power to cope with even the largest mixing and effects processing jobs. Mixpander/5 contains five Motorola 563xx DSPs for up to 1.4 GIPS of processing power and is five times more powerful than the basic R.Ed." – SoundScape Digital Technology.

tracks – allowing a more flexible operation for scene intensive mixes. There is a lot more to this automation system than I've had time to explore and I'm sure that once it's used, you'll be hooked on its flexibility.

After Thoughts

R.Ed is capable of using four hard drives per system (up to a 137GB per disk, with two being removable), it does highlight one aspect that people tend to forget when they talk about non-linear systems. With the cost of hard drives constantly dropping, it makes it very cost effective to use hard drives in the same manner as tape has been traditionally used. A 30GB drive will hold over 64 hours of 24-bit/44.1k audio (or two hours per track of straight linear 32-track recording), which equates to possibly more than four reels of tape at over \$200 a time. When you consider that this hard drive only costs around \$400, it suddenly becomes very attractive to treat these mediums as if they were tape. We very rarely 'back-up' two-inch tape, and although I still love analogue, I feel the time will come when hard drives are considered in the same light. The stability of a system such as R.Ed represents a big leap towards that level of trust.

Taken as R.Ed

I'm the first to admit my love for this system. I said it with the SSHDR1, and I reinforce it with R.Ed, but only because it is 'that good'. SoundScape R.Ed is the ultimate hybrid, in that it adapts to the needs of the operator. If all you need is a basic 32-track multitrack recorder, then R.Ed can be exactly that at a very attractive price point, (when stacked up against other tape or hard disk-based systems). If your needs dictate a complete recording solution in a box, then R.Ed becomes an incredibly sophisticated system, with instant recall mixers built to your specification and the choice of stereo, surround or multitrack outputs in practically any format you desire. Combined with a hardware controller (a Mackie HUI or JL Cooper MCS-3800, for example), R.Ed appears to be a formidable system that would sit perfectly well in any facility, and the networking capability via TCP/IP allows the larger production facilities multiple studio access possibilities with minimum fuss. The ever increasing range of plug-ins allows full control at all levels, and the system interfaces easily with both music studios and the most complex post-production facility. All of which will surely guarantee that this new generation of SoundScape will achieve an even greater degree of success.



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Phone: (08) 9473 1222
SoundScape on WWW: 'www.soundscape-digital.com'

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