

KEYBOARD Reports

Muse Research Receptor

H A R D W A R E H O S T F O R S O F T W A R E P L U G - I N S

Note the separate level controls for master outs, headphones, and input gain

Program effects parameters from the 2 x 24 LCD in a pinch

Six data-entry knobs (with push switches) clustered around the display speed up programming



Recessed USB port hugs iLok keys tightly

Big buttons and readable legends are a plus in live performance

The front panel input is a high-impedance type

Two fans are essential to make sure Receptor runs warm, not hot

Stereo analog I/O complements the stereo S/PDIF I/O

The Ethernet connector talks to your computer

Hook up a monitor, mouse, and QWERTY keyboard here



The four USB 2.0 ports handle iLok, various USB keyboards, even the Roland GI-20 guitar interface

ADAT connector supports stereo now, multichannel in an upcoming rev

by Craig Anderton

In the beginning there was hardware, and it was good — but bulky and expensive. Then came the computer, and it too was good (except, of course, when it threw a compu-tantrum). Then Digidesign said, “Lo, let there be a synthesizer that lives in your computer,” and thus Turbosynth was born . . . as was the era of virtual instruments.

Now soft synths and signal processor plug-ins are everywhere. Companies have turned

the creativity spigot on full, and a plethora of processors have poured out, accompanied by soft synths whose performance sometimes even exceeds that of hardware. Some companies have watched their hardware sales drop, while others have joined the plug-in parade (Korg Legacy, Lexicon Pantheon reverb, etc.). And now we’re face to face with a product that brings us full circle: Receptor, from Muse Research, is a hardware product designed to run software plug-ins.

Like DSound’s RT Player Pro and Steinberg’s V-Stack — two software programs that host plug-ins for live performance — Receptor offers an environment with routing, mixing, and MIDI control. But unlike them, Receptor doesn’t need a computer to do its thing in live performance (it even has rear-panel keyboard, mouse, and video monitor connectors if you want to access plug-in parameters graphically). However, you will need a computer to get the most out of Receptor; it’s the only way you can load new plug-ins, purchase the full versions of demo plug-ins, and update the system or software.

Hardware VST plug-in host.

Pros: Solid build quality. Good support via multiple internet sites. Very low potential latency. Monitor/mouse/keyboard connectors for tweaking plug-in parameters without a computer. Stable, Linux-based OS. Good selection of bundled plug-ins, option to expand by purchasing others. Expandable internal memory. Multitimbral. Intelligent MIDI implementation.

Cons: No “tool tips” with Remote Control software. Multiple outs aren’t working yet. Not all plug-ins are Receptor-compatible. No XLR mic in.

Muse Research, 650-326-540, www.museresearch.com

\$1,599

There are two effects send sliders for each of the main channels

Insert effects have four choices of series/parallel configurations

The insert slots have edit, bypass, and switch effect position buttons



Save single or multi patches

Even the master bus lets you insert up to three effects

The 16 channels can host instruments or connect to the analog/digital audio inputs

Two effects buses handle up to three insert effects, like the main channels

Overview

When you unpack Receptor, you find a CD with software, a USB cable, two rack ears, a detachable AC line cord, and a few manuals for some of the included plug-ins. The only Receptor documentation is on the CD, as a PDF file. While the accessorizing is not particularly impressive, the unit itself is. It's far beefier than I expected, with significant I/O (see Vital Stats), a 2U chassis, 11 programming buttons, six programming knobs, and input/output level controls. It feels substantial — at 15 lbs., it's not lightweight — and it's a serious computer. Two rear-panel fans keep heat under control; they're not completely silent, but noise is a moot point in a live venue.

Incidentally, the Receptor is Linux-powered.

Taking both hardware and software into account, this is no toy. Also, the Remote Control software included on the distribution CD is first class. Overall, this is a product that seems to have had some real thought put into it. (Given that it didn't appear until about a year and a half after it was first shown, I don't think anyone will accuse Muse of rushing the box into production.)

Getting Plugged In

Before Receptor came out, I wondered how they would deal with plug-ins that required something like a periodic insertion of a CD for authorization. The answer is: They don't. Version 1.0 comes with 61 free processors and 42 free instruments, and 23 more “pre-

mium” processors and 20 instruments. These run in demo mode for 30 days, and unlimited versions can be purchased online from www.plugorama.com. Purchasing loads authorizations onto the included iLok (so yes, you can move your authorizations to a different Receptor).

However, the company has tested several plug-ins that aren't “Receptorized,” often with satisfactory results. For example, when Receptor is talking with your computer, it may be (and usually is) possible to install plug-ins from CD-ROM. Muse reports being able to load AmpliTube, SampleTank, Trilogy, Atmosphere, and several other non-Receptorized plug-ins. The related web sites (www.museresearch.com and www.plugorama.com) are reasonably good

Vital Stats

I/O	Balanced analog left and right (1/4" TRS phone jacks) in/out, S/PDIF in/out, ADAT optical out, MIDI in/out/thru, VGA monitor out (1024 x 768), mouse serial port, QWERTY keyboard serial port, five USB 2.0 ports, 100 base-T Ethernet jack, front panel hi-Z instrument input, front panel headphone output
Remote Control software OS support	Mac OS 9, X; Windows XP, 2000
Computer communications	Ethernet
Internal hard drive	40GB
Internal RAM	256MB, expandable to 2GB with standard DIMM PC memory
Internal microprocessor	Athlon XP 2500+ Supported sample rates 44.1, 48, 96kHz
Input level metering	Tri-color LED
Maximum number of patch banks	16,384
Number of patches per bank	128
Level controls	Input level, master output level (affects both Receptor outs and headphone outs)
Analog converter resolution/sampling rate	24 bits, 96kHz
Internal display	2 line x 24 character backlit LCD
Buffers	32, 64, 128, 256 samples
Tempo sync	External MIDI clock
Power supply	Internal
Dimensions/weight	17.5" W x 12.5" D x 5.8" H; 15 lbs.

about keeping users informed as to what has, and has not, been tested with Receptor.

If you already have a significant investment in plug-ins, it's fortunate that several companies offer crossgrades for free or a nominal fee. But there's a catch: Receptor uses Windows-type .DLL files for the plugs, so if you're a Mac fan, you'll need to crossgrade to a Windows version of the plug. Happily, most modern Mac plugs have Windows equivalents.

There's already some serious industry support. Some of the premium instruments include offerings from Native Instruments (B4, FM7, Kompakt), Arturia's CS-80V, GMedia's M-Tron, LinPlug's Albino 2, Applied Acoustics' Lounge Lizard EP-2, RGC Audio's z3ta+, and others. The freebies are well-known in the plug-in world, like RGC's Triangle II and Green Oaks' Crystal. Premium processors include plugs from PSP Audioware, WaveArts, Kjaerhus Audio, Ohm Force, and others (none from Waves). Additional well-known developers include fxpansion, Image-Line, and Sonic Implants.

This kind of support is crucial, because although it is possible to use unsupported plug-ins, the company stresses that you're on your own, and that some plugs may cause the system to crash (in which case they promise to walk you through the process of waking it up again).

You'll also notice there aren't any "major league" sampler plug-ins like Kontakt, MachFive, VSampler, etc., although Kompakt will load Kontakt libraries. According to the company, they're addressing this. Streaming from an

external USB drive seems iffy; a more likely scenario would be transferring samples via Ethernet into Receptor's internal hard drive, and streaming from there (Kompakt already streams sample's from Receptor's internal disk). Another option would be maxing out the RAM and stuffing your samples there.

And for the criminally-minded out there, we need to address the question of whether it will run cracks. The documentation handles the question well, by being truthful enough to say that you probably can — then being truthful enough to explain why the instability they can add to a finely-tuned system like Receptor's means taking a serious risk in live performance. Bottom line: If you're using Receptor because you want a reliable setup, using cracks is a *stupid* idea, not just a sleazy one.

Architecture

Receptor is conceptually the same as a multitimbral sound module with a mixer, which is evident from the Muse Control graphical user interface. There are 16 channels (one for each MIDI channel, although these can be remapped); the input can be a virtual instrument, or one of the audio inputs (line, S/PDIF, high-Z instrument input — yes, that means guitars). Although an input can go to any number of channels, you can only use two out of the three audio inputs simultaneously. In other words, you can have one or more channels listening to the analog line ins and another doing the instrument input, but then you won't be able to assign S/PDIF.

Each channel has a pan slider, master fader, separate solo and mute buttons, meters, a bypass button (which bypasses all effects in the channel), and three insert effects slots (drawing from currently loaded plug-ins), which can be configured in series, parallel, or a combination (A+B in series, paralleled with C or B+C in series, paralleled with A). There are also edit and bypass buttons, as well as a “switch” function that swaps the effects in the A and B slots, B and C slots, or A and C slots.

Two sends per channel with pre/post switches feed two aux effects buses. These can also have three insert effects, set up like the main channels. Finally, a master output bus also has the option for three insert effects. As expected, the aux effects bus and master channels have no send controls.

Saving options are very flexible. You can save a complete multi setup, an individual instrument (useful if you want to create a multi out of instruments you’ve saved), and both instrument and effects patches. It’s easy to create banks of patches for specialized purposes, say, one for studio use and one for the road.

In addition to the GUI’s Mix (mixer) view, there are tabs for Setup and Editing. Editing shows all plug-ins that are loaded; double-click on one to bring up the editing interface. Choose from one of three editing modes: VST, where the standard plug-in interface appears; Learn mode, where you set up plug-ins for external MIDI control, front panel soft knob assignments, and parameter renaming; and “Faceless” mode, which simply shows a list of the parameters and values (typically used for effects that have no “pretty” interface, like the ones from mda). The Setup tab duplicates the front-panel setup function, and simplifies “housekeeping.”

MIDI re-mapping is simple. For each instrument, you can set the channel it listens to — great for “stacking” instrument sounds. You can also direct data to a particular channel within the plug-in. This is useful if the plug-in responds differently when sent data on different channels.

Hookup and Programming

Receptor eschews USB and FireWire in favor of Ethernet as a way of talking to your computer. With Mac OS 9, you hook up via AppleTalk; with OS X, AppleTalk or Samba. I opted for connecting Receptor up to a Windows XP-based Digital Audio Wave notebook computer via a simple Ethernet crossover cable. I’m no networking expert, and I found the documentation somewhat opaque, but



It's easy to remap incoming MIDI channels to various instruments, as well as send data to any of the instrument's available MIDI channels.

nonetheless managed to get things working. I suspect it would have been more complex had the Ethernet port already been in use, as that would have necessitated a router or switcher. But I must admit it was gratifying to have my first real networking experience be a successful one.

Hooking up audio is simple, because you really don't have too many options other than stereo audio, stereo S/PDIF, and stereo ADAT out where the left and right signals appear on ADAT channels 1 and 2. So why bother with an ADAT connector? Muse promises multiple outs in a future update.

Perhaps not surprisingly, there's no “loop-back” to access Receptor from within a sequencer over Ethernet. You *can* integrate Receptor with a sequencer as you would any other hardware processor or sound module by driving it from a MIDI interface and bringing inputs back into an audio in, although the stereo I/O is limiting. And even when the multiple output update happens, you still won't have multiple inputs.

As to programming, it's actually not hard to program Receptor from the front panel. You can see metering (which is extensive — see CPU consumption for individual effects, signal levels, etc.), effects parameters, and everything else needed to make tweaks and monitor operations. Sure, it's more convenient to use the Remote Control software on a computer or hook up a monitor, mouse, or QWERTY keyboard directly to Receptor, but I would have no qualms about tweaking Receptor on the road without GUI assistance.

Storage

Plug-ins, software, and data live on the internal 40GB hard drive, making it easy to update. The system boots fast — as Muse likes to point out, it can reboot a lot faster than a computer if someone kicks out the AC. But that's not quite fair; I think most musicians in an equivalent onstage situation would be using a laptop, whose internal battery would keep the juice flowing. On the other hand, if someone kicks the Receptor itself, I'd give it far, far better odds of survival than any laptop.

The unit comes with 256MB of RAM, but can be expanded up to 2GB using standard DIMM memory. If you expect to use a sampler and have lots of sounds available, this is an important feature.

MIDI Control

Virtually all of the Mixer parameters can be MIDI-controlled. Muse gets bonus points for allowing both fine and coarse parameter control, which makes "stair-stepping" a thing of the past. However, note that this happens only with external MIDI control, not the onboard or front panel controls. Program changes call up various patches.

As to plug-in parameter control, the main method involves using NRPNs, which Receptor assigns automatically to plug-in parameters. For those who lack the chops to program NRPN messages in sequencers or hardware controllers, you could also use 16 standard MIDI controllers for dynamic parameter control. The drawback is that these may control different parameters in different plug-ins. But overall, Muse has done a very good job of providing serious MIDI control.

Conclusions

It's tempting to compare Receptor with Creamware's Noah, Roland's VariOS, or Soundart's Chameleon, but that'd be a mistake; those are all closed systems that can run only the software written specifically for them. Receptor is a far more open system, given that it runs a huge range of VST plug-ins, and it's a serious computer with expandable RAM and networking options (yes, you can network more than one).

Currently, the only apples-to-apples competition is Manifold Labs' Plugzilla, which has also just been released but at a considerably higher price point. Having not had a chance to work with it, I can't provide any meaningful comparison. [Keyboard has requested a Plugzilla for review, which we've yet to receive.] RT Player Pro and V-Stack are competition too, but they need a com-

puter host. They're fine apps, but for road use, I'd take Receptor over a laptop in terms of survival skills; compared to a small computer like a Shuttle PC, remember that Receptor doesn't need a display. I think those who are skittish about using a computer live would be comfortable with Receptor.

Muse Research is a new, one-product company, which might raise a few concerns. But the people behind it are industry veterans from Opcode, E-mu, and Creative Labs, so they've been around the block a few times. And it shows — not just in the build quality, but also in the partners they've been able to round up, and the professional level of web support.

I wrestled with whether this deserves a Key Buy, which is an honor we don't take lightly. At first, I thought using an iLok should disqualify it — what if it's 30 minutes to show time and you can't find your iLok? But realistically, the same applies to any device that uses custom cables, a boot diskette, or anything that's not off-the-shelf. As to the price (we like Key Buys to be cost-effective), it's about the same as a decent laptop, and while Receptor doesn't have a nice LCD color screen or let you do email after the gig, it's so clearly optimized for live performance conditions (a laptop won't remember where you were and reboot to that same condition after a loss of power, but Receptor will) you're getting value received. Then I was about to nix it when I found the ADAT out didn't deliver multiple outs, but Muse says that's a priority and a fix is forthcoming soon.

Frankly, I wasn't expecting to be that impressed by Receptor; I figured it would either be a toy, or overkill. But it finds the sweet spot between those extremes, with the result being a quality piece of gear that is both deep and straightforward. If I was taking a rack of keyboards on the road, and could find plug-ins that did what I needed, integrating Receptor into the act would be a no-brainer. Simplicity, efficiency, and reliability sing a real siren song with live performance. And for these reasons, as well as the overall thoughtfulness with which the package is put together, Receptor earns a Key Buy. ■

Craig Anderton worked on this review in the eye of Hurricane Frances, only to find his hot tub missing once the storm passed.



The three insert effects can be arranged as any one of four different configurations.