

PURE

Your very own RenderDrive at a fraction of the cost? Surely not... BY PETE DRAPER

SUPPLIER Advanced Rendering Technology

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Unless you've been buried in a 3D hole for the past few years, you will undoubtedly have heard of ART's RenderDrive system: a standalone computer dedicated to rendering. It uses its own specialist hardware, a rendering PCI card. With a fast Ethernet connection to a computer and links to 3D software such as *max* and *Maya*, the end results are amazing – but at a cost. RenderDrive is too expensive for most 3D design houses.

So ART has cut down the system into something a little simpler but without sacrificing quality or much speed. The PCI card has been ripped out of RenderDrive and is now available as a standalone product named PURE. By plugging this baby into your

own PC, you've pretty much got your own RenderDrive on your desktop, at a fraction of the price, with all the features intact. And what features!

EASY IN

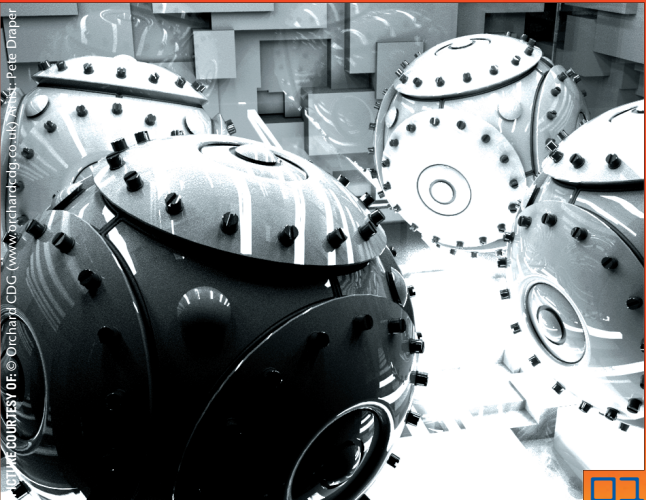
Installation is straightforward. The card we reviewed didn't like BIOS plug-and-play enabled, but this is pretty much negligible and is scheduled to be fixed. Tested with *3ds max 4*, *max* communicates to the PURE card via the RenderPipe render plug-in, while the rest of the features are integrated into *max* under relevant sections. To have any noticeable benefit when using PURE, all lights would have to be changed to RenderPipe lights – this is not as daunting as you would think, as a *max* script is included to do just that simply and easily, but currently it does not recognise instancing. All lights are now physically correct raytraced area lights, so to achieve a similar illumination as the standard *max* lights, you may need to adjust some parameters.

Standard *max* materials are

partially supported. PURE does not handle the raytrace material but it does support flat mirror, raytrace, reflect/refract and thin wall refraction maps, so some amendments will be required to bring an existing scene up to speed – this is not difficult and worth the effort for better results. More disappointingly, PURE has slight problems with the Morpher material, does not support Shadow/Light fall-off and has a limit on UVW maps that can be used in any one material. Most procedural textures are directly supported, but can produce slightly different results from a standard render. A provided custom map to integrate with the procedural irons out any problems and makes the procedural behave itself. There are other slight problems with the plug-in software, but nothing that a brief workaround can't fix – you just need to know the software's limitations, which, as it is software, will most likely be updated to solve any of the problems.

SPEEDY OUT

It has to be said the pros definitely outweigh these cons. PURE's render quality is unsurpassed and unbelievably fast. To produce soft-shadowed area lights previously in standard *max* you would have to use

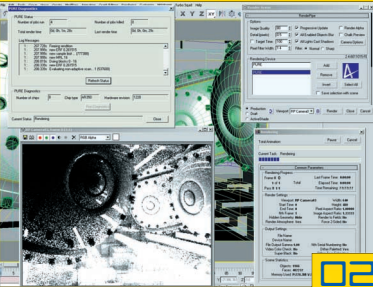


either a script or, producing pretty much the same result, a raytraced spotlight linked to a dummy that follows a circular path with one completion per frame. Couple this with scene motion blur to composite the soft shadows, and you're looking at astronomical render times. PURE does all this quickly and simply, casting physically correct light with inverse-square fall-off. Additionally, light sizes can be designed to whatever size is required. You can create them to the right size so they cast physically correct light, view them in the render and flare them to the receiving camera.

To render to the PURE card, simply change the default production renderer. This removes Render Elements (which are not currently supported) and replaces *max*'s Scanline Renderer with RenderPipe's rollout. Here you can set the quality of the render, adjust detail settings to reduce render times (similar to optimisation) and actually set a desired render time per frame (although the quality may obviously be reduced to reach these times).

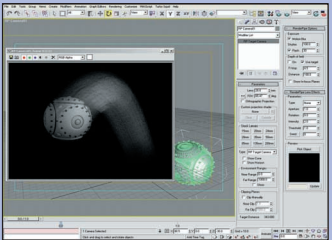
The quality spinner is one of the most useful features of the card: it enables you to degrade the render to give an impression of light and shade without having to concentrate on line detail. This

quality value should normally be set around 100 depending on the resolution of the render, but can be set as low as 0 for a preview and up to 1000 – but there is no way on this planet that you would produce a render of that magnitude! A chalk preview can also be flipped on to check lighting and shading. A very small cost in render time yields a progressive update of our scene: it builds up in blocks (depending on render size) from a kind of preview state up to the final render. This tells you immediately if anything is amiss with the image, so you can adjust the scene accordingly. Combine these rendering powers, the ability to link several machines with PURE cards into a network, and *max*'s own network rendering set-up, and you've got your own RenderDrive network!



DEEPLY MOVING

PURE'S DEPTH OF FIELD and motion blur knocks any 3D software for six. Accurately calculating the motion of the object, its surroundings and the viewing camera, PURE gives a motion-blur effect never seen before in a rendered image. A completely different approach to other motion-blur systems such as Object, Scene or Image which



either reproduce the object(s) over sub-frames or smear the image to give the impression of blur, PURE's motion blur is calculated by camera shutter speed and flash, and its quality can be increased to ridiculous levels if so required. Basically, *max*'s motion-blur settings stop at 16. PURE's start at 16.

PURE's motion blur takes real-world camera values to generate outstanding results.

THE QUALITY SPINNER ENABLES YOU TO GIVE AN IMPRESSION OF LIGHT AND SHADE

Overall, we cannot fault its quality. PURE is something most, if not all, 3D artists have dreamed of: fast, superb render quality and at an affordable price. The only faults we can put across are the (few) features not supported in *max*, yet *Maya* users may have more luck with it. Also, at the time of writing, this product was still at beta stage.

This card offers you an easy learning curve, handy and concise documentation, helpful sample files and friendly support with added wow factor. Oh, and did we mention you can use your own *RenderMan* camera light and material scripts? Superb! Definitely something for your Christmas list.



3Dworld Verdict



PROS

• Exceptional render quality • Very fast rendering • Easy to use

CONS

• Some *max* features not supported • Slight installation problem • Render cannot be paused to free CPU time

MINIMUM SYSTEM

- Windows 2000 or NT 4.0 (Service Pack 5 or higher)
- 400MHz Pentium processor
- 512MB RAM
- 550MB space on hard drive
- ATX power supply, 235W min
- 1 free full-length PCI slot (version 2.2-compliant)

MAIN FEATURES

- Fast hardware rendering
- Raytraced area lights
- Physically correct lighting
- Advanced motion blur
- Advanced depth of field
- Supports *RenderMan*, *max*, *Viz* and *Maya*