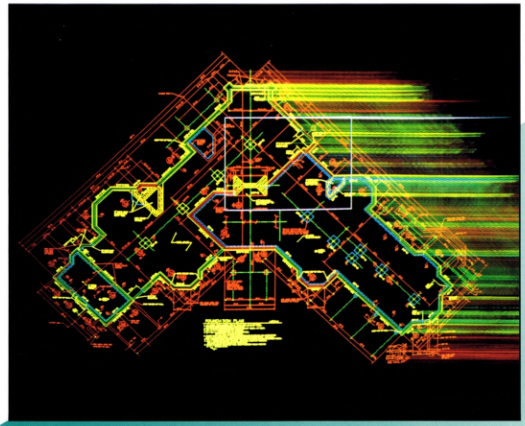
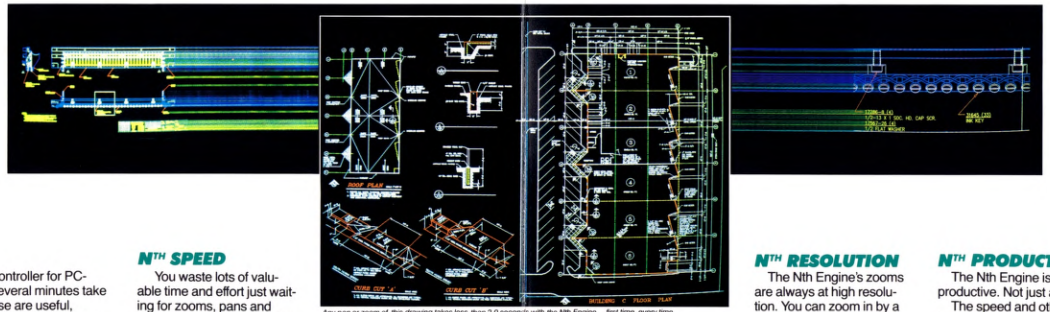
ZERO TO ZOOM IN 2 SECONDS!



NEVER WAIT ON ZOOMS AGAIN!

Nth ENGINE
DISPLAY CONTROLLER

ZERO TO ZOOM IN 2 SECONDS



Notice the fine resolution of this zoomed-in section of this complicated drawing. It, too, took less than 2 seconds!

Any pan or zoom of this drawing takes less than 2.0 seconds with the Nth Engine...first time, every time.

N^{TH} PERFORMANCE

The Nth Engine is an amazing display controller for PC-CAD. Zooms and pans that used to take several minutes take about 2 seconds with the Nth Engine. These are useful, "software-quality" zooms. They permit full access to drawing and editing *while you zoom and pan.* You can zoom in at least 32 times magnification with no loss of resolution.

Every real world drawing in this brochure can be zoomed in 2 seconds or less with the Nth Engine. On smaller drawings, it's almost instantaneous.

Imagine how productive you'd be and what better work you would do if you could zoom in and out and move around a drawing without worrying about wasted time. That's just what the Nth Engine is all about.

Studies (1) show that design productivity goes up substantially when the display responds in 2 seconds. And it can go up as much as 4 times more when responses are under 3/10 second! The mind doesn't wander and the brain works better when it doesn't have to wait.

The Nth Engine gives more time to work because there is no wait. The Nth result is better productivity and lower costs.

That's Nth Performance.

N^{TH} SPEED

You waste lots of valuable time and effort just waiting for zooms, pans and redraws. Wait no more! The Nth Engine zooms and pans through large drawings like these in 2 seconds or less. Small drawings are nearly instantaneous, and larger ones take only a couple of seconds more.

Other speed features? Sure.

Like the ability to draw and edit *within* the zooms. Zoom in to a detail...start a line...move to another detail on the far side of the drawing and finish it...all in a couple of seconds!

Or our Nth Birdseye.™ This window pops up instantly to show the entire drawing with the zoomed area highlighted. Never again will you get "lost" inside a complex drawing.

We don't merely claim that the Nth Engine is fast or that it's fast only at redraws. It is so fast that we are proud to tell you the zoom times on these real-world drawings.

That's real, productive Nth Speed.

N^{TH} RESOLUTION

The Nth Engine's zooms are always at high resolution. You can zoom in by a factor of 32 times or more and never get the useless, pixel-blossom effect produced by some other boards with "hardware pan and zoom." With the Nth Engine, your drawing's lines are just as fine zoomed-in as when zoomed-out, like the detail above and elsewhere in this brochure.

The Nth Engine is available in several resolutions. All are completely flicker-free (non-interlaced). All display 16 brilliant colors from a palette of 4096.

The Nth Engine gives you high performance on inexpensive monitors. For instance, the Model 752 produces images on inexpensive, multiscanning 13" monitors which are superb! You get no-wait zooms and a good looking screen without having to pay thousands of dollars extra on big,high-resolution screens.

Of course, the Nth Engine is also available for traditional, 19", high-resolution displays.

That's real, economical Nth Resolution!

N^{TH} PRODUCTIVITY

The Nth Engine is designed to make CAD work more productive. Not just a little more, but lots more!

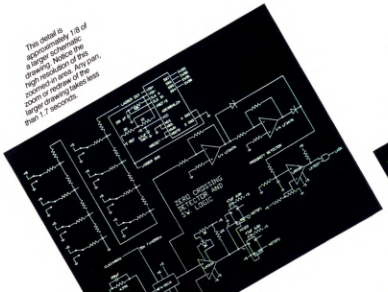
The speed and other features of the Nth Engine allow you to move easily around the drawing, examining and editing details. Now you can work as easily on a large CAD drawing as you used to with a sheet of paper.

The Nth Engine lets a CAD system respond the way the brain works. No longer do you have to work in a virtual straight-jacket, concentrating on just one small part of the drawing before "paying the price" (several minutes) to move on.

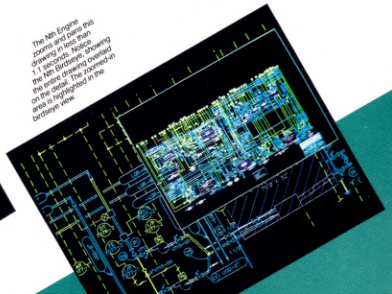
No longer must you take hours or even days zooming in and out in order to finish or clean up a drawing (such as checking all the connections). Or running endless check plots until you've finally caught all the detailed errors you simply couldn't see on the display.

The Nth Engine makes CAD fun again. Concentrate on your real work, not on all the tricks and gimmicks you now must use to try to speed up the drawing.

That's Nth Productivity.



This detail is approximately 1/8 of a larger schematic drawing. Notice the high resolution of this zoomed-in area. Any pan, zoom or redraw of the larger drawing takes less than 1.7 seconds.



The Nth Engine zooms and pans this drawing in less than 1.1 seconds. Notice the Nth Birdseye, showing the entire drawing overlaid on the detail. The zoomed-in area is highlighted in the birdseye view.

Nth ENGINE™
DISPLAY CONTROLLER

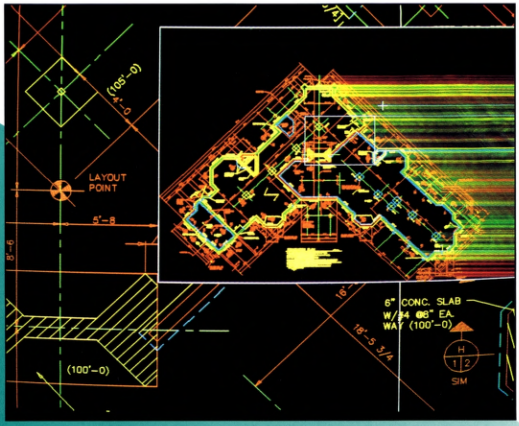
YOU'VE GOT TO SEE IT TO BELIEVE IT!

The Nth Engine is so fast and useful, you just won't believe it until you've seen it. The impact of its raw speed of zooms, pans and redraws, the birdseye window, the ease of getting around drawings and editing while zooming and panning are so hard to imagine that you really must see it. Try it out with one of your more difficult drawings. Then you'll believe!

Don't just take our word for it. See a demo today! For the name of your nearest Nth Engine dealer, more detailed information about the Nth Engine or one of our Technical Information Bulletins, **call 800/624-7552 (512/832-1944 inside Texas).**

The Nth Engine is priced from $2495 to $3995 (suggested U.S. retail; subject to change without notice).

N^{TH} SPEED... N^{TH} PERFORMANCE... N^{TH} RESOLUTION



A close up of the screen with the Nth Birdseye over the zoomed-in section. The detail area is highlighted on the screen. Any zoom-in or -out on this drawing is done by the Nth Engine in under 1.7 seconds with no loss of resolution.

THE Nth ENGINE IS REALLY THIS FAST!

SEE A DEMO TODAY AT YOUR LOCAL N^{TH} GRAPHICS DEALER:

Nth GRAPHICS

1807-C West Braker Lane Austin, TX 78758 (800) 624-7552
(In Texas 512/832-1944) Easylink 62928609

Bring Your Own Drawing!

Take the Nth Engine™ challenge. Bring your drawing to an Authorized Nth Engine Dealer to find out exactly how the Nth Engine can improve your PC CAD productivity.

Be sure to see an in-depth demonstration of these exclusive Nth Engine features:

- 2-second free-form, transparent pans & zooms
- The Nth Birdseye™ - helps you keep your place on large drawings
- Zoomslides™ - elimininates time-consuming check plots
- The Nth View™ Soft Plotter - a stand-alone program for quickly viewing CAD drawings without using CAD software.

And ask about our Nth Express Support policy - *including FREE Software Updates!*

So, **B.Y.O.D** to an Authorized Nth Engine Dealer listed below and see first-hand what an Nth Engine can do for you!

77840

Entre Computer Center
229 Dowlen Road
Beaumont, TX
77706
409-860-3333

TXE Automation
626 N. 16th St.
LaPorte, TX
77571
713-471-3170

Ashley Bracken & Associates
P.O. Box 294
Hunt, TX
78024
512-238-4806

Nth ENGINE™
DISPLAY CONTROLLER

Nth Graphics, *1807-C West Braker Lane, Austin, Texas 78758 • 800/624-7552 (512/832-1944 in Texas)*

SOFT PLOTTING with the Nth ENGINE

Zoomslides & Nth View

How would you like to eliminate the time-consuming hassle of producing check plots? Or keep your drawing in an electronic flat file which you can access anytime within seconds? Or eliminate paper drawings from your manufacturing area?

With the Nth Engines' unique Zoomslide files and related capabilities, you can do all that and more!

Zoomslides are view-only, or edit-protected, copies of your CAD drawing files made from the Nth Engine's onboard vector display list. They can be loaded and viewed either from within your CAD software program or Nth View.

These files load into the Nth Engine's display list RAM in a few seconds. Once loaded, they "look like" a real CAD drawing file to the Nth Engine. Therefore, the Nth Engine zooms and pans these view-only files as if they were active drawings. With some CAD programs, like AutoCAD, Zoomslides can be loaded while in the middle of an editing session. They can also be used to redline drawings to avoid check plots.

Nth View is a stand-alone program that eliminates the need to have expensive CAD software on a PC in order to look at drawings. This simple-to-use program effectively turns the computer into a fast, soft plotter or electronic flat file, allowing you to quickly page through Zoomslides and examine each one in detail. Just as you would hard copy, plotted drawings, but in higher resolution.

Zoomslides are made while your drawing is loaded into your CAD program. As long as you make a Zoomslide of your drawing after each editing session, your Zoomslide files will match your drawing files perfectly. If your computer is part of a local area network, this procedure will eliminate the problem of others having the wrong version of your drawing.

Fast-loads Zoomslides load 30 to 60 times faster than normal CAD drawings. On an 80286-based computer, large drawings load in about 5 to 10 seconds. Small drawings load in less than a second!

Zooms & Pans Zooms occur at Nth Speed (in about two seconds) on large drawings. The process of defining the desired zoom window is simple and natural, because there are no predefined zoom levels. And there is no need to use the keyboard or on-screen menus, although you can if you wish.

The Nth Engine permits you to zoom in by a factor of as much as 32x to 50x, depending on the resolution of your monitor, with no loss of resolution or "pixel blossom."

Redlining When using AutoCAD, Zoomslides also function as templates, enabling you to mark up or redline a drawing without generating time-consuming check plots. Zoomslide templates take only seconds to create and load, yet can save you untold hours not plotting! *See the back for details.*

Nth Birdseye The Nth Birdseye is an instant, pop-up window that holds a view of the entire drawing, with the zoomed-in area highlighted.

Not only does it help you keep your place in a large drawing, but you can also initiate pans and zooms from within it. It can be sized up or down, placed anywhere on the screen, or turned off.

Edit Protection Zoomslides are fully edit-protected, preventing inadvertent or unauthorized modifications to your drawings.

Color or Level On/Off With AutoCAD, colors can be turned on and off at Nth Speed to reduce complexity. With VersaCAD, levels turn on and off at Nth Speed.

Point & Shoot Nth View is so easy to use that you don't even need to know how to type. Just point and shoot, to select a command from the instant, pop-up comand window.

The window also contains a list of all the Zoomslides in the system. Zoomslides are simple to load. Just put the cursor on the filename and press the button on your mouse or puck. Or use keyboard commands.

Script Files Nth View lets you string Zoomslides together to produce a slide show of your work. This is useful for presentations to clients and management.

DBMS Accessibility Nth View gives you the option to access Zoomslides through PC database management programs.

Input Devices You can use a variety of input devices for cursor control. Use a Microsoft-compatible mouse, or any of a number of digitizers with either a multiple button puck or a stylus.

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Free Software Updates Nth View is covered under your one year limited warranty. After you register your Nth Engine, you will automatically receive all software updates to the Nth Engine and Nth View - FREE!

Price FREE! FREE! FREE! Zoomslides and Nth View are part of the Nth Engine software. So, they are free to all current Nth Engine owners, as well as to new owners.

USING ZOOMSLIDES FOR REDLINING

When used with AutoCAD, Zoomslides can be used as templates to eliminate one of the most time-consuming aspects of CAD operation — check plots.

Until now, check plots were the only practical way to check an entire drawing for errors and make comments. By using Zoomslides in template mode, you can now mark changes on your drawing or compare related details of different drawings, without going through the time, cost and trouble associated with plotting or loading large drawings. And drawing integrity is maintained.

The uses for Zoomslides as templates are limited only by your imagination. Here are just a few examples of how this unique Zoomslide capability can benefit you:

Management Review AutoCAD managers can now make comments on a number of Zoomslides without ever having to wait around for a check plot or for a drawing to load. When using Zoomslides as templates, the CAD operator simply loads the manager's comments on top of the active, original drawing to quickly and accurately input any changes.

Client Presentations As a client reviews a project in detail, you can use the template mode to make changes or comments directly on the drawing as it is being discussed. Since the client no longer has to wait to see how revisions will affect the drawing, project turnaround time is significantly decreased.

Drawing Coordination Large projects involving several individuals can be easily coordinated using Zoomslides. For example, an architect can send a Zoomslide of a drawing to a consultant who then makes a template for developing a plumbing plan. By having all components of a drawing accessible to those involved in the project, even the most complex designs become easy to manage.

Nth VIEW & ZOOMSLIDE INDUSTRY APPLICATIONS

There's an application for Nth View and Zoomslides anytime you want a quick, detailed look at CAD drawings.

Here are some of the ways Nth View can be used.

Manufacturing Use A PC on the shop floor equipped with Nth View and an Nth Engine permits machine operators to quickly check design details of parts without referring to paper drawings.

Quality Control can use an Nth View terminal to check specifications for incoming parts. And if the station is tied to a Local Area Network, the Nth View system can virtually eliminate the problem of having the wrong revision level of a drawing on the shop floor.

Using Nth View in a local area network permits management, engineering, purchasing, receiving, quality control and assembly to have instant access to current drawings, effectively tying all integral company areas together.

This is an immediate benefit for the assembly department, which traditionally complains of being "the last to know".

Architectural Use Nth View is very useful for client presentations. A client can be shown the drawings associated with a project in rapid succession. Each drawing can be zoomed in extreme detail to insure client understanding for approvals.

Or you can script Zoomslides together for an impressive slide show presentation.

Facility Management and Mapping Facilities managers can access the layouts of a building in a few seconds, then zoom-in to examine the details of the facility with virtually no wait.

A mapping series can be examined in detail almost as easily as paging through an atlas.

Printed Circuit Board Design Nth View is particularly useful for making fast inspections of large drawings in detail.

Because colors (with AutoCAD) and levels (with VersaCAD) can be turned off and on instantly, inspection of a complex circuit board drawing can be greatly simplified for an in-depth review.

CAD Management A supervisor can rapidly check details of drawings in progress and the status of projects.

Operators benefit from the ability to check several different drawings quickly while another is active.

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Nth ENGINE OVERVIEW

This Overview explains why the Nth Engine display controller is unique and how it can help you in your work. It also contains pricing and brief specifications. If you would like more information, please make your requests on the enclosed card or call us. But to really evaluate the Nth Engine, ***you must see a demonstration with your drawings!***

SIX ESSENTIAL FEATURES OF THE NTH ENGINE

1. Fast Zooms You Can Use

Nth Engine zooms are very fast. Two seconds or less on all but the largest of drawings and always at full resolution. This speed is very important for maximizing your productivity.

Nth Zooms are "transparent" to the other commands in your CAD program, making it possible to zoom and pan in the middle of drawing or editing operations.

Nth Zooms are free-form. Unlike clumsy, fixed-level zooms, free-form zooms make it easy to see the exact area you'll zoom into before the zoom begins.

With some CAD software, the Nth Engine does more than fast zooms. For example, with VersaCAD and DataCAD you can "pick" objects at Nth Speed. VersaCAD also lets you turn layers on and off instantly. And it uses the Nth Engine's "dithering" and hardware-fill capabilities to quickly display good-looking shade files.

2. Simple, Intuitive Operation

Nth Engine commands are simple and intuitive. They can be used in macro programs, built into on-screen menus, or assigned to digitizer buttons. Your choice!

Your CAD software determines how you use the Nth Engine. For example, Nth Engine operations are integrated into the command structure of programs like VersaCAD and DataCAD, but are independent of AutoCAD functions.

The Nth Engine interacts with your digitizer or mouse naturally, so you'll never see violent cursor movements as you zoom or pan.

Finally, the Nth Engine automatically handles difficult editing and erasing functions quickly and completely.

3. Nth Birdseye

The Nth Birdseye pop-up window shows you exactly where you're zoomed-in on your drawing. It appears when and where you want it and it can be easily sized and moved anywhere on the screen. And with some CAD software you can initiate pans and zooms from within it.

Some folks buy the Nth Engine just for the Nth Birdseye!

4. Zoomslides & Nth View

Zoomslides are a unique tool in PC CAD. And they're available only with the Nth Engine.

How many times have you wished that there were some way to quickly "thumb through" your CAD drawings? Rapidly loading, zooming and panning for detail, and then loading another?

With Zoomslides, you can!

Zoomslides are view-only (edit protected) copies of your CAD drawings which are made while you're in your CAD program.

If you're using AutoCAD, you can use Zoomslides to electronically mark up drawings – eliminating time-consuming check plots. You can also use them to compare details of one drawing while working on another.

Nth View is an electronic flat file program. It loads Zoomslides in seconds (usually 5 to 10) and lets you view them in quick succession, in as much detail as you want. In fact, you can use the same Nth Engine productivity features on a Zoomslide that you use on the original CAD drawing file.

And Nth View is stand-alone so it can be used on an Nth Engine-equipped PC that does not have CAD software on it.

5. The Medium Resolution Solution

When evaluating high performance controllers for a new CAD system, consider the total cost of the board and monitor.

The Nth Engine's "medium resolution solution" offers you a unique way to get more for less.

Traditionally, PC CAD users bought 19" monitors to boost their productivity by reducing the number of time-intensive zooms that are normally made during routine editing sessions. But, since the Nth Engine performs pans and zooms at such high speed, it's no longer necessary to buy a high resolution monitor just to minimize movement around a drawing.

That still leaves the question of resolution. Do you really want to work in lower resolution?

We think you will, once you see the Nth Engine Model 752. It produces a screen image on a 13" multiscanning monitor that's actually sharper than the image produced by the Model 1024 with a 19" monitor (1024 x 768 resolution).

The medium resolution solution gives excellent performance and saves you thousands of dollars.

The Model 640 is an even less expensive solution, and it produces a good-looking picture, too.

For high-resolution, go with the Model 1024 !

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6. Support: Nth Express The usefulness of a piece of hardware goes beyond the object itself. If it doesn't work the way you need it to, when you need it, it's useless. So, you need a supplier that always gives you full, fast support.

You need a supplier who has active, knowledgeable dealers to give you "front line" support. A supplier who has courteous, accessible Hotline support people who solve your problems *now*, not later.

You need a supplier that continuously updates your investment with the latest features...FREE!

You need a supplier that substitutes failed hardware with a same day, overnight "spare-in-the-air" replacement...FREE!

And that's exactly what you'll get as a registered Nth Engine user with your 1-year limited warranty.

That's Nth Express Support.

See a Demo on Your Drawing

The Nth Engine is a sophisticated product. In order to decide if it's really right for you, you must see an in-depth demonstration.

Let your Authorized Nth Engine dealer show you how the Nth Engine can improve your PC CAD productivity. And insist on trying it out on your drawings.

That's the true test.

SOME DETAILS

Display Lists The Nth Engine's blinding speed is partially due to the fact that the "vector display list" is kept onboard the Nth Engine in a dedicated 1 MB of RAM. Don't be concerned that the Nth Engine has *only* 1 MB of display list RAM. Few CAD professionals ever need more.

Here's why.

The display list is usually much smaller than the drawing file. Unfortunately, there is no way to project how large a drawing's display list will be in advance. However, we do know that 1 MB of display list represents a very large drawing. Look at the drawings in our brochure, they use less than 200K of display list RAM.

If your drawings routinely have display lists larger than 1 MB, you may want the Display List Expander (DLE). This easy-to-install board increases the display list RAM up to 3.5 MB and requires a full card slot.

Chances are you'll never need a DLE. In fact, fewer than 3% of our customers have one.

Monitors The Nth Engine supports numerous monitors with resolutions of 640x480 to 1024x768. Nth Engine Models 640 and 752 work particularly well with inexpensive, multiscanning monitors. See the monitor requirements below.

The Nth Engine is designed for dual-monitor CAD operation, requiring a color graphics monitor and a text monitor with a display controller. An inexpensive monochrome monitor with adapter works fine.

The Nth Engine will not interfere with any other graphics cards in your PC. It is not CGA or EGA compatible.

If you'd like a list of tested monitors, please request a copy of our Technical Information Bulletins.

Software Compatibility The following CAD software take advantage of the Nth Engine's capabilities to produce Nth Speed Zooms and other Nth Engine features: VersaCAD, DataCAD, Infinite Graphics, HICAD GM-1000, RoboCAD 4 and AutoCAD.

Hardware Compatibility The Nth Engine requires one slot in an IBM PC, XT, AT, Compaq 386 or a close compatible with 640K RAM and a 130 watt power supply.

Extended memory is not needed.

PRICING & SPECIFICATIONS

All Nth Engines have identical performance, speed and specifications. Only the screen resolution differs between the three models. All Nth Engines have 1 MB of RAM for the display list, expandable to a total of 3.5 MB with a Display List Expander. For more detailed specifications, give us a call or make your request on the accompanying card.

NTH ENGINE MODEL	**B640**	**B752**	**B1024**
Displayable Resolution	640 x 480	752 x 564	1024 x 768
Displayable Colors	16	16	16
Price (Suggested U.S. retail, subject to change without notice.)	**$2495.**	**$2995.**	**$3995.**
MONITOR REQUIREMENTS:			
Type	Non-Interlaced	Non-Interlaced	Non-Interlaced
Vertical Frequency	60 Hz	60 Hz	60 Hz
Horizontal Scan Rate	30.48 kHz	33.6 kHz	48.1 kHz
Video Bandwidth	40 MHz	40 MHz	100 MHz
Pixel Rate	25 MHz	31 MHz	60 MHz
Horizontal Blanking Period	7.2 usec.	5.5 usec.	4.0 usec.

DISPLAY LIST EXPANDER MODEL	**DLE-05**	**DLE-10**	**DLE-15**	**DLE-20**	**DLE-25**
Additional display list RAM:	0.5 MB	1.0 MB	1.5 MB	2.0 MB	2.5 MB
Price (Suggested U.S. retail, subject to change without notice.)	**$ 695.**	**$1045.**	**$1345.**	**$1695.**	**$1995.**

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Nth COM

In this Issue:

Nth Engine Software Release - Version 3.5

Number 36 | *A Newsletter for Nth Graphics' Dealers, Distributors & OEMs* | December 18, 1987

Version 3.5

Brand new Nth Engine software and documentation is now being distributed to all registered Nth Engine customers. This is the third major software release to our installed base this year. As in the past, it is completely FREE to everyone with registered Nth Engines. This release contains several major components:

AutoCAD Release 9

Pull-down menus, dialogue boxes and icon menus work beautifully. You can even select Nth commands from the menu. Response to the menus is FAST. AutoCAD REDRAWs are about 40% faster. REGENs are faster, too.

AutoShade Driver

Yes, a 16-color board CAN do a great job of displaying shaded files. (We've been doing it with VersaCAD since July). AutoShade rendering files not only look good, but they load quickly too! Try it. You'll be pleasantly surprised.

No More Check Plots

Zoomslides marked-up or "red-lined" with AutoCAD virtually eliminate time-consuming check-plots! Load a Zoomslide in about 5 seconds. Use the Nth Engine to zoom around and inspect it in detail. Make comments with AutoCAD. Then load the Zoomslide and the original drawing into AutoCAD together and change the original drawing using the Zoomslide as a "template" or guide.

Plus...

The Nth Birdseye's functionality has been increased. Editing commands have been added. Additional digitizer drivers have been written and more. Conflicts with extremely large AutoLISP programs should disappear.

The default can now be set to center the drawing in the Nth Birdseye. This permits you to make slide shows of Zoomslides made in VersaCAD or DataCAD.

The Nth Engine works perfectly with the Compaq 386/20.

FREE Software

This update is FREE to all who have returned a warranty card to Nth Graphics, and who have purchased within the last 12 months. If you have an unregistered Nth Engine, or if you have a customer who has not returned the card please call our Hotline: 800/624-7552 (512/832-1944 in Texas). We'll register them for you. Look for more updates in the future.

Nth Graphics, Ltd. 1807-C West Braker Lane Austin, Texas 78758 512/832-1944 800/624-7552

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