NUON Composer Kit Manual

Table of Contents

DRAFT

Section 4.2 - Gamma Zoom Composer
　　Introduction to Gamma Zoom
　　What is a Gamma Zoom Z-Frame?
　　How Z-Frames are presented to the viewer
　　Working with The Gamma Zoom Composer Application
　　Instant Gratification (A Tutorial)
　　Putting It All Together
　　Gamma Zoom Composer Reference

Section 4.3 - Dynamic Scene Selection Application

Glossary of Terms
Trouble Shooting Guide

DRAFT

1. 0 NUON OVERVIEW

What NUON Enhancement is all about!

   In case you haven't heard, NUON is the latest in DVD Enhancing technologies from VMLabs, and provides an opportunity for Movie Studios to add value to their DVD title releases with an expanded set of features not possible before the advent of NUON.

   NUON is, along with the software applications that you're about to use, a cost competitive chip and software technology, which allow DVD hardware manufacturers to bring sophisticated consumer disc players to market. VMLabs has worked with our business partners to create a new generation of players that are more than capable a playing all the currently popular disc mediums, such as DVD, CD Audio and Video CD. Even without NUON Enhancement being added to a disc, the expanded playback capabilities of a NUON based disc player are nothing short of phenomenal.

Figure 1.0.1 The Samsung Extiva N2000 NUON Enhanced DVD Player

   A NUON Enhanced DVD title, when played on a NUON based DVD player, will greatly surpass the standard DVD in entertainment value. Of course, this same disc will play on a 'legacy' DVD player, but the value of the title will be greatly enhanced when dropped into a NUON based player.

   Many talented engineers, in co-operation with DVD Authoring professionals, such as yourself, have created the software applications that you are about to use. This suite of applications will make the creation of NUON Enhanced DVDs a practical reality for your next DVD title release.

   Now, if your wondering just what you'll be adding to the DVD title, we'll answer that question. **

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What is the structure of NUON Enhancement?

   NUON based DVD players all have a software layer running in the background, much like the OS in your PC (or Macintosh if you prefer), which allows a NUON Enhanced disc to take control of the player in the same way that a software application runs on that PC. In fact NUON technology is open ended in the same way that a general purpose microprocessor based computer is, and is therefore always going to be open to improvement and expansion of it's capabilities.

   What you'll be adding to your DVD project is essentially a software application that will run on a NUON based player. But before you drop this manual, and run in terror, please take note that we've made this job about as simple as typing numbers into a spread sheet. With the NUON Special Feature Applications that you now possess, creating these NUON 'applications' will be a simple task indeed.

   To make the process of creating NUON Special Features do-able, we've made the software applications modular. That is to say, we've created applications that are individual and specific to creating each of the currently devised NUON Special Features. Will there be more NUON Features added? Will there be more Applications? Absolutely! And as a NUON Enhancement Author, you'll be the first to know about them.

   What each of these applications does is allow you to create a NUON specific menu. But unlike the menus that you currently create by the standard DVD method, these menus are far advanced, and offer the viewer the opportunity to interact.

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Components of the NUON Development System

   The NUON Development System comprises of several software and hardware components, which are made up of some off-the-shelf parts, as well as some that are proprietary to VMLabs. As well as what we provide, it will be necessary for you to have at your disposal, a Wintel based PC to control it all.

   We'll first outline these components in a general way, and then discuss each of them in greater detail. Here's a list of what you should have received with your NUON Development System package:

- The NUON DVD Reference Player
- The NUON DVD Emulator
- The NUON Parallel-to-Serial Converter Module
- The NUON Hybrid Kit Software Disc
- An Ether-Net Hub
- All necessary cabling

NUON Enhancement Tools are Windows based

Setting md_port address in autoexec.bat

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NUON Specific file formats

There are a number file formats (types) that are used by NUON to perform all of the tasks required. In many cases you'll not have to deal with these files directly, but in the rare instance when it might become necessary here is a table of file formats, their extensions, and a brief description each.

Ext.	Name of File Type	File Type	RT	Comments
.bbo	Bob Object	NUON proprietary, Binary	YES	
.bmp	Bitmap Image	Standard image file, Binary	NO	
.bob	NUON Script Language	NUON proprietary, Text	NO	
.dsb	Director Script Language	NUON proprietary, Binary	YES	
.html	Hyper Text Markup Language	NUON extended, Text	NO	
.nct	NUON Color Table	NUON proprietary, Binary	YES	
.npg	NUON Page	NUON proprietary, Binary	YES	
.npx	NUON PiX	NUON proprietary, Binary	YES	
.nvd	NUON Viddie	NUON proprietary, Binary	NO	

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3.0   NUON GUI Art, Templates & Applications

Introduction to NUON GUI

So far, we've covered the reasons a studio would want to add NUON Enhancement to a DVD release, and what a NUON Development System comprises of. In this section (3.0) you'll learn just what goes into creating a NUON Enhanced GUI. Everything from the creation of art assets to simple coding of menu pages is covered here.

You'll want to read this section if you are a Digital Artist creating menu graphics for a NUON Hybrid Disc, paying special attention to the sub-sections on Art Asset Guidelines and the NUON Spectra Color Conversion Application. If you're in the DVD authoring field, you'll probably want to skim these two sub-sections at the very least, so as to get a general idea as to what you are being given to build into a NUON Enhancement project. In any case, everybody connected with design and creation of a NUON Enhancement project should be familiar with the concepts and terminology related in this section.

Art Asset Guidelines

If you've created graphics for standard DVD menu systems in the past, you'll find that everything you know about art asset creation will apply to NUON GUI art assets. All, of your familiarity with TV color and format issues is still valid here. But, since NUON graphic capabilities surpass those of standard DVD menu systems, you'll need to know a bit more about how we create art for a NUON GUI project. As well, you'll need to know about the NUON Spectra Color Conversion Application. All of these issues are covered in this section.

Though you could use just about any image creation/editing program to create the bitmap images used in a NUON GUI project, it is assumed that most of the Digital Artists in the world use Adobe Photoshop for this purpose. Therefore, we'll refer to that program generically when talking about image editing.

This is the part that all of you Digital Artists know very well, creation and editing of images in Photoshop. And, for the most part you'll not need to change your work habits to design and create NUON GUI art assets. In the following sub-sections we'll go over the guidelines that you'll need to follow in order for art assets to work correctly in a NUON GUI project.

The following list of topics will be covered in this Guidelines sub-section:

- Assets are flattened files, saved as 8-bit .bmp
- Images are indexed to a 230 color palette
- Photoshop, Alpha channels are not used in NUON
- Each menu can have it's own palette

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- NUON requires Photoshop Color Tables (.act files)
- Indexes in the palette can be set to have translucency
- Image widths are multiples of 16 pixels wide
- Must take safe area into account
- Full screen images are 720 pixels wide by 480 pixels high
- Image colors should adhere to the NTSC Gamut
- NUON file memory is limited to approximately 2Mb *****************

Assets are flattened files, saved as 8-bit .bmp format

You'll no doubt be creating all of your images in RGB mode, which allows for multi-layered artwork. This multi-layered work method is useful as it let's the Artist create complex images that are built up and changed quickly when necessary. In creating art assets for a NUON GUI project, you'll be able to work in this familiar method. When saving files from RGB mode artwork, you'll use the .psd format, which is the default. This is used only for saving work-in-progress, and NOT the final files for inclusion in a NUON GUI project.

It isn't until the time that you've finished the creative part of your job, and are ready to save your files that you'll need to flatten them (Via the selection of the 'Indexed Color' mode in the 'Modes' sub-menu of the 'Image' menu, which we'll get to soon.) in order to save them as 8-bit Bitmap (.bmp) format files. It is important that you save these files as 8-bit, even if the 4-bit option is available, as NUON will not accept 4-bit files. As well, if you are given the option of saving only as a 24-bit file, you have probably not flattened and palletized the file, and should do so first.

Images are indexed to a 230 color palette

As just mentioned, you'll probably be working in RGB mode throughout the creative part of your job, which as well as layering, means that you'll be working in 24-bit color mode. The NUON graphics engine (at least at this point in time) will handle only 8-bit indexed color images, so converting these multi-layered, 24-bit color images to Indexed Color mode will be necessary. And as mentioned, you'll choose to flatten the image as part of the indexing process.

Before we go any further, a bit of info on the use of palettes by NUON. To start, the DVD specification allots just sixteen (16) colors for the UI needs in all DVD players. NUON must conform to this spec, so we've set aside the last sixteen (16) palette indexes (#'s 240 thru 255) for this function. These are therefore not usable for any NUON GUI art assets. As well, we have set aside the indexes numbered 230 thru 239 to use as System Colors, which are often, but not exclusively used as font colors. So, after doing the math, you'll find that there are 230 colors available for any menu in a NUON GUI menu.

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With this knowledge, we can look at indexing images to a 230 color palette. There are two different general cases in which you'll be converting RGB images to the Indexed Color mode, so we'll handle these individually.

Case 1: A single background image.

In this case you'll be converting one image to Indexed Color mode, which is the simplest path you can take. Follow these steps, and you're done:

1. Select "Indexed Color…" from "Modes" under the Image Menu.
2. A dialog box will appear to ask if wish to "flatten" the image. Choose OK.
3. A second dialog box will appear allowing you to make settings that pertain to the indexing process. From the "Palette" pull-down menu choose "Adaptive". In the "Colors" entry field type in 230, if the number is higher than that (230). Choose "None" for the Dithering option. And finally, select the "Best" radio button for the Color Matching option. Click Ok, and your done.
4. Carefully inspect the image for signs of banding and other color reduction weirdness.
5. If you're happy with the image conversion, save the Photoshop Color Table for this image, as you'll need it later. To do this select "Color Table" from the "Modes" sub-menu under the Image Menu. The Color Table will appear, where you'll choose to save it. Keep this Color Table file near the image file, and type in the file extension ".act" if you're working on a Mac. The Color Table file will be used by the NUON Spectra Color Conversion Application, which runs only under Windows.

Case 2: Multiple images with bullets and/or bitmap font text.

In this case you'll be converting several images to use a single palette ***********
****

<u>Photoshop Alpha channels are not used in NUON</u>

While you can use Alpha Channels and Transparency masks in the creation of NUON GUI art assets, these will not be used in the final NUON menu that you're creating art for. Remember, you'll be flattening the image and converting it to Indexed Color mode.

This doesn't mean that you can't have transparency in your images, but it is handled in a different manner for NUON GUI graphics. We'll get into this in depth in the sub-section on the NUON Spectra Color Application.

<u>NUON requires Photoshop Color Tables (.act files)</u>

In order to conserve space in memory, as well as to display images more rapidly, NUON image files (.npx) don't have their palettes saved within them. In order to

display images NUON will need a palette to work from. This palette will eventually end up being in a proprietary format, as will be discussed in the sub-section on NUON Spectra , but for now suffice it to say that you'll need to save the Photoshop Color Table that your images are indexed to. To do this; select "Color Table" from the "Modes" sub-menu under the Image Menu. When the Color Table dialog box appears, click on Save, then name and save the file.

Each menu can have it's own palette

Though you can have only 230 colors per menu, you are allowed to have a completely different palette for each menu displayed by NUON. So, if for instance, you have four menus to be displayed, you can have a separate 230 color palette for each of them. This should better allow you to cover the range of colors presented in each menu that you create for a NUON GUI project.

Please note that you can have only one (1) palette per menu being displayed at any one time. This would include menus with only a single image used as a background, as well as menus using foreground images such as bullets or bitmaps as text. In the later case all of the additional bullets, text and whatnot would be indexed to the same Photoshop Color Table as the background image.

Art & Code Templates

Text

NUON Flavored HTML

Text

NUON Scripting Language (.bob)

Text

The NUON Build Environment

Text

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An Introduction To NUON Spectra

The NUON Spectra color conversion application is a powerful image and color table conversion tool, which also allows digital artists creating NUON art assets to accurately set transparency levels within artwork where necessary. As well, art assets can be exported from NUON Spectra and viewed on the NUON Reference Player to test for appropriate appearance on TV monitors.

When using NUON Spectra, you'll load bitmap images (.bmp format) and Photoshop color tables (.act format) and see combination of the two files in NUON Spectra's view window. As well, you can load a bitmap image that will serve as a placeholder for the video images that will eventually be shown through your menu art. Once you have set the transparency levels of the area that the video image will show through, you'll export NUON Color Table (.nct format) and NUON Picture eXport (.npx format) files for use in NUON Menus.

Working with the NUON Spectra Main Window

Let's get started with NUON Spectra right away. First, you'll need to locate the Spectra.exe in the following path, NUONComposerKit\bin. Double-click the application icon and you'll see a window that looks like Figure 3.1.1.
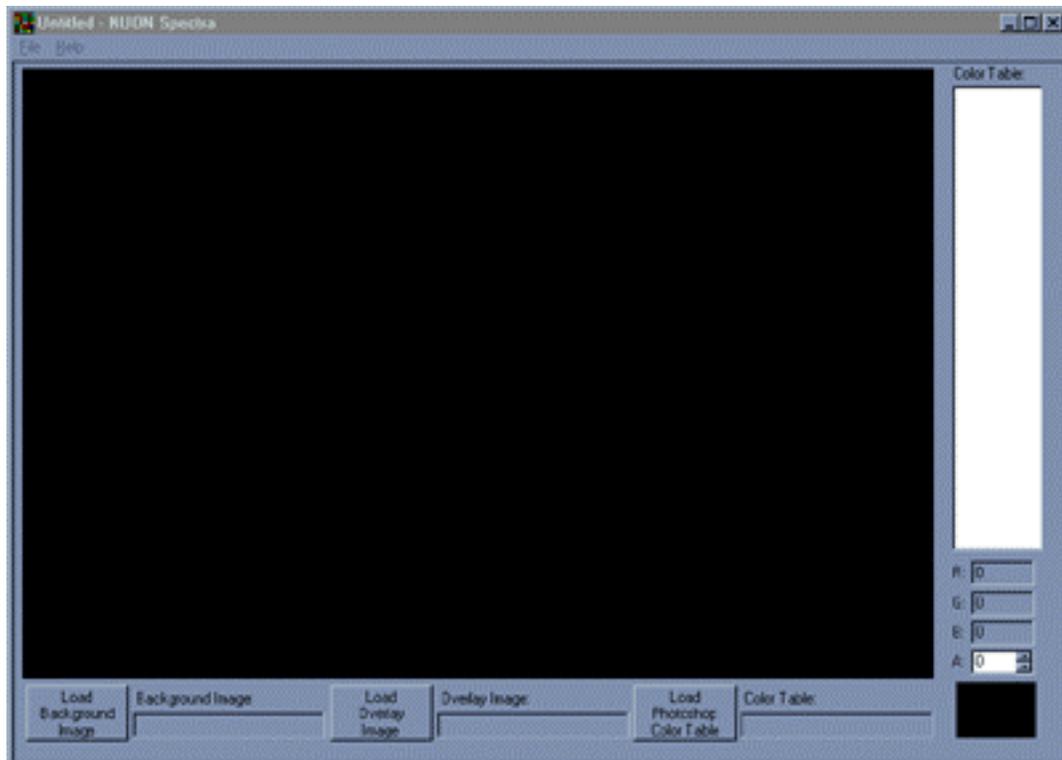

Figure 3.1.1 The NUON Spectra Main Window

This is the NUON Spectra Main Window, which is where you'll load and view files. The most notable feature of the Main Window is the Image View Window, which is the large black area in Figure 3.1.1. Above the Image View Window you'll find a standard menu bar with File and Help pull-down menus. To the right are the Color Table Scroll Window, RGB & A value fields, a swatch of the currently selected color. Below the Image View Window are the image and color table load buttons. The Main Window shown in Figure 3.1.1 is of course empty, and therefore has no color table or image loaded, so we'll start off by loading up all of the necessary files.

Loading Files Into NUON Spectra

There are three types of files that you'll be loading into NUON Spectra. These are; bitmap image files (.bmp files in 8 & 24 bit formats) and Photoshop Color Table files (.act format). Each of these files plays a part in viewing images in NUON Spectra. Please note that none of the file types that are to be loaded in to NUON Spectra is ever saved or opened via the File Menu's Save command, which saves only NUON specific color table files. This will be discussed in greater detail later.

We'll now look at the rolls that each of these files plays and delve into the functionality of NUON Spectra all at the same time.

Load Background Image
[24-bit Bitmap Images (.bmp)]

To load a background image to help verify transparency layers, click on the "Load Background Image" button below the Image View Window as shown in Figure 3.1.2. You'll then be presented with a standard Open Dialog Box, where you can select an image for loading.
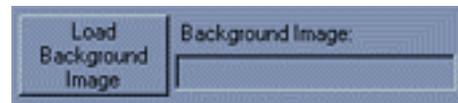
Figure 3.1.2 The Load Background Image Button & File Window

Once loaded, the name of the image will be displayed in the text field to the right of the Load button.

Figure 3.1.3 shows a bitmap loaded as a Background Image. You'll note that the image appears to be of only that of a "Jet Pilot" floating around in the upper right-hand corner of the Image View Window. In this case, the "Jet Pilot" image has been layered on a 720 × 480 pixel black background (in Adobe Photoshop) then flattened to save as a 24-bit bitmap image, so the image *is* filling the entire 720 × 480 pixel space. It's just mostly black! This has been done for a reason, which we'll
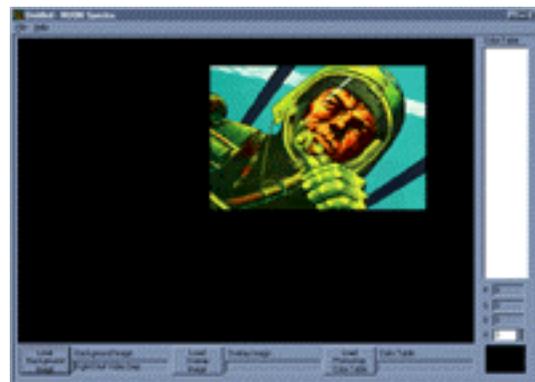
Figure 3.1.3 Background Image Loaded

get to soon when we look at loading and working with color tables.

Note that you do not have to use a background image to work with this application. This function is included for your benefit as an artist, and will allow you to see your menu art designs with a still image showing through any translucent areas in the image. Without a background image loaded the default background is solid black, which may work just fine for your needs. Background images are required to be 720 pixels wide by 480 pixels high, as they are used as a placeholder for full screen video assets that will be shown through the artwork when it is presented as a NUON menu. These images must have a bit depth of 24 bits. Background images are not incorporated into the final art asset when exported from NUON Spectra; so don't worry too much about their quality.

You would probably want to use frame grabs or scans of promotional stills from the title that you're designing for in order to check transparency settings that you'll make in the in the Overlay art.

Load Overlay Image
[8-bit Bitmap Image (.bmp)]

To load an Image to be used in a NUON menu, and therefore to be converted to the NUON .npx format, click on the "Load Overlay Image" button, below the Image View Window as shown in Figure 3.1.4. You'll then be presented with a standard Open Dialog Box,

Figure 3.1.4 The Load Overlay Image Button & File Window

where you can select an image for loading. Once loaded, the name of the image will be displayed in the text field to the right of the Load button. *Please note that you <u>must</u> have a Photoshop Color Table loaded in order to see the Overlay Image that you have loaded. See the next section for more info.*

Figure 3.1.5 shows a bitmap loaded as an Overlay Image. This type of image is used by NUON Spectra as the source for conversion to the NUON image file format (.npx). These 8-bit image files will have, of course, been indexed to an 8-bit color table, which you'll create and then save from Adobe Photoshop. Please note that you'll also need to load a color table to see this image. The method for doing this is described below, and the Load Photoshop Color Table button and window are shown in Figure 3.1.6.

Figure 3.1.5 Overlay Image Loaded

One of the first things that you'll notice in this image (other than the cool retro space guys) is the 100% magenta shape in the upper right-hand corner. Referring back to Figure 3.1.3, you'll note that this magenta shape just happens to be right where our "Jet Pilot" is, and we did say that there was a reason for that guy being where he was. Also, take note that the Color Table area to the right of the Image View Window has been filled in. It wasn't used in Figure 3.1.3, because the 24-bit image didn't need the color table, but this 8-bit image does.

You've probably already figured out that the magenta shape is eventually going to be a Transparency area, where the "Jet Pilot" is going to show through. This assumption would be correct. For this example, we've chosen to use magenta for this purpose because it isn't used anywhere else in the image, and we want this area to be a unique color for setting the Alpha Value to be transparent. This will be discussed in the next sub-section on the color table.

Load Photoshop Color Table
[Adobe Color Tables (.act)]

To load an Adobe Photoshop Color Table used for 'coloring' the Overlay Image that you've loaded, click on the "Load Photo-shop Color Table" button, below the Image View Window, as shown in Figure 3.1.6. You'll then be presented with a standard Open Dialog Box, where you can select a color table for loading.
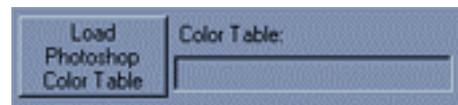
Figure 3.1.6 The Load Photoshop Color Table Button & File Window

After you've selected a color table and clicked OK, you'll be presented with a dialog box as shown in Figure 3.1.7. This is the Alpha Setting dialog, where you can set all of the color table's Alpha Values to a specific setting. You'll note that there are two illustrations of the Alpha Value box in the figure. The one on the left has it's "Keep Current Alpha Values" radio button selected, which means that all of the Alpha Values will be set to a default value of 0, and therefore be opaque. In the right-hand illustration, the "Reset Alpha Values To:" radio button has been selected and the number field value has been set to 128, which sets all of the Alpha Values to 50% opacity. This will cause the image to become translucent. If a value of 255 were used, the image would become totally transparent.

Which one of these options you chose depends upon what type of an effect you're trying to accomplish. If for instance you have an image like the ones shown in our examples ("Space Guys"), and there is going to be a simple 'video viewing area' (the magenta shape), you'll choose to Keep Current Alpha Values, which will set all Alpha Values to 0, or fully opaque. It's then a very simple matter to locate the translucency color indexes (we'll get to this in short order) and set their Alpha Values to something other than 0. We'll choose to set them to 128 for our example. If on the other hand, you wanted to have the whole menu image appear translucent you would

choose to Reset Alpha Values, and set an appropriate Alpha Value, remembering that 0 is opaque and 255 is completely transparent.
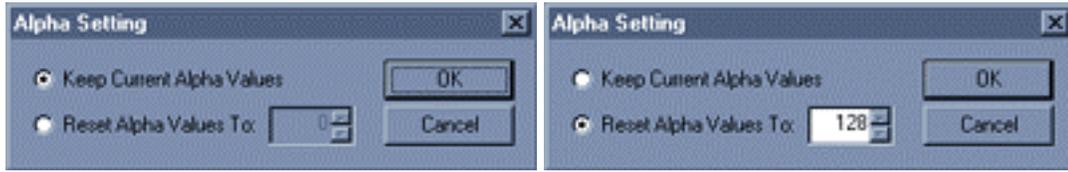
Figure 3.1.7 The Alpha Value dialog box.

Once loaded, the name of the color table will be displayed in the text field to the right of the Load button. As well, the Color Table area of the window as shown in Figure 3.1.8 will be filled in.

NUON Spectra Color Table Basics

So far, we've loaded two bitmaps into NUON Spectra, one of them a 24-bit Background Image, and the other an 8-bit Overlay Image. It was stated earlier that you'd need to load a color table to see the Overlay Image that you've loaded. Because a standard bitmap's internal color table cannot have alpha values set, we've separated it from the image. This is done to allow you to set the specific colors in the table to be translucent.

Figure 3.1.8 shows the Color Table as a scrolling list type window, where you'll use the scroll bar to locate the color(s) that you'd like to set the Alpha Value(s) for. Below the scrolling list are the Red, Green and Blue level windows, which since they're grayed out you can't change, and the Alpha Value number window. You can use the RGB values shown to help identify the specific color that you're looking for. And finally, there is a swatch of the currently selected color index shown below the Alpha Value window.

In the case of our "Space Guys" example, we've set aside three shades of magenta as translucency colors for the view window in the menu. We've used three index colors because this magenta shape has rounded edges, and when using such a shape, it's usually a good idea to have some anti-aliasing to smooth the edges out a little. If this were a rectangle with straight edges and squared off corners we'd use only one index color for translucency. In Figure 3.1.8 we can see the three index colors, which are numbered 3, 4 and 6. In this case, index 6 is the main translucency color, and 3 & 4 are the anti-aliasing colors.
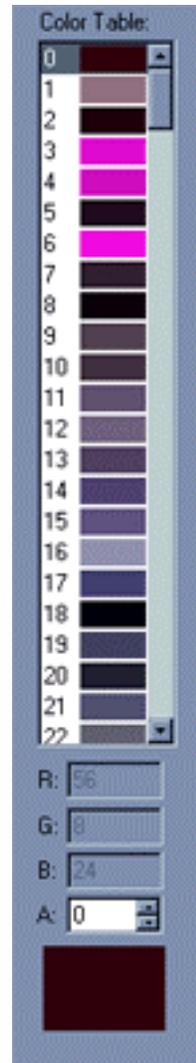
Figure 3.1.8
Color Table

When one of these color indexes is selected by clicking on the colored swatch next to the index number, something quite useful will happen. As shown in Figure 3.1.9 any pixels in an image that are colored with the selected color index will alternately flash their color and white. (Which of course we really can't show in a screen shot, but you get the idea.) In this example, the index for the main part of the view window has been selected, which is index 6. If there were any other pixels in

Figure 3.1.9 Showing the selected index color as a flashing white area

the image that used this color index, they would be flashing too. If that were to happen, you would want to eliminate these by 'spotting' them out in Adobe Photoshop. You'll do this by selecting another color close in hue, that isn't going to be used as a translucent color (Don't for example, use one of the anti-aliasing colors, or you'll have the same problem with another set of pixels.), and penciling the errant pixels in with the newly selected color.

If, as in Figure 3.1.9, there are no errant pixels flashing, you can proceed to set the Alpha Value for the color index. To do this click in the number field next to the letter 'A' below the RGB values, and type or select a value with the up/down spinners. You won't see an immediate effect, but selecting another color index in the Color Table will cause the Alpha Value that you have set to take effect, and show the translucency values effect on the Overlay Image.

Figure 3.1.10 Alpha Values set to 128

Figure 3.1.10 shows the outcome of setting color indexes 3, 4 & 6's Alpha Values to 128, which will give those indexes a 50% translucency. And finally, we see the "Jet Pilot" Background Image once more, showing through the 50% translucent magenta view window. We could have set the Alpha Values for the magenta indexes to 255, which would have rendered them completely transparent. This is what you would most likely do in a real menu art design, but it better illustrates the trans-lucency effect to set it to a median value, where the index's color is still apparent.

With the last step, we showed the greatest value of NUON Spectra, where individual color indexes of the Color Table can be set to specific Alpha Values. Now we'll look into what is done with this work and how it is exported and converted.

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Outputting NUON Specific Files

There are three file types output by NUON Spectra. Two of these are used by NUON to display menus, and the third is used only to save any work that you have done on the Color Table. We'll discuss the NUON specific files first. These include the NUON Color Table (.nct) format, which is Exported via the File Menu, and the NUON Picture eXport (.npx) format, which is Converted via the File Menu. The other file type is the Color Table (.ctb) format, which again is only for saving your Alpha Value settings for further adjustment, if necessary.

NUON Color Table Files

Since NUON is capable of using alpha values to set the translucency of color indexes in a color table, and bitmap images aren't capable of containing alpha values, it is necessary to split the color table data from the bitmap image, and then output that color table as a separate file. This is another part of what NUON Spectra allows you to do. This is a multi-stepped process, which we'll delve into now.

Loading and Exporting The System Clut

Before you output the NUON Color Table (.nct) files that will be used by NUON to display your menu art assets, you'll first need to export a NUON System Clut (Color Look Up Table), which will be used when you are ready to export your .nct files. This is something that you'll want to do before you are ready to Export your final Color Table, as it is required that you have this file available during the final Export process. Before we go through the steps to export the System Clut, we'll briefly discuss what a System Clut is and what it is used for.

The System Clut consists of a group of ten color indexes numbered 230 thru 239. These colors are used by NUON to do a number of things including; serving as text colors and colors for on-screen graphics such as the Zoom Indicator Box. Since this Clut gets used for displaying objects that you are not creating, and therefore have no control over, you should only make use of the first four indexes in the color table, which NUON does not rely upon.

Figure 3.1.11 The Adobe Photoshop Color Table Dialog Box.

You can edit the System Clut colors only in the Adobe Photoshop Color Table dialog box. Figure 3.1.11 shows that dialog box with the first ten

indexes set to the NUON System Clut colors. We've included a copy of this Color Table in the Tutorial Files directory of the Composer Kit for your use. Again, do not change any but the first four colors of this Color Table as you can adversely affect system graphics that you may not be aware of.

■■

The following are outline descriptions of all remaining NUON Spectra functions:

To start a New Spectra Project:

1. From the File Menu select New Project. If there is a currently opened and un-saved project you'll be prompted to save that projects color table file.

To "Open" a previously saved .ctb file:

1. From the File Menu select "Open Color Table"

2. When the standard open file dialog box appears double-click the .ctb that you wish to open or click the Open button.

To "Save As" a color table for later editing:

1. With a color table loaded into Spectra select "Save Color Table As" from the File Menu.

2. In the standard File Save dialog box that appears name and save the file. The file will be saved in the .ctb format.

To "Save" a previously saved color table file.

1.   With a color table loaded into Spectra select Save from the File Menu.

To load and "Export" a NUON System Clut:

1. Click Load Photoshop Color Table button below Image View Window.

2. Select the System.ACT color table from the standard Open dialog that is presented.

3. Set the Alpha Value of color #7 (Red) to 255.

4. From the File Menu select Save Color Table, then name it and save it in the standard Save dialog that appears.

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5. From the File Menu select Export NUON System Clut,
    then name and save it in the standard Save dialog that
    appears.

To "Export" a NUON Clut:

1. Load a Photoshop color table and adjust alpha values as
    described in the above section titled "Load Photoshop
    Color Table".

2. From the File Menu select Export NUON Clut, then name
    and save it in the standard Save dialog that appears.

3. Select a system clut when the "Select System Clut File"
    dialog appears. Hit Select and the file will be
    exported.

To "Convert" a bitmap image to NUON format:

1. Load an 8-bit .bmp image as described in the above
    section titled "Load Overlay Image".

2. From the File Menu select Convert Overlay, then name
    and save it in the standard Save dialog box that
    appears.

3. When the "Select NUON Clut" dialog appears select the
    Clut that you saved as in the "Export NUON Clut" step
    above.

To "Batch Convert" several bitmap images to NUON format:

1. From the File Menu select Batch Convert Overlay, then a
    Batch Convert dialog will appear.

2. Under the "Selected Image Files" list click on the
    Select button, then a standard Open File dialog will
    appear.

3. Select the files that you wish to convert, and click
    Select. The files will be added to the Selected Image
    Files list.

4. Under the "NUON Clut File" box click on the Select
    button, then a standard Open File dialog will appear.

5. Select a Clut file to be used for the batch conversion
    and click on select. The clut file will show up in the
    box.

6. Click the Convert button in the bottom right hand corner of the dialog box. The files will be converted to .npx format files and saved in the same directory that the .bmp files came from.

To do a preview an image with "Export Preview"

1. YOU MUST HAVE A NUON REFERENCE PLAYER CONNECTED AND RUNNING TO DO THIS PREVIEW FUNCTION.

2. With an image loaded into Spectra select Export Preview from the File Menu.

3. In the select NUON clut dialog box that appears select the NUON color table (.nct) file that you wish to test the image with and click Open.

4. The file will be exported to the appropriate directory.

5. Open a DOS Box and navigate to the ComposerKit\test directory and type in composerun at the prompt (>).

6. When all of the DOS stuff is completed and the player begins running again, press "MEMU" on the NUON Reference Player remote control, and navigate to "Preview Image" then press the "ENTER" key on the remote. Your image should now be displayed.

To Exit the program:

1. From the File Menu select Exit or Click on the Close Box in the upper right-hand corner of the Main Window.

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What are NUON Special Feature Composers?

We've talked about NUON Special Features and alluded to the software applications that you would use to create them, but what are these applications? The Composers as we'll call them, are a suite of software programs that allow you to create specific NUON Special Features. The Composers at the time of this release of NUON Hybrid Kit are as follows:

- Viddie Composer   Creates NUON Viddies Montages
- Gamma Zoom Composer   Creates Gamma Zoom w/ Vista Points
- Dynamic Scene Composer   Creates Dynamic Scene Selections

Since NUON is based on an open architecture, much like the microprocessor in a desktop PC, these NUON Special Features are open to change as well as the addition of new features in the future. As a NUON Features Author you'll be kept up to date as to any improvements or additions to the Apps.

Each of the listed Apps has it's place in creating NUON Special Features, as they are responsible for generating code in one of two formats used by NUON. These formats include NUON Scripting Language, and Director Script, which allows for real time control of a NUON player from the code that you'll be generating. If this all sounds a bit intimidating, remember that these Apps are here to shield you from having to write a line of code.

When you use a NUON App you'll simply enter information about the NUON Special Feature that it will generate, which will most likely be specified by the Creative Producer of the project, then press Export and be done. What you'll have created are the files necessary to run the NUON Special Feature, but not the framework of the Special Features Menu itself. That is discussed in depth in Section 3.0 of this manual, NUON UI Templates & Applications.

NUON Special Feature Applications are standard Windows Applications

Since the NUON Hybrid Kit is based on the Microsoft Foundation Class architecture (it sounds complicated, but it just means that we follow the rules) you can expect them to work in predictable ways. These predictable behaviors include:

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- NUON Special Features Applications have all of the usual Microsoft Windows trappings, such the menu bar, close box, minimize box, and resize box.

- When creating a New window in the File Menu, with an already existing project opened, you'll be prompted to Save changes if you haven't done so.

- When Opening a previously Saved project in the File Menu, with an already existing project opened, you'll be prompted to Save changes if you haven't done so.

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An Introduction to NUON Viddies

Viddies are a way for creative types at the movie studio to add value to a title by creating thematic montages of Viddie Clips. These could, for example, include a montage of explosions in an action film, or kisses in a romantic drama, or explosive-corrosive-acid-soaked-kisses in a sci-fi thriller! The options are endless and totally in the control of the Creative Producer.

The real power of Viddies, like other NUON Enhancements, is that they are built upon an already completed film. No additional editing to the film asset is necessary. In addition, Viddies can span all of the titles on a DVD being NUON Enhanced, so the main feature, as well as theatrical trailers, deleted scenes and director's cuts can be used in a Viddie Montage

What is a Viddie Montage?

Similar to the way a film editor cuts together all the parts of a film, Viddie Composer allows a Creative Producer to edit together new thematic segments from a master program. Say a studio is putting out the aforementioned sci-fi thriller and want to do the kissing Viddie Montage. First, the Creative Producer would start by locating all of those 'kissing' parts of the film and note their DVD Run-times (They'll need to list both in and out times, of course). What will have been generated is a run list for a single Viddie Montage with each of the 'kissing' scenes, which we refer to as Viddie Clips, and their individual in and out time codes. As well, each Viddie Clip can have descriptive text to relate its importance in the Viddie Montage, which will be shown in the Viddies Menu. This should also be included in the run list, as well as the DVD title in which each of the Viddie Clips live in. Figure 4.1.1 shows the relationship between a Viddie Montage and it's associated Viddie Clips.
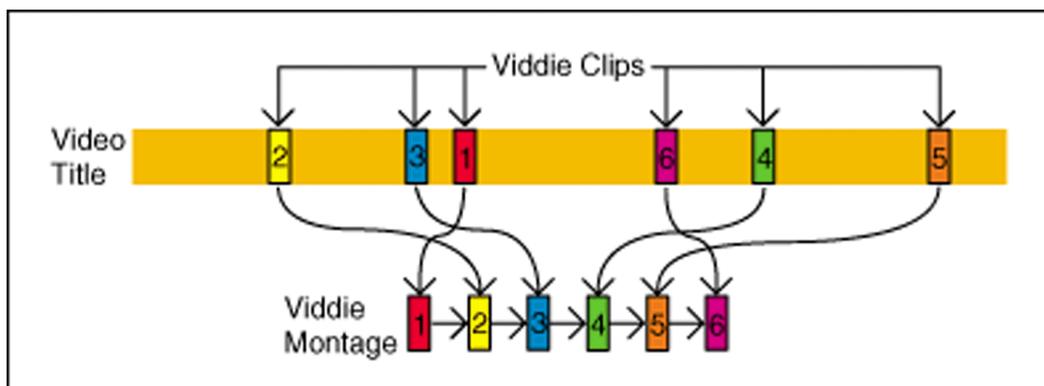
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Figure 4.1.1 The relationship between a Viddie Montage and Viddie Clips.

Please note in the previous illustration, that the selected Viddie Clips do appear in a scrambled order. This is intentional, and is to illustrate how Viddie Clips can be pulled from any part of a title, and arranged in any order. In fact, Viddie Clips can be pulled from any Title that appears on the DVD, including Director's cuts, deleted scenes, and theatrical trailers.

And, the Creative Producer doesn't have to stop at one Viddie Montage. In fact, we've set up templates, which will allow you to build menus with several (up to 16) Viddie Montages on them. So, for instance, a Viddie Montage for each of the lead actor's one-liners, kisses and karate chops could be included if so desired. Once the run lists for all of the desired Viddie Montages have been compiled, they'll be sent to you, the NUON Enhancement Author. You'll then go on to add these run lists to menu art and code templates with the Viddie Composer, which we'll get to after just one more explanation of what this is all about.

How NUON Viddies are presented to the viewer

Sitting in their favorite easy chair, the viewer will be entertained by all of this creative work by simply selecting the Viddies Menu, navigating to the desired Viddie Montage and pressing enter. Figure 4.1.2 shows an example of one of the menu templates that we've included in this NUON Composition Tool Set.
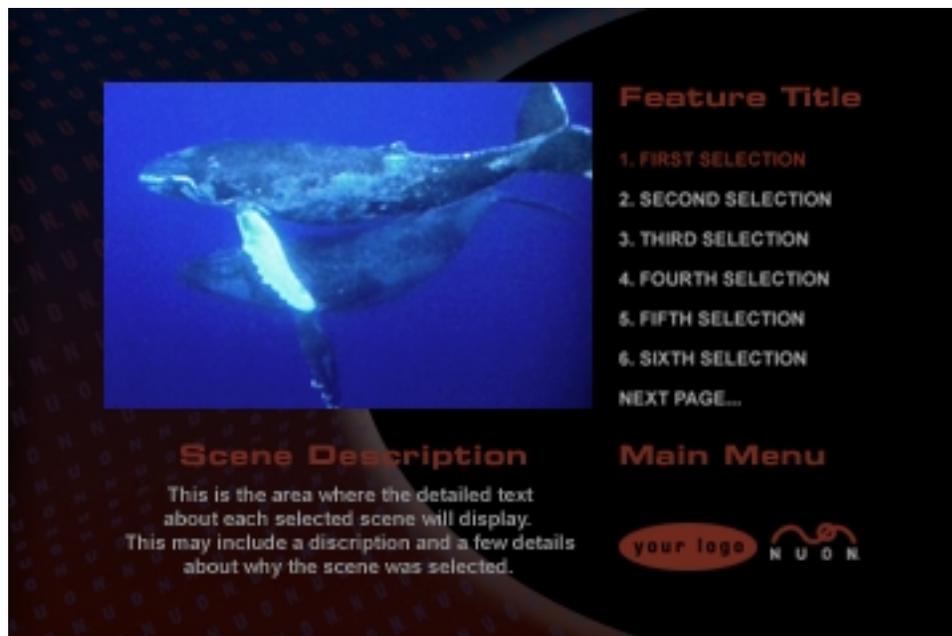
Figure 4.1.2 A NUON Menu Template, what the viewer sees.

In the figure above, you'll note first that this is a full screen bitmap image (720 × 480 pixels) much like any other piece of DVD menu artwork. One big difference

between this piece of art and the usual is that NUON allows for "picture-in-graphic" display. So, though not apparent here, the pair of swimming whales actually appear in a scaled down video window, in real time, and moving! Another notable thing about NUON Features Menus is that text can be displayed dynamically, which is to say that, menu items or other text, such as the "Scene Description" text (the white text) isn't included in the bitmap image. This text is displayed by NUON, and is based on the text that you'll be entering to the Viddie Composer. Other graphic items, such as logos and heading text will still be part of the background bitmap.

Working With The Viddie Composer

So far, we've only given an introduction as to what Viddies are. So let's open the application and get to work! First, you'll need to locate the viddieComposer.exe in the following path, YourHardDrive:\HybridKit\bin. Double-click the application icon and you'll see a window that looks like Figure 4.1.3.

Figure 4.1.3 The Viddie Composer Main Window.

This is The Viddie Composer Main Window. It's extremely simple to use. You'll enter pertinent Viddie Montage information, and also test your Viddie Montages for timing accuracy and thematic flow. The Viddie Composer is a standard window with a menu bar at the top, text entry fields, and buttons to make selections.

One of the most notable features of this window is the Viddie Clip Chart, which takes up most of the window real estate. This is where all of the Viddie Clip info for the particular Viddie Montage that you're working on will be displayed. You won't be making any changes here, but this chart is no less important, as it displays all of the info on the Viddie Montage that you're creating. Just above the chart is the Viddie Montage Name text field, to the right are the Viddie Action Buttons, and below the chart are the Viddie Clip Setting fields, which is where all of the important Viddie Clip info is entered.

In our example above, the Viddie Montage is named "Stuff Blows Up" (the Viddie Montage Name), and includes three Viddie Clips named; "Car Blows Up", "House Blows Up", and "Guy Blows Up". Along with each of these is the selected Title numbers, In/Out Times, and some descriptive text. The info in the window shown, when exported, will create a single Viddie Montage named "Stuff Blows Up", which will play the named Viddie Clips in the listed order.

Instant Gratification (A tutorial)

We've told you enough about what Viddies are, and a bit about the Viddie Composer, so finally, let's look at how you'll create Viddies. We'll do this in a step-by-step fashion, so you'll see just how simple it all is. You can make up text and times for this tutorial as you go along. This is just for fun, right!

1. If you're development system includes a DVD Emulator, make sure the DVD Drive/Emulator data switch is set to DVD Drive position. You'll find information on the DVD Emulator in a separate document included with that module.

2. Make sure that your NUON Development System is powered on.

3. Load a DVD disc into the Reference Player disc drive.

4. Select New from the File Menu if you've entered any info while playing around, and choose No in response to the "save changes" dialog.

5. Enter a Viddie Montage Name in the appropriate text field.

6. Click the "Add Clip" Action Button at which time an "Untitled Clip" will appear at the top of the Viddie Clip Chart.

7. Enter a Clip Name in the appropriate text field.

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8. Enter a DVD Title number into the appropriate text field. Alternately you can use the up/down arrows.

9. Enter a Time In and Out. Note that you can tab from field-to-field and enter two digit time values. You can also use the up/down arrows if you like.

10. Enter some descriptive text in the appropriate field.

11. Now, repeat steps 6 through 10 to add more Viddie Clips to this Viddie Montage.

Pretty simple! You'll note that if you continue to Add Clips that they are appended to the end of the chart. These Viddie Clips will appear in the Viddie Montage in the same order as they appear in the chart.

You can play Viddie Clips from any part of the movie in any order. (As shown in Figure X.1) The Viddie Montage can go from end to beginning, or skip around, and can even jump from title to title! Before we go on to test and export Viddies, let's have a look at the other Viddie Clip Action Buttons. They are as follows:

- Insert Clip, which will insert a new Viddie Clip into the Viddie Clip Chart above the currently selected Viddie Clip.

- Delete Clip, which will delete the currently selected Viddie Clip from the Viddie Clip Chart. There is NO undo function for this, so be careful.

- Move Up, which will move the currently selected Viddie Clip up the Viddie Clip Chart, and therefore to an earlier position in the Viddie Montage.

- Move Down, which will move the currently selected Viddie Clip down the Viddie Clip Chart, and therefore to a later position in the Viddie Montage.

And if you wanted to save this work, you would select "Save As" from the File Menu, and enter a name for the project in the standard Save Dialog Box that appears. This is not the same as doing an export, which we'll learn about below.

Once you've added all of the Viddie Clips and input their settings, you'll want to do something with all of this valuable data. This is going to be easy, assuming that you already have your NUON Development System running. All you have to do is simply click on the Test Viddie action button, and watch the Viddie Montage roll before your eyes. Again, it's just that simple! Of course you may want to tweak some of the In/Out Times to avoid cutting on scene changes, but then you just click that Test Viddies button again to see your changes.

Now that you've tested your Viddie Montage, as in the last step, you'll want to put it to use. All you have to do is click on the Export Viddie action button. A dialog box will appear and prompt you to select a Viddie number. Leaving it set to 1, and clicking OK will do for now. This will automatically Export your work to the NUON

Director Script file format (.dsb), title it "viddie1", and put it into the appropriate directory. This is the final step in the creation of a Viddie Montage. In a real project there will no doubt be several Viddie Montages that will appear on the Viddies Menu, so the previous set of steps will be repeated for each Viddie Montage. The only difference when creating a real project would be the selection of the Viddie number in the Viddie Export step, where you'll select the number based on what the Creative Producer has specified.

For a detailed description of the functioning of all text fields, buttons, and menus of the Viddie Composer see the Viddie Composer Reference section of this manual starting on page 4.1.8.

Putting It All Together

Once, you've entered the data and exported each of the Viddie Montage files, you'll want to see them in the context of a menu. Though this is discussed in greater detail in Section 3 NUON UI Templates & Tools, we'll briefly discuss the process here.

We've included with these software applications, templates for building NUON Menus. These templates include both the menu code and bitmaps for all of the currently available NUON Features. These are to allow you to quickly see how a NUON project is built, and to give an idea as to how it will look when done. Please note that the included bitmaps have generic headings, titles, and menu item text. They have been included as a starting point for Graphic Artists developing for a NUON Features project, as well as system test for the Development System.

To build and load a NUON project to your development system you'll need to follow these steps:

1. If you're development system includes a DVD Emulator, make sure the DVD Drive/Emulator data switch is set to Emulator position. You'll find information on the DVD Emulator in a separate document included with that module.

2. Make sure that your NUON Development System is powered on.

3. Load a DVD disc into the Reference Player disc drive.

4. Locate and open the MS-DOS Prompt (also referred to as the "DOS BOX"), which you'll find under Programs in the Start Menu.

5. After the prompt, (">") type "makedat" to start the makedat batch file. This will automatically build your NUON project. If this seems to go by rather quickly, that's normal, as NUON Menu files are compact and are compiled very quickly.

6. After the prompt, type "load" to start the load batch file. This will take between 12 and 15 seconds, and will display the percentage completed of each of the files

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loaded to the Development System. When complete, the currently loaded disc should begin to play.

7. Press the Menu button on the remote to bring up the NUON Features Menu. This won't say NUON Features on it, as it's a generic template graphic.

8. Navigate to "Viddies" with the up/down arrow keys, and press enter to open the Viddies Menu. It won't say Viddies Menu.

9. The menu should open with "Viddie 1" already selected. Press enter to start your Viddie Montage running. When it does, it should look exactly as it did when you ran Test Viddie in the step-by-step in the Instant Gratification section.

That's it! You've just built and loaded a NUON project into the Development System. With that said, this was just a trial run, and in order to build a real project you'll want to go over Section 3 . The rest of this Section is comprised of a reference document, which describes in great detail all of the functions of the Viddie Composer.

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Standard Pull-Down Menus

File Menu

Figure 4.1.4 shows the File Pull-Down Menu. This menu can either be pulled down with your pointing device, or invoked by the key combination Alt + F. Once pulled down, functions can either be selected with the pointing device, or invoked by hitting the key that corresponds to the underlined letter in the function name.

New (Ctrl+N)

Creates a New Viddie Composer Main Window by clearing the existing window of its contents. If there is an already opened window with project information, you'll be prompted to save your current work through a standard warning dialog box. If you need to open more than one window at a time you'll need to double-click the Viddie Composer application icon.

Figure 4.1.4 The File Pull-down Menu

Open (Ctrl+O)

Opens a Viddie Composer file that you have saved. The "Open" dialog box will be displayed where you'll select a file to be Opened. If there is an already Open file at the time that you choose to Open another, you'll be prompted to save your current work through a standard warning dialog box.

Viddie Composer files have the file extension .vdi and are only read by The Viddie Composer. This is the format, in which you'll save your work-in-progress, as well as finished projects, which you may wish to keep for future reference. These are not the files that you'll include in your final NUON menu project. Those files are discussed below under the Export Viddies button heading.

Save (Ctrl+S)

Saves the currently Opened project if it has been previously "Saved As", otherwise you'll prompted to name the project in the standard Save As dialog box.

Save Ás (Ctrl+A)

Saves the currently Open or New file in the Viddie Composer (.vdi) format. The "Save As" dialog box will be displayed, and you'll be prompted to enter a file name.

Print (Ctrl +P)

Prints only the contents of the Clip Chart to a connected printer. You'll be presented with a standard Windows print dialog box, where print options may be selected.

Print Setup

Presents a standard Windows Print Setup dialog box, allowing you to set print parameters for your documents.

Recent Files

The Recent Files area between the Print function and the Exit function is a standard Windows feature showing exactly that. Up to four of the last files worked with will be displayed here.

Exit

Exits the Viddie Composer application. You will be prompted to save any un-saved work through a standard warning dialog box.

Edit Menu

Figure 4.1.5 shows the Edit Pull-Down Menu. We'll only give a brief description of these menu functions as all of them duplicate buttons in the Viddie Composer Main Window, and will be discussed in detail later. This menu can either be pulled down with your pointing device, or invoked by the key combination Alt + E. Once pulled down, functions can either be selected with the pointing device, or invoked by hitting the key that corresponds to the underlined letter in the function name.

Edit	Help	
Add Clip	Ctrl+A	
Insert Clip	Ctrl+I	
Delete Clip	Ctrl+D	
Move Up	Ctrl+Up	
Move Down	Ctrl+Down	
Test Viddie	Ctrl+T	
Export Viddie...	Ctrl+E	

Figure 4.1.5 The Edit Pull-down Menu

Add Clip (Ctrl +A)

Adds a New Viddie Clip to the end of the current Viddie Montage.

Insert Clip (Ctrl +I)

Inserts a New Viddie Clip above the currently selected Viddie Clip.

Delete Clip (Ctrl +D)

Deletes the currently selected Viddie Clip from the Viddie Montage.
Beware: there is NO undo function for this!

Move Up (Ctrl +Up)

Moves the currently highlighted Viddie Clip up the Clip Chart, and therefore to an earlier position in the Viddie Montage.

Move Down (Ctrl +Down)

Moves the currently highlighted Viddie Clip down the Clip Chart, and therefore to a later position in the Viddie Montage.

Test Viddie (Ctrl +T)

Directly loads your Viddie Montage file to the NUON Reference Player.

Export Viddie (Ctrl +E)

Is the final step in creating your Viddie Montage.

Help Menu

Figure 4.1.6 shows the Help Pull-Down Menu. This menu can either be pulled down with your pointing device, or invoked by the key combination Alt + H.
Once pulled down, the function can either be selected with the pointing device, or invoked by hitting the A .

Figure 4.1.6 The Help Pull-down Menu

About NUON Viddie Composer

You can find the software revision number here.

Viddie Montage Name

Figure 4.1.7 shows the Viddie Montage Name window, which is where you'll enter the text that will be
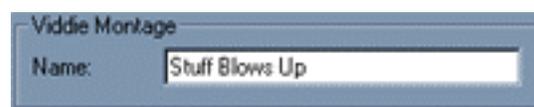
Figure 4.1.7 The Viddie Montage Name Field

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displayed as an individual menu item in the Viddies Menu. This is an important text field as it directly effects what is displayed on the finished menu. So beware, speling an d capitolizashun Coun hear!

Montage TRT (Total Run Time)

Figure 4.1.8 shows the Montage Total Run Time Display, which totals the run time for all clips in the current Viddie Montage.

Montage TRT: 00:02:24:03

Figure 4.1.8 The Total Run Time Display

Viddie Clip Chart

Figure 4.1.9 shows the Viddie Clip Chart, which is where you'll add, insert, delete and otherwise arrange Viddie Clips into Viddie Montages. This is the main display area of the Viddie Composer, and most of the other controls in the main window have a direct effect on the chart.

The only direct effect that *you* can have on the chart is to select individual Viddie Clips for editing (with the aforementioned controls), as well as resizing the chart columns to accommodate showing text of differing lengths, though this shouldn't be necessary most of the time.

Clip Chart:

	Name	Title	Time In	Time Out	Description
0	Car Blows Up	1	00:20:10:14	00:20:23:25	What Bob doesn't know is ...
1	House Blows Up	2	00:02:26:08	00:03:54:18	Don't turn on the stove!!!
2	Guy Blows Up	1	01:23:12:00	01:23:54:12	That was one nasty burrito

Figure 4.1.9 The Clip Chart

Viddie Clip Settings

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Figure 4.1.10 shows the Viddie Clip Settings area. This is where you'll make all of the settings for each of the Viddie Clips in a Viddie Montage. As you Add Clips the Settings area will be set to the defaults shown. This is also where you'll edit a previously created Viddie Clip once you have selected it from the Viddie Clips Chart.
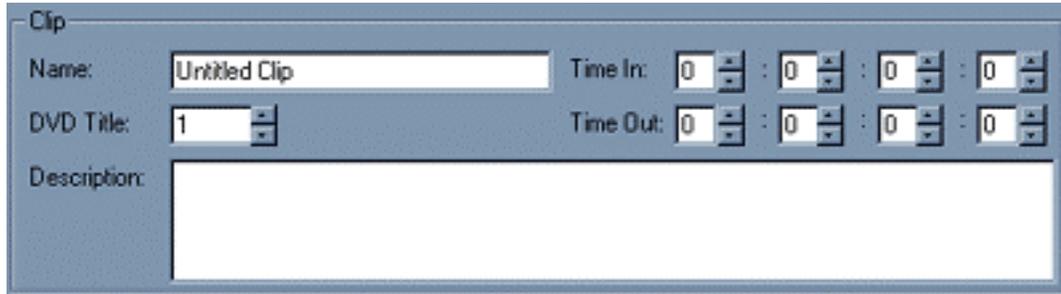

Figure 4.1.10 The Clip Settings Area

Name

This is one the only pieces of data that doesn't get used by NUON or displayed on any menu screen. We've included this field for the benefit of you, the NUON Enhancement Author. Text that you input here will be displayed in the Name column of the Viddie Clip Chart along side all of the pertinent Title, Time In/Out, and Description data for the currently selected Viddie Clip.

DVD Title

The DVD Title entry field works as a text entry field with addition the standard increment/decrement arrows for selection of the DVD Title number that will be selected for use in the currently selected Viddie Clip. You will be warned to set this value to a range of between 1 and 99, if you try to enter a value out of that range.

Time In / Time Out

Like the DVD Title window, these are combination text and increment/decrement fields, where you'll enter the In and Out times of the currently selected Viddie Clip. As well, you can tab from field to field for quick entry of times. Please Note that you will be warned of times that are out range. As an example; 60 minutes, 60 seconds, and 30 frames are all out of range time settings.

Description

The Viddie Clip Description window is where you'll enter text, which describes the importance or relevance of the current Viddie Clip in relation to the whole Viddie Montage. This text will be displayed in the appropriate area of the Viddies Menu.

Viddie Build Action Buttons

Figure 4.1.11 shows the Viddie Build Action Buttons, which you'll use to test and export Viddie Montages.
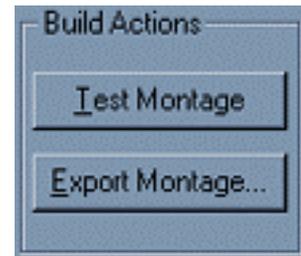
Figure 4.1.11
Viddie Build Actions

Test Montage

Immediately plays the currently loaded Viddie Montage. The complete NUON Development System must be running in order for this to work. As well, a DVD disc must be playing in order for it to run. When clicked, the Viddie Montage will begin to play and the dialog box shown in Figure 4.1.12 will be displayed. The progress bar indicates the approximate position in the Viddie Montage. The dialog will disappear after the Viddie Montage is completed.
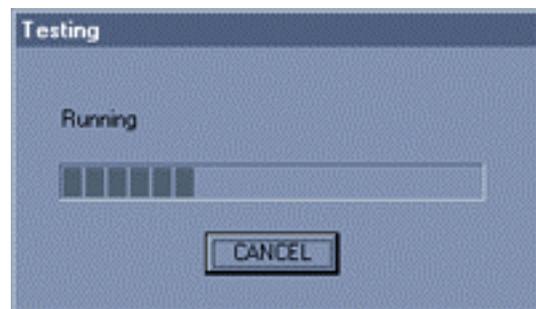
Figure 4.1.12 Viddie Montage Test Dialog

Export Montage

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Exports the current Viddie Montage as a Director Script format file (.dsb), which will run on NUON when the final project is built. When clicked, a dialog box as shown in Figure 4.1.13 will be displayed. You'll then select a Viddie Montage Number, which will be between 1 and 16 (the maximum number of Viddie Montages). This number correlates to a specific entry in the Viddies Menu, and will have been specified by the Creative Producer of the project. Once the number has been selected you'll click enter and the Viddie Montage will be exported to the proper directory.

Figure 4.1.13 Export Viddie Dialog

Clip Action Buttons

Figure 4.1.14 shows the Viddie Action Buttons, which you'll use to Add, Insert, Delete and Move Viddie Clips that appear in the Viddie Clips Chart.

Add Clip

Adds a new Viddie Clip to the Viddie Clip Chart. The new Viddie Clip will be added to the bottom of the Viddie Clip Chart. This can later be changed using the Move Up and Move Down buttons as described below.

Insert Clip

Inserts a new Viddie Clip to the Viddie Clip Chart. The new Viddie Clip will be inserted above the currently selected Viddie Clip. All Viddie Clips below the Inserted Clip will be moved down the Chart, and therefore play back in the same order.

Delete Clip
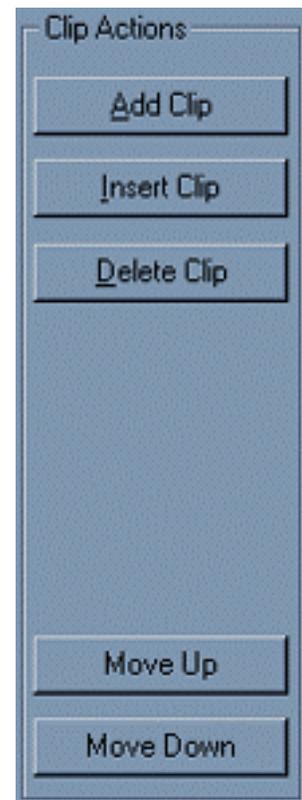
**Figure 4.1.14
Clip Action Buttons**

Deletes the currently selected Viddie Clip from the Viddie Clip Chart. All Viddie Clips below the Deleted Clip will be moved up the Chart, and therefore play back in the same order.

Move <u>Up</u>

Moves the currently selected Viddie Clip up the Viddie Clip Chart, therefore causing it to appear earlier in the Viddie Montage. Viddie Clips that were above the moved Viddie Clip are displaced to now be below it, and are therefore seen after it.

Move <u>Down</u>

Moves the currently selected Viddie Clip down the Viddie Clip Chart, therefore causing it to appear later in the Viddie Montage. Viddie Clips that were below the moved Viddie Clip are displaced to now be above it, and are therefore seen before it.

An Introduction to NUON Gamma Zooms

   NUON Gamma Zooms are a way for Creative Producers at the movie studio to add value to a DVD title by creating virtual stop-off points in a movie title, where the viewer can explore interesting content using Zoom, Pan and Gamma controls. This could include for example, showing points of historic interest used in a films setting, or freezing the action of an exciting space adventure film for the viewers further exploration. The options are endless and totally in the control of the Creative Producer.

   When presented to the viewer, Gamma Zooms appears as a menu of items to be explored. We refer to these points of interest as Z-Frames, which are points where the video is automatically paused for the viewer's perusal. As well, there may be some descriptive text relating the Z-Frames importance to the title, or other significant information. We'll discuss this in further detail in the next few sub-sections.

   The real power of Gamma Zooms, like other NUON Enhancements, is that they are built upon an already completed video assets, no additional editing to the film asset is necessary. In addition, Gamma Zooms can span all of the titles on a DVD being NUON Enhanced, so the main feature, as well as theatrical trailers, deleted scenes and director's cuts can be used in a collection of Gamma Zooms.

What is a Gamma Zoom Z-Frame?

   In the same way that a book publisher might pull frames of a film to use in a making-of type book, the Gamma Zooms Application allows a Creative Producer to pull, and then specify Zoom areas (called Vista Points) and make Gamma changes to show in greater detail what is going on in the title being enhanced with Gamma Zooms.

   Let's use the example of the afore-mentioned space adventure film to describe a Gamma Zoom Enhanced project. This is of course going to be fast paced with lots of detail in many areas all at once. To create a Gamma Zoom of a critical moment in the action, the Creative Director would start by locating an exact frame where a pivotal encounter occurs, this done by specifying the DVD Run-time for the frame. Next, let's assume that there is an approaching alien, and our heroes are taking note of this.

   This is where it gets interesting, as the Director can now specify those points of interest as Vista Points, which can then be selected by the viewer to be zoomed in on. As well, Gamma change can be specified for the whole Z-Frame, which would change relative brightness and contrast of the Z-Frame, or if desired for specific Vista

Points. This could be used for lightening a shadowy area where some of the alien's confederates might lurk, or better yet, to better show what the emblem on the rocket ship says. In this example there would only be three Vista Points specified for this particular Gamma Zoom, but in fact the number of Vista Points has no limit. And finally, a sentence or two of descriptive text can be added, describing the importance of the Gamma Zoom frame in relationship to the title. Figure 4.2.1 shows our space adventure example, with the relationship between the Video Title and several Z-Frames. One of these Z-Frames (the center one) has three Vista Points shown, which include close-ups of our space travelers, and their rocket ships insignia.
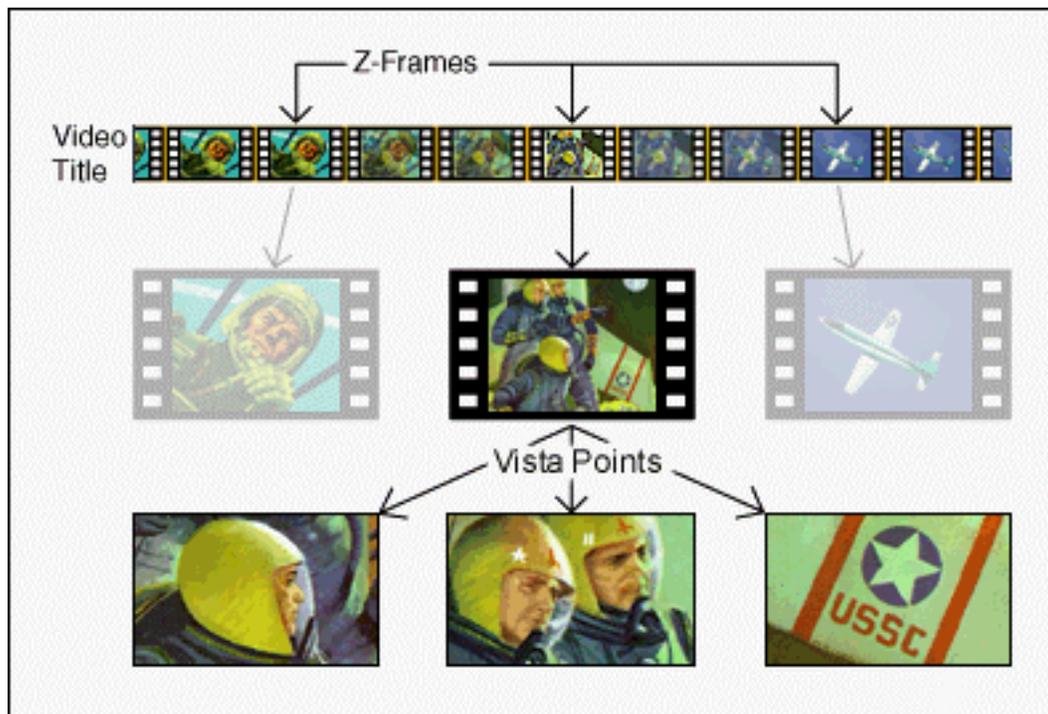
Figure 4.2.1 The relationship between a Video Title, Z-Frames and Vista Points.

Please note in the previous illustration, that the selected Z-Frames appear in a chronologically sequential order. This was only for the example. In fact, Z-Frames can be pulled in any order and from any Title that appears on the DVD including; Director's cuts, deleted scenes, and theatrical trailers. Also, note that this example has been greatly simplified, and the each Z-Frame may have several Vista Points.

The Creative Producer doesn't have to stop at one Z-Frame. In fact, we've set up templates, which will allow you to build menus with several (up to 16) Z-Frames on them. Once the Creative Producer has compiled the documents for all of the desired Z-Frames, they'll be sent to you, the NUON Enhancement Author. You'll then go on to add these run lists to menu art and code templates with the Gamma Zoom Composer.

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How NUON Gamma Zooms are presented to the viewer

   Sitting in their favorite easy chair, the viewer will be entertained by all of this creative work by simply selecting the Gamma Zoom Menu, navigating to the desired Z-Frame and pressing enter. Figure 4.2.2 shows an example of one of the menu templates that we've included in this NUON Hybrid Kit.
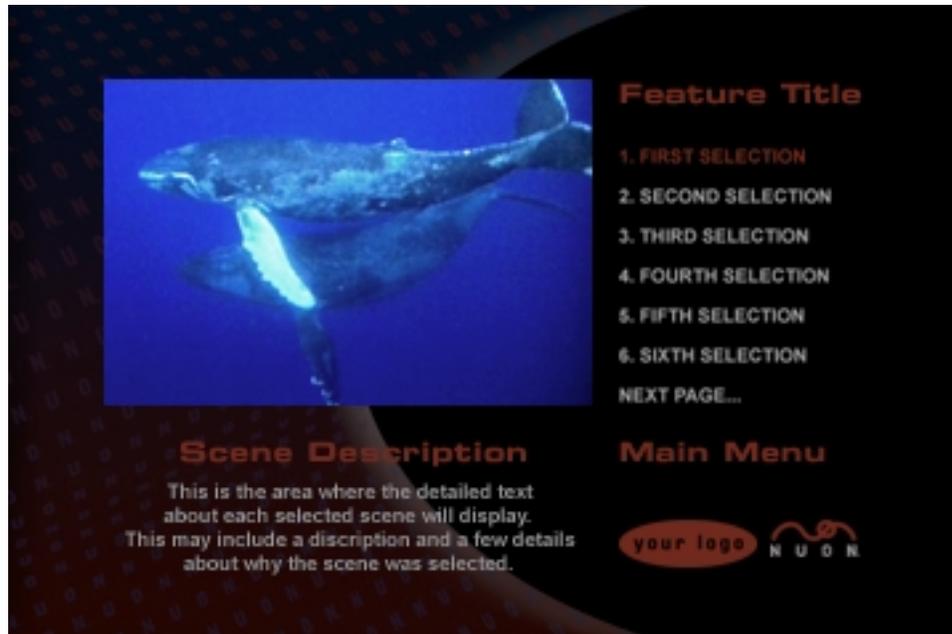
Figure 4.2.2 A NUON Menu Template, what the viewer sees.

   In the figure above, you'll note first that this is a full screen bitmap image (720 × 480 pixels) much like any other piece of DVD menu artwork. One big difference between this piece of art and the usual DVD menu is that NUON allows for "picture-in-graphic" display. So, though not apparent here, the pair of swimming whales actually appear in a scaled down video window, in real time, and as full motion video! Another notable thing about NUON Features Menus is that text can be displayed dynamically, which is to say that, menu items or other text, such as the "Scene Description" text (the white text) isn't included in the bitmap image. This text is displayed by NUON, and is based on the text that you'll be entering to the Gamma Zoom Composer. Other graphic items, such as logos and heading text will still be part of the background bitmap.

Working With The Gamma Zoom Application

   Let's open the application and get to work! First, you'll need to locate the GammaZooms.exe application in the following path, YourHardDrive:\HybridKit\bin.

Double-click the application icon and you'll see a window that looks like Figure 4.2.3. This is the Gamma Zoom Composer Main Window. You'll enter pertinent Gamma Zoom Z-Frame information in this easy to use interface. The Gamma Zoom Composer is a standard window with a menu bar at the top, text entry fields, and buttons to make selections.

Figure 4.2.3 The Gamma Zooms Composer Main Window.

One of the most notable features of this window is the Vista Point Chart, which takes up most of the window's real estate. This is where all of the Vista Point info for the particular Z-frame that you're working on will be displayed. You won't be making any changes here, but this chart is no less important, as it displays all of the info on the Z-Frame that you're creating. Just above the chart is the Z-Frame Name text field, to the right are the Z-Frame Action Buttons, and below the chart are the Vista Point Setting fields, which is where all of the important Vista Point info is entered.

In our example above, the Z-Frame is named "What's The Point?" (Z-Frame Name), and includes three Vista Points named; "Look Over There", "Look Over Here", and "Now Look Here". Along with each of these are X and Y coordinates

(corresponding to locations in the Z-Frame), Zoom Level, and Gamma checkbox and text entry field. The info in the window shown, when exported, will create a single Gamma Zoom Z-Frame named "What's The Point". This Z-Frame, when displayed by NUON will list in a menu the named Vista Points, which can then be selected by the viewer for zooming.

Instant Gratification (A tutorial)

We've told you enough about what a Gamma Zoom is, and a bit about the Gamma Zoom Composer, so finally, let's look at how you'll create Gamma Zoom Z-Frames. We'll do this in a step-by-step fashion, so you'll see just how simple it all is. You can make up text and times for this tutorial as you go along. This is just for fun, right!

12. If you're development system includes a DVD Emulator, make sure the DVD Drive/Emulator data switch is set to DVD Drive position. You'll find information on the DVD Emulator in a separate document included with that module.

13. Make sure that your NUON Development System is powered on.

14. Load a DVD disc into the Reference Player disc drive.

15. Select New from the File Menu if you've entered any info while playing around, and choose No in response to the "save changes" dialog.

16. Enter a Z-Frame Name in the appropriate text field.

17. Enter a DVD Title number into the appropriate text field. Alternately you can use the up/down arrows.

18. Enter a Z-Frame Time in the appropriate fields. Note that you can tab from field-to-field and enter two digit time values. You can also use the up/down arrows if you like.

19. Enter a Pre-Roll Time, which is the number of seconds and frames that should roll before the Z-Frame is paused on.

20. Check the Use Gamma checkbox and adjust the Gamma number value. The default is 5, with 6 –10 being lighter, and 0 – 4 being darker.

21. Enter some descriptive text in the appropriate field. This completes the setting of the Z-Frame parameters. Now we'll move on to the Vista Point Settings.

22. Click the "Add Vista Point" Action Button at which time an "Untitled Vista Point" will appear at the top of the Vista Point Chart.

23. Enter a Vista Point Name in the appropriate text field.

DRAFT

24. Enter X and Y coordinates, which have limits of ± 360 for X, and ± 240 for Y. These values set the center position of the Zoom Area.

25. Enter a Zoom Level. This sets the ratio of the Zoom, which can be up to 700%.

26. Check the Use Gamma checkbox and adjust the Gamma number value. The default is 5, with 6 –10 being lighter, and 0 – 4 being darker. This will set the Gamma value for this Vista Point only. No other Vista Points will be affected.

27. Now, repeat steps 11 through 15 to add more Vista Points to this Z-Frame.

   Pretty simple! You'll note that as you continue to add Vista Points they are appended to the end of the chart. When displayed on a NUON player, these Vista Points will appear in the Vista Points Menu in the same order as they appear in the chart.

   You can show Z-Frames from any part of the DVD and in any order. They can be shown from end to beginning, or skip around, and can even jump from title to title! Before we go on to Export Gamma Zoom, let's have a look at the other Vista Point Action Buttons. They are as follows:

- Insert Vista Point, which will insert a new Vista Point into the Vista Point Chart above the currently selected Vista Point.

- Delete Vista Point, which will delete the currently selected Viddie Clip from the Viddie Clip Chart. There is NO undo function for this, so be careful.

- Move Up, which will move the currently selected Vista Point up the Vista Point Chart, and therefore to an earlier position in the Vista Point Menu.

- Move Down, which will move the currently selected Vista Point down the Vista Point Chart, and therefore to a later position in the Vista Point Menu.

(These buttons and their functioning are discussed in greater detail in the reference sub-section that follows this tutorial.)

   When you wish to save your work, select "Save As" from the File Menu, and enter a name for the project in the standard Save Dialog Box that appears. This is not the same as doing an Export, which we'll learn about below.

   There's now only one more step. All you have to do is click on the Export Gamma Zoom action button. A dialog box will appear and prompt you to select a Vista Point number. Leaving it set to 1, and clicking OK will do for now. This will automatically export your work to the NUON Scripting Language file format (.bob). It will be titled "coolZoomSet1", and put it into the appropriate directory. This is the final step in the

DRAFT

creation of a Gamma Zoom Z-Frame. In a real project there will no doubt be several Z-Frames that will appear on the Gamma Zoom menu, so the previous set of steps will be repeated for each Z-Frame. The only difference when creating a real project is the selection of the Gamma Zoom number in the Gamma Zoom Export step, where you select the number based on what the Creative Producer has specified.

For a detailed description of the functioning of all text fields, buttons, and menus of the Gamma Zoom Composer see the Gamma Zoom Composer Reference section of this manual starting on page 4.2.9.

Putting It All Together

Once, you've entered the data and exported each of the Gamma Zoom Z-Frame files, you'll want to see them in the context of a menu. Though this is discussed in greater detail in Section 3, NUON UI Templates & Tools, we'll briefly discuss the process here.

In this Hybrid Kit, we've included templates for building NUON Menus. These templates include both the menu code and bitmaps for all of the currently available NUON Features. These templates allow you to quickly see how a NUON project is built, and to give you an idea how it will look when completed. Please note that the included bitmaps have generic headings, titles, and menu item text. They have been included as a starting point for Graphic Artists developing for a NUON Features project, as well as system test for the Development System.

To build and load a NUON project to your development system you'll need to follow these steps:

10. If you're development system includes a DVD Emulator, make sure the DVD Drive/Emulator data switch is set to Emulator position. You'll find information on the DVD Emulator in a separate document included with that module.

11. Make sure that your NUON Development System is powered on.

12. Load a DVD disc into the Reference Player disc drive.

13. Locate and open the MS-DOS Prompt (also referred to as the "DOS BOX"), which you'll find under Programs in the Start Menu.

14. After the prompt, (">") type "makedat" to start the makedat batch file. This will automatically build your NUON project. If this seems to go by rather quickly, that's normal, as NUON Menu files are compact and are compiled very quickly.

15. After the prompt, type "mmkload" to start the load batch file. This will take between 12 and 15 seconds, and will display the percentage completed of each of

DRAFT

the files loaded to the Development System. When complete, the currently loaded disc should begin to play.

16. Press the Menu button on the remote to bring up the NUON Features Menu. This won't say NUON Features on it, as it's a generic template graphic.

17. Navigate to the Gamma Zoom Menu with the up/down arrow keys, and press enter to open the Gamma Zoom Menu.

18. The menu should open with "Gamma Zoom 1" already selected. Press enter to show your Z-Frame in full screen mode.

   That's it! You've just built and loaded a NUON project into the Development System. With that said, this was just a trial run, and in order to build a real project you'll want to go over Section 3 . The rest of this Section is comprised of a reference document, which describes in great detail all of the functions of the Gamma Zoom Composer.

DRAFT

Standard Pull-Down Menus

File Menu

Figure 4.2.4 shows the File Pull-Down Menu. This menu can either be pulled down with your pointing device, or invoked by the key combination Alt + F. Once pulled down, functions can either be selected with the pointing device, or invoked by hitting the key that corresponds to the underlined letter in the function name.

New (Ctrl+N)

Creates a New Gamma Zooms Composer Main Window by clearing the existing window of its contents. If there is an already opened window with project information, you'll be prompted to save your current work through a standard warning dialog box. If you need to open more than one window at a time you'll need to double-click the Gamma Zooms Composer application icon.

Figure 4.2.4 The File Pull-down Menu

Open (Ctrl+O)

Opens a Gamma Zooms Composer file that you have saved. The "Open" dialog box will be displayed where you'll select a file to be Opened. If there is an already Open file at the time that you choose to Open another, you'll be prompted to save your current work through a standard warning dialog box.

Gamma Zooms Composer files have the file extension .ngz and are only read by The Gamma Zooms Composer. This is the format, in which you'll save your work-in-progress, as well as finished projects, which you may wish to keep for future reference. These are not the files that you'll include in your final NUON menu project. Those files are discussed below under the Export Gamma Zooms button heading.

Save (Ctrl+S)

Saves the currently Opened project if it has been previously "Saved As", otherwise you'll prompted to name the project in the standard Save As dialog box.

Save <u>A</u>s (Ctrl+A)

Saves the currently Open or New file in the Gamma Zoom Composer (.ngz) format. The "Save As" dialog box will be displayed, and you'll be prompted to enter a file name.

<u>P</u>rint (Ctrl +P)

Prints only the contents of the Vista Points Chart to a connected printer. You'll be presented with a standard Windows print dialog box, where print options may be selected.

P<u>r</u>int Setup

Presents a standard Windows Print Setup dialog box, allowing you to set print parameters for your documents.

Recent Files

The Recent Files area between the Print function and the Exit function is a standard Windows feature showing exactly that. Up to four of the last files worked with will be displayed here.

E<u>x</u>it

Exits the Gamma Zooms Composer application. You will be prompted to save any un-saved work through a standard warning dialog box.

<u>E</u>dit Menu

Figure 4.2.5 shows the Edit Pull-Down Menu. We'll only give a brief description of these menu functions as all of them duplicate buttons in the Gamma Zooms Composer Main Window, and will be discussed in detail later. This menu can either be pulled down with your pointing device, or invoked by the key combination Alt + E. Once pulled down, functions can either be selected with the pointing device, or invoked by hitting the key that corresponds to the underlined letter in the function name.
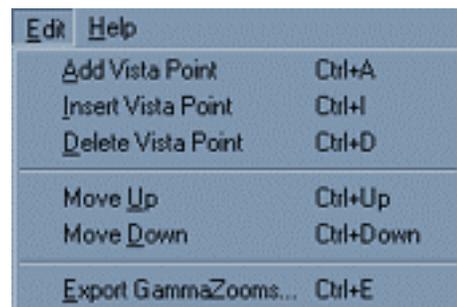
Edit Help	
Add Vista Point	Ctrl+A
Insert Vista Point	Ctrl+I
Delete Vista Point	Ctrl+D
Move Up	Ctrl+Up
Move Down	Ctrl+Down
Export GammaZooms...	Ctrl+E

Figure 4.2.5 The Edit Pull-down Menu.

<u>A</u>dd Vista Point (Ctrl +A)

Adds a New Vista Point to the end of the current Z-Frame.

Insert Vista Point (Ctrl +I)

Inserts a New Vista Point above the currently selected Vista Point.

Delete Vista Point (Ctrl +D)

Deletes the currently selected Vista Point from the Z-Frame.
Beware: there is NO undo function for this!

Move Up (Ctrl +Up)

Moves the currently highlighted Vista Point up the Vista Point Chart, and therefore to an earlier position in the Vista Point menu.

Move Down (Ctrl +Down)

Moves the currently highlighted Vista Point down the Vista Point Chart, and therefore to a later position in the Vista Point menu.

Export Viddie (Ctrl +E)

Is the final step in creating your Gamma Zoom Z-Frame.

Help Menu

Figure 4.2.6 The Help Pull-down Menu

Figure 4.2.6 shows the Help Pull-Down Menu. This menu can either be pulled down with your pointing device, or invoked by the key combination Alt + H.
Once pulled down, the function can either be selected with the pointing device, or invoked by hitting the A .

About NUON Gamma Zooms Composer…

You can find the software revision number and copyright information here.

Gamma Zoom Z-Frame Settings

Figure 4.2.7 shows the Gamma Zoom Settings area of the Main Gamma Zoom window. Encompassed here are all of the parameters that pertain to a Gamma Zoom Z-Frame, including Name, Title, Times, Gamma and Description. Parameters specific to Vista Points live in their own area below the Vista Point Chart.
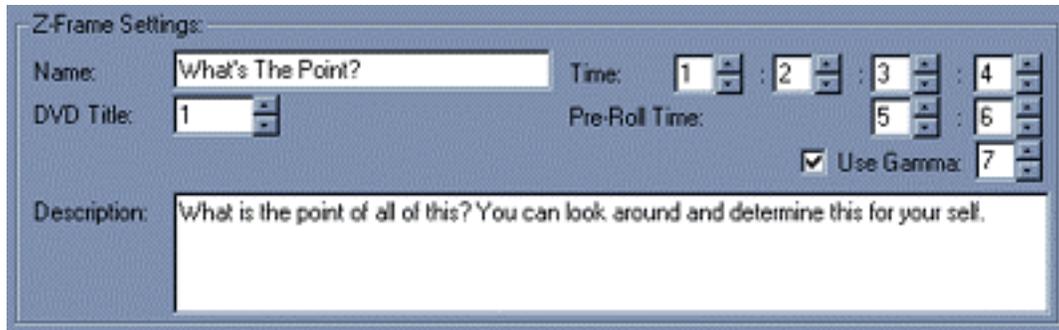
Figure 4.2.7 The Gamma Zoom Z-Frame Settings area

Name

This is you'll type the name of the Gamma Zoom Z-Frame, that will be displayed on the Gamma Zoom Menu that is presented to the viewer. So, spelling does count.

DVD Title

Selects the DVD Title for the Z-Frame to be pulled from. Remember, you can pull a Z-Frame from any title on a DVD, including the Main Feature, Director's Cuts, Theatrical Trailers, etc… You can highlight and type over the default value, or use the spinners to select titles 1 thru 99.

Time

Sets the Z-Frame stop time in Hours, Minutes, Seconds, and Frames. This is where the Z-Frame will pause after the defined Pre-Roll Time that you set. You can highlight and type over any of the time values, or use the spinners to select time values. The Hours value is limited to 4. The Minutes and Seconds values are of course limited to 59. And, the Frames value is limited to 29.

Pre-Roll Time

Sets the Pre-Roll Time in Seconds, and Frames. This is the amount time that video will be played before the Z-Frame is paused on. The Seconds value is of course limited to 59. And, the Frames value is limited to 29.

Use Gamma

Uses the Gamma Level set, if the checkbox is checked. The default value of 5 is neutral and you'll see no difference in the gamma of the image. Gamma values between 6 and 10 will cause the image to look brighter, while values of 0 to 4 cause a darker appearance. This Gamma setting will affect the whole Z-Frame when it is displayed in full screen mode.

Viddie Clip Chart

Figure 4.2.8 shows the Vista Point Chart, which is where you'll add, insert, delete and otherwise arrange Vista Points in Z-Frames. This is the main display area of the Gamma Zoom Composer, and most of the other controls in the main window have a direct effect on the chart. Specifically, the Vista Point Setting controls are used to edit the Vista Point parameters that appear in this chart.

The only direct effect that *you* can have on the chart is to select individual Vista Points for editing (with the aforementioned controls), as well as resizing the chart columns to accommodate showing text of differing lengths, though this shouldn't be necessary most of the time.

Name	X	Y	Zoom Level	Gamma
Look Over There	-30	200	500	4
Look Over Here	-300	240	700	-
Now Look Here	100	-230	300	7

Figure 4.2.8 The Vista Point Chart

Vista Point Settings

Figure 4.2.9 shows the Vista Point Settings area. This is where you'll make all of the settings for each of the Vista Points in a Z-Frame. As you Add Vista Points the Settings area will be set to the defaults shown. This is also where you'll edit a previously created Viddie Clip once you have selected it from the Viddie Clips Chart.

Vista Point Settings:
Name: Untitled Vista Point   X: 0   Zoom Level: 100 %
Y: 0   ☐ Use Gamma: 5

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Figure 4.2.9 The Vista Point Settings Area

Name

This is one the only pieces of data that doesn't get used by NUON or displayed on any menu screen. We've included this field for the benefit of you, the NUON Enhancement Author. Text that you input here will be displayed in the Name column of the Vista Point Chart along side all of the pertinent X/Y, Zoom, and Gamma data for the currently selected Vista Point. Each Vista Point of a Z-Frame has its own Name.

X and Y (Vista Point Coordinates)

Sets the X (horizontal) and Y (vertical) coordinates of the Vista Point. The origin point for X/Y is in the exact center of the 720w × 480h frame, so X values of between ± 320, and Y values of ± 200 are possible. Negative X values will set the Vista Point X to the left of the centerline, positive to the right. Negative Y values will set the Vista Point Y above the centerline, positive below it. Each Vista Point of a Z-Frame has its own X and Y coordinates.

****

Zoom Level

Sets the Zoom Level of the Vista Point to 100% (no effect) thru 700%. Each Vista Point of a Z-Frame has its own Zoom Level.

Use Gamma

Uses the Gamma Level set, if the checkbox is checked. The default value of 5 is neutral and you'll see no difference in the gamma of the image. Gamma values between 6 and 10 will cause the image to look brighter, while values of 0 to 4 cause a darker appearance. This Gamma setting will affect only the specific Vista Point (as opposed to the Z-Frame Gamma setting, which affects the whole Z-Frame) when it is displayed in full screen mode. Each Vista Point of a Z-Frame has its own Use Gamma settings.

Gamma Zoom Build Action Button

Figure 4.2.10 shows the Viddie Build Action Button, which you'll use to export Gamma Zoom Z-Frames.

Figure 4.2.10 Z-Frame Build Action

Export Gamma Zoom…

Figure 4.2.11 Export Z-Frame Numbering Dialog Box

Exports the current Z-Frame as a NUON Scripting Language file (.bob), which will run on NUON when the final project is built. When clicked, a dialog box as shown in Figure 4.2.11 will be displayed. You'll then select a Gamma Zoom Set number, which will be between 1 and 16 (the maximum number of Gamma Zoom Z-Frames). This number correlates to a specific entry in the Gamma Zoom Menu, and will have been specified by the Creative Producer of the project. Once the number has been selected you'll click enter and the Gamma Zoom Set will be exported to the proper directory.

Vista Point Action Buttons

Figure 4.2.12 Vista Point Action Buttons

Figure 4.1.12 shows the Vista Point Action Buttons, which you'll use to Add, Insert, Delete and Move Vista Points that appear in the Vista Point Chart.

Add Vista Point

Adds a new Vista Point to the Vista Point Chart. The new Vista Point will be added to the bottom of the Vista Point Chart. This can later be changed using the Move Up and Move Down buttons as described below.

Insert Vista Point

Inserts a new Vista Point to the Vista Point Chart. The new Vista Point will be inserted above the currently selected Vista Point. All Vista Point below the Inserted Vista Point will be moved down the Chart, and therefore play back in the same order.

Delete Vista Point

Deletes the currently selected Vista Point from the Vista Point Chart. All Vista Points below the Deleted Vista Point will be moved up the Chart, and therefore play back in the same order.

Move <u>Up</u>

Moves the currently selected Vista Point up the Vista Point Chart, therefore causing it to appear earlier in the Gamma Zoom Menu. Vista Points that were above the moved Vista Point are displaced to now be below it, and are therefore seen after it.

Move <u>Down</u>

Moves the currently selected Vista Point down the Vista Point Chart, therefore causing it to appear later in the Gamma Zoom Menu. Vista Points that were below the moved Vista Point are displaced to now be above it, and are therefore seen before it.

An Introduction to NUON Dynamic Chapter Selection

NUON Dynamic Chapters are a way for Creative Producers to add value to a DVD title by creating a much more intuitive chapter menu. With Dynamic Chapters the viewer can not only see the video asset that they're looking for, but read dynamically written descriptions of each scene as they're selected. And all of this comes at an extremely low hit to post-production time.

When presented to the viewer, Dynamic Chapters appears as a menu of items to be selected. As well, there may be some descriptive text relating the chapter's importance to the title, or other significant information. We'll discuss this in further detail in the next few sub-sections.

The real power of Dynamic Chapters, like other NUON Enhancements, is that they are built upon already completed video assets, and no additional editing to the film asset is necessary.

How NUON Dynamic Chapter Selection is presented to the viewer

Sitting in their favorite easy chair, the viewer will be entertained by all of this creative work by simply selecting the Dynamic Chapter Menu, navigating to the desired Chapter Name and pressing enter. Figure 4.2.1 shows an example of one of the menu templates that we've included in this NUON Hybrid Kit.
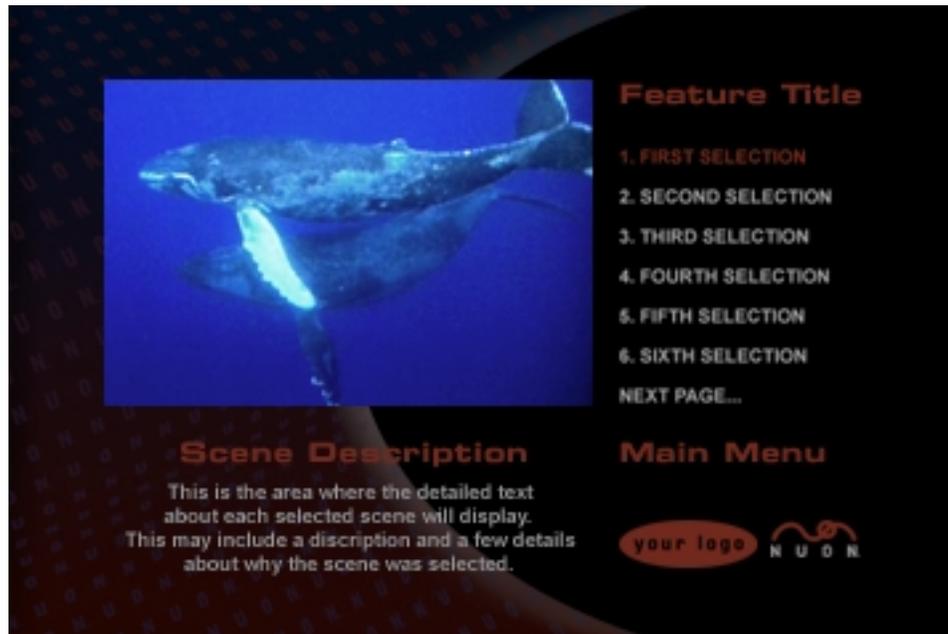

Figure 4.3.1 A NUON Menu Template, what the viewer sees.

In the figure above, you'll note first that this is a full screen bitmap image (720 × 480 pixels) much like any other piece of DVD menu artwork. One big difference between this piece of art and the usual DVD menu is that NUON allows for "picture-in-graphic" display. So, though not apparent here, the pair of swimming whales actually appear in a scaled down video window, in real time, and as full motion video! Another notable thing about NUON Features Menus is that text can be displayed dynamically, which is to say that, menu items or other text, such as the "Scene Description" text (the white text) isn't included in the bitmap image. This text is displayed by NUON, and is based on the text that you'll be entering to the Dynamic Chapter Composer. Other graphic items, such as logos and heading text will still be part of the background bitmap.

Working With The Dynamic Chapter Composer

Let's open the application and get to work!

Figure 4.3.2 The Dynamic Chapter Composer Main Window.

First, you'll need to locate the DynamicChapters.exe application in the following path YourHardDrive:\HybridKit\bin. Double-click the application icon and you'll see a window that looks like Figure 4.2.2. This is the Dynamic Chapter Composer Main Window. You'll enter pertinent Dynamic Chapter information in this easy to use interface. The Dynamic Chapter Composer is a standard window with a menu bar at the top, text entry fields, and buttons to make selections.

One of the most notable features of this window is the Chapter Chart, which takes up most of the space within the window. This is where all of the Chapter specific information will be displayed. You won't be making any changes here, but this chart is no less important, as it displays all of the info on the Dynamic Chapter listing that you're creating. Just above the chart are the Dynamic Chapter Global Settings, to the right is the Dynamic Chapter Action Button, and below the chart are the Chapter Setting fields, which is where all of the important Chapter information is entered.

In Figure 4.3.2, the DVD Title to be listed for the Dynamic Chapter Menu is Title 1, and there will be 3 Chapters listed. The 3 Chapters are named; "Car Blows Up", "Getting Started" and "Love Scene". As well, each of these listed Chapters has a short piece of descriptive text associated with them. The info in the window shown, when exported, will create a single Dynamic Chapter listing This listing, when displayed by NUON will list in a menu the named Chapters, which can then be selected, along with their respective descriptive text by the viewer.

Instant Gratification (A tutorial)

We've told you enough about what a Dynamic Chapter is, and a bit about the Dynamic Chapter Composer, so finally, let's look at how you'll create a Dynamic Chapter Listing. We'll do this in a step-by-step fashion, so you'll see just how simple it all is. You can make up text for this tutorial as you go along. This is just for fun, right!

28. If you're development system includes a DVD Emulator, make sure the DVD Drive/Emulator data switch is set to DVD Drive position. You'll find information on the DVD Emulator in a separate document included with that module.

29. Make sure that your NUON Development System is powered on.

30. Load a DVD disc into the Reference Player disc drive.

31. Select New from the File Menu if you've entered any info while playing around, and choose No in response to the "save changes" dialog.

32. Enter a Z-Frame Name in the appropriate text field.

33. Enter a DVD Title number into the appropriate text field. Alternately you can use the up/down arrows.

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34. Enter a Z-Frame Time in the appropriate fields. Note that you can tab from field-to-field and enter two digit time values. You can also use the up/down arrows if you like.

35. Enter a Pre-Roll Time, which is the number of seconds and frames that should roll before the Z-Frame is paused on.

36. Check the Use Gamma checkbox and adjust the Gamma number value. The default is 5, with 6 –10 being lighter, and 0 – 4 being darker.

37. Enter some descriptive text in the appropriate field. This completes the setting of the Z-Frame parameters. Now we'll move on to the Vista Point Settings.

38. Click the "Add Vista Point" Action Button at which time an "Untitled Vista Point" will appear at the top of the Vista Point Chart.

39. Enter a Vista Point Name in the appropriate text field.

40. Enter X and Y coordinates, which have limits of ± 360 for X, and ± 240 for Y. These values set the center position of the Zoom Area.

41. Enter a Zoom Level. This sets the ratio of the Zoom, which can be up to 700%.

42. Check the Use Gamma checkbox and adjust the Gamma number value. The default is 5, with 6 –10 being lighter, and 0 – 4 being darker. This will set the Gamma value for this Vista Point only. No other Vista Points will be affected.

43. Now, repeat steps 11 through 15 to add more Vista Points to this Z-Frame.

Pretty simple! You'll note that as you continue to add Vista Points they are appended to the end of the chart. When displayed on a NUON player, these Vista Points will appear in the Vista Points Menu in the same order as they appear in the chart.

You can show Z-Frames from any part of the DVD and in any order. They can be shown from end to beginning, or skip around, and can even jump from title to title! Before we go on to Export Dynamic Chapter, let's have a look at the other Vista Point Action Buttons. They are as follows:

- Insert Vista Point, which will insert a new Vista Point into the Vista Point Chart above the currently selected Vista Point.

- Delete Vista Point, which will delete the currently selected Viddie Clip from the Viddie Clip Chart. There is NO undo function for this, so be careful.

- Move Up, which will move the currently selected Vista Point up the Vista Point Chart, and therefore to an earlier position in the Vista Point Menu.

- Move Down, which will move the currently selected Vista Point down the Vista Point Chart, and therefore to a later position in the Vista Point Menu.

(These buttons and their functioning are discussed in greater detail in the reference sub-section that follows this tutorial.)

When you wish to save your work, select "Save As" from the File Menu, and enter a name for the project in the standard Save Dialog Box that appears. This is not the same as doing an Export, which we'll learn about below.

There's now only one more step. All you have to do is click on the Export Dynamic Chapter action button. A dialog box will appear and prompt you to select a Vista Point number. Leaving it set to 1, and clicking OK will do for now. This will automatically export your work to the NUON Scripting Language file format (.bob). It will be titled "coolZoomSet1", and put it into the appropriate directory. This is the final step in the creation of a Dynamic Chapter Z-Frame. In a real project there will no doubt be several Z-Frames that will appear on the Dynamic Chapter menu, so the previous set of steps will be repeated for each Z-Frame. The only difference when creating a real project is the selection of the Dynamic Chapter number in the Dynamic Chapter Export step, where you select the number based on what the Creative Producer has specified.

For a detailed description of the functioning of all text fields, buttons, and menus of the Dynamic Chapter Composer see the Dynamic Chapter Composer Reference section of this manual starting on page 4.2.9.

Putting It All Together

Once, you've entered the data and exported each of the Dynamic Chapter Z-Frame files, you'll want to see them in the context of a menu. Though this is discussed in greater detail in Section 3, NUON UI Templates & Tools, we'll briefly discuss the process here.

In this Hybrid Kit, we've included templates for building NUON Menus. These templates include both the menu code and bitmaps for all of the currently available NUON Features. These templates allow you to quickly see how a NUON project is built, and to give you an idea how it will look when completed. Please note that the included bitmaps have generic headings, titles, and menu item text. They have been included as a starting point for Graphic Artists developing for a NUON Features project, as well as system test for the Development System.

To build and load a NUON project to your development system you'll need to follow these steps:

DRAFT

19. If you're development system includes a DVD Emulator, make sure the DVD Drive/Emulator data switch is set to Emulator position. You'll find information on the DVD Emulator in a separate document included with that module.

20. Make sure that your NUON Development System is powered on.

21. Load a DVD disc into the Reference Player disc drive.

22. Locate and open the MS-DOS Prompt (also referred to as the "DOS BOX"), which you'll find under Programs in the Start Menu.

23. After the prompt, (">") type "makedat" to start the makedat batch file. This will automatically build your NUON project. If this seems to go by rather quickly, that's normal, as NUON Menu files are compact and are compiled very quickly.

24. After the prompt, type "mmkload" to start the load batch file. This will take between 12 and 15 seconds, and will display the percentage completed of each of the files loaded to the Development System. When complete, the currently loaded disc should begin to play.

25. Press the Menu button on the remote to bring up the NUON Features Menu. This won't say NUON Features on it, as it's a generic template graphic.

26. Navigate to Dynamic Chapter with the up/down arrow keys, and press enter to open the Dynamic Chapter Menu.

27. The menu should open with "Dynamic Chapter 1" already selected. Press enter to start your Viddie Montage running. When it does, it should look exactly as it did when you ran Test Viddie in the step-by-step in the Instant Gratification section. ***

   That's it! You've just built and loaded a NUON project into the Development System. With that said, this was just a trial run, and in order to build a real project you'll want to go over Section 3 . The rest of this Section is comprised of a reference document, which describes in great detail all of the functions of the Dynamic Chapter Composer.

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Standard Pull-Down Menus

<u>F</u>ile Menu

Figure 4.2.4 shows the File Pull-Down Menu. This menu can either be pulled down with your pointing device, or invoked by the key combination Alt + F. Once pulled down, functions can either be selected with the pointing device, or invoked by hitting the key that corresponds to the underlined letter in the function name.
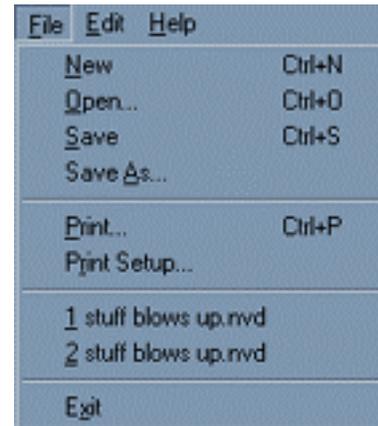

Figure 4.2.4 The File Pull-down Menu

<u>N</u>ew (Ctrl+N)

Creates a New Dynamic Chapter Composer Main Window by clearing the existing window of its contents. If there is an already opened window with project information, you'll be prompted to save your current work through a standard warning dialog box. If you need to open more than one window at a time you'll need to double-click the Dynamic Chapter Composer application icon.

<u>O</u>pen (Ctrl+O)

Opens a Dynamic Chapter Composer file that you have saved. The "Open" dialog box will be displayed where you'll select a file to be Opened. If there is an already Open file at the time that you choose to Open another, you'll be prompted to save your current work through a standard warning dialog box.

Dynamic Chapter Composer files have the file extension ".ndc" and are only read by The Dynamic Chapter Composer. This is the format, in which you'll save your work-in-progress, as well as finished projects, which you may wish to keep for future reference. These are not the files that you'll include in your final NUON menu project. Those files are discussed below under the Export button heading.

<u>S</u>ave (Ctrl+S)

Saves the currently Opened project if it has been previously "Saved As", otherwise you'll prompted to name the project in the standard Save As dialog box.

Save <u>A</u>s (Ctrl+A)

Saves the currently Open or New file in the Dynamic Chapter Composer (.ndc) format. The "Save As" dialog box will be displayed, and you'll be prompted to enter a file name.

Print (Ctrl +P)

Prints only the contents of the Chapter Chart to a connected printer. You'll be presented with a standard Windows print dialog box, where print options may be selected.

Print Setup

Presents a standard Windows Print Setup dialog box, allowing you to set print parameters for your documents.

Recent Files

The Recent Files area between the Print function and the Exit function is a standard Windows feature showing exactly that. Up to four of the last files worked with will be displayed here.

Exit

Exits the Dynamic Chapter Composer. You will be prompted to save any un-saved work through a standard warning dialog box.

Edit Menu

Figure 4.2.5 shows the Edit Pull-Down Menu. This menu can either be pulled down with your pointing device, or invoked by the key combination Alt + E. Once pulled down, functions can either be selected with the pointing device, or invoked by hitting the key that corresponds to the underlined letter in the function name.
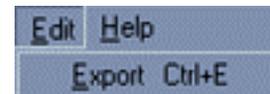
Export (Ctrl +E)

Is the final step in creating your Dynamic Chapter listing.

Help Menu

Figure 4.2.6 shows the Help Pull-Down Menu. This menu can either be pulled down with your pointing device, or invoked by the key combination Alt + H. Once pulled down, the function can either be selected with the pointing device, or invoked by hitting the A .

About NUON Dynamic Chapter Composer…

You can find the software revision number and copyright information here.

Dynamic Chapter Global Settings

Figure 4.2.7 shows the Dynamic Chapter Settings area of the Main Dynamic Chapter window. Encompassed here are the parameters that pertain to a Dynamic Chapter including DVD Title, The Number of Chapters in that title. Parameters specific to each of the Chapters live in their own area below the Chapter Chart.
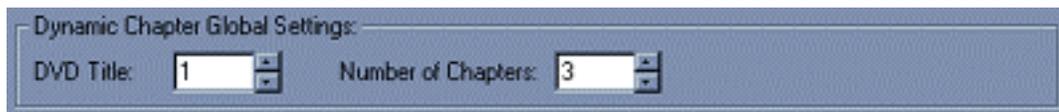

Figure 4.2.7 The Dynamic Chapter Global Settings area

DVD Title

Selects the DVD Title that your Dynamic Chapter Menu will refer to. Remember, you can build a Dynamic Chapter listing based on only one DVD Title for any NUON Hybrid Disc. You can highlight and type over the default value, or use the spinners to select titles 1 thru 99.

Number of Chapters

Sets the total number of chapters to be listed in the Dynamic Chapter Menu. You can highlight and type over the default value, or use the spinners to select titles 1 thru 99.

Chapter Chart

Figure 4.2.8 shows the Chapter Chart, which is where you'll select chapters to then edit their Names and Descriptions in the Chapter Settings area. This is the main display area of the Dynamic Chapter Composer, and all of the other controls in the main window have a direct effect on the chart. Specifically, the Chapter Setting controls are used to edit the Chapter text info that appears in this chart.

The only direct effect that *you* can have on the chart is to select individual Chapters for editing by clicking anywhere within a chapter's row. As well, you can resize the chart columns to accommodate showing text of differing lengths.

Figure 4.2.8 The Chapter Chart

Chapter Settings

Figure 4.2.9 shows the Chapter Settings area. This is where you'll make all of the settings for each of the Chapters. This is also where you'll edit previously created Chapter info once you have selected it from the Chapter Chart.

Figure 4.2.9 The Chapter Settings Area

Number

This is the only piece of data that is not editable. It's here only to re-iterate the currently selected Chapter number.

Name

This is where you'll enter the Chapter Name that will be displayed in the Dynamic Chapter Menu, when displayed in NUON.

Description

This is where you can enter text describing each chapter, it's highlights, or relevance to the DVD Title.

Dynamic Chapter Build Action Button

Figure 4.2.10 shows the Dynamic Chapter Build Action Button, which you'll use to export Dynamic Chapter listings. When you do press this button, a proprietary NUON file will be exported the appropriate directory, and you're done with the Dynamic Chapter Composer.

Binary: (Binary file) In cases where it is used in this manual; a file that can be interpreted by the NUON DVD player engine. This is alternately referred to as "byte code" or "machine code".

NUON Special Features Applications: A suite of software applications, such as Viddie Composer, Gamma Zooms Composer, and Dynamic Scene Select Composer, which allows for the creation of NUON Enhanced DVD Features.

NUON Enhancement Author: One who creates NUON Enhanced DVD Titles. You.

NUON Reference Player: The DVD disc playing hardware part of the NUON Development System.

Run Time: (or Run-time) refers to something that happens while a piece of software is actually running. In cases where it is used in this manual, ********************

Viddie Clip: Is the smallest unit within a Viddie Montage. An individual shot, scene, or sequence defined by an "In" and an "Out" runtime, which will usually be defined by creatives at the movie studio.

Viddie Montage: A thematic collection of shots, scenes or sequences. Made up of Viddie Clips.

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