

# SPEA 3D-World

**3D-Viewer for:**

AutoCAD

Windows

MicroStation

**Animation Previewer for:**

3D Studio

**User Manual**

Benutzerhandbuch



Part Number 1740 9902.3  
Rel. 0195  
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### Important Note

You **must imperatively** read the relevant README file on your installation disks and all the documentation supplied with this product **before** installing it! If you fail to do so SPEA can not accept any responsibility for claims that may be caused as a consequence.

To see the README file, put the relevant labelled disk in your floppy drive and type:

A:

SHOW BIGFOCUS.ENG (for BigFocus/3D-Viewer for AutoCAD and Animation Previewer) or

SHOW BIGMICRO.ENG (for BigMicro for MicroStation)

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# General Information

## Guide to this Manual

This manual is divided into four parts:

Part 1	Introduction
Part 2	Tells you how to install the hardware lock and the different software driver packages.
Part 3	Using 3D-World: - AutoCAD DOS 3D-Viewer - 3D-Viewer for Windows - MicroStation DOS 3D-Viewer - Animation Previewer
Index	To enable you to quickly find topics in this manual.

## Symbols and Conventions

The symbols and syntax conventions used in this manual are the same as described in the installation manual of your SPEA graphics board.

## Delivery Scope Checklist Delivery Scope Checklist

Your SPEA 3D-World package should contain the following items:

- 3D-World hardware lock ('dongle')
- this manual
- the following 3.5" disks:
  - 1x 'BigFocus for AutoCAD Rel. ... (DOS)
  - 1x 'BigFocus for AutoCAD for Windows, Animation Previewer for 3D Studio, 3D Viewer for MicroStation 5'
  - 1x '3D-Win for AutoCAD for Windows'

## Graphics Boards Supported

This software package has been put together for the SPEA V7-MERCURY series graphic boards. Note however, that the **3D-Win for AutoCAD for Windows** module can be used with any Windows accelerator board (i.e. it is hardware independant).

## SPEA Disk Format

The SPEA software is supplied on high density (1.4 MB) 3,5" floppy disks. The current utility software and various drivers are available around the clock and can be downloaded from the SPEA Bulletin Board (Mailbox).

## Last-Minute Changes - README file

Our software is constantly being improved and updated. This means that it may not have been possible to document the most current software changes. The latest information is contained in a corresponding README file.

The README file normally appears on the screen automatically at the end of the software installation. You can also read the file at any time from your hard disk (after the installation) with the corresponding command:

```
SHOW BIGFOCUS.ENG  
(for BigFocus/3D-Viewer for AutoCAD and Animation Previewer)  
or  
SHOW BIGMICRO.ENG  
(for BigMicro for MicroStation)
```

## Support

The following support services are offered by SPEA Software AG:

- technical support (telephone, SPEA ExpertLine)

- online information and software updates per modem (SPEA Mailbox)
- software updates on disk via the SPEA UpdateService

Further information concerning these support services can be found in the 'SPEA ExpertLine' pamphlet (colored info sheet) enclosed with your board.

### **Company Address**

SPEA Software AG  
Moostr. 18B  
D-82319 Starnberg

Tel: +49 81 51 26 60  
Fax: +49 81 51 21 258

# Part 1

## Introduction

### What is 3D-World?

SPEA's 3D-World software package is intended for AutoCAD (DOS/Windows), 3D-Studio and MicroStation users. 3D-World contains:

- a 3D Viewer for AutoCAD DOS and Windows
- a 3D Viewer for MicroStation
- an Animation Previewer for 3D-Studio (high speed rendered animation preview)

### Features of the AutoCAD 3D Viewer

- Simple and fast view modification (camera orientation is changed with scroll bars or mouse movements)
- Zoom views
- 'Walk' animations using polylines
- Fast and impressive rendering
- Easy animation recordings (FLIC and SPEA Teach files)
- Reads the following file formats \*.DWG, \*.3DS and \*.DXF (must be Autodesk compatible!)
- DOS applications: images can be saved in \*.GIF or \*.PCX files
- Use of light source and layer information in 3D-Win
- Extensive online help
- The 3D-Viewer for Windows (3D-Win) can be run on any Windows graphics accelerator

### Features of the MicroStation 3D Viewer

- Simple and fast view modification (viewing orientation is changed with scroll bars or mouse movements)
- Zoom views
- Fast and impressive rendering (various styles) with transfer back to the MicroStation view windows
- Use of light source and layer information
- Design status report (number of elements, free memory, current view strategy and textures)

### Features of the Animation Previewer

- Rendering of 3D-Studio images with resolutions up to 1280 x 1024 with 256 colors or 800 x 600 with 16.7 million colors (according to the limitations of your graphics board)
- Display of animations up to 800 x 600 with 16.7 million colors
- Color, shading and light source manipulation prior to rendering and animation creation

### Software Updates

Software updates are available free of charge via SPEA's Mailbox (and partially via CompuServe)

### Recommended System Configuration

Your hardware platform (PC configuration) will play a major role in the speed and efficiency of 3D-World as it is a graphics intensive product.

#### Minimum System requirements:

- 386 PC, 40 Mhz with 8 MB system memory
- Hard disk with at least 4 MB free space

The following system configuration is **highly recommended**:

486 PCI or VESA Local Bus or Pentium system

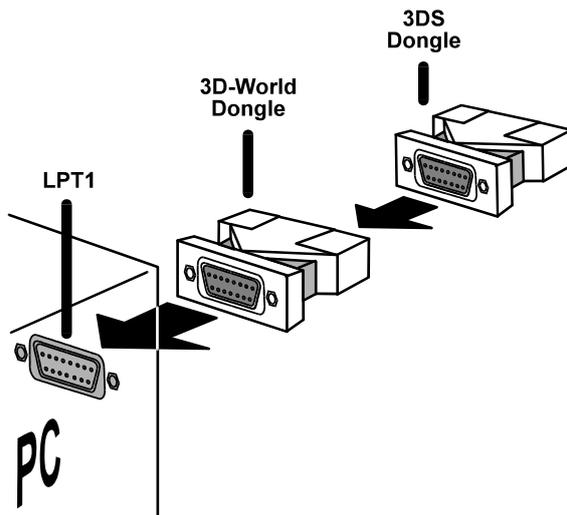
66 Mhz (Pentium: 90 Mhz) or faster

if possible 16 MB system memory or more (32 MB is highly recommended for those users  
intending to work with the 3D-Viewer for MicroStation)

## Part 2 Installation

### Installing the Hardware Lock (Dongle)

To install the 3D-World hardware lock (which you must do before installing any software), simply push-fit the lock onto parallel port #1 'LPT1' (15-pin sub-D-connector) of your PC. If you are using other locks (e.g. 3D Studio) on this port, then note that the order in which the locks are fitted is unimportant. If you are using a printer on LPT1 then the printer connector is simply inserted into the back of the 3D-World lock.



*Installing the 3D-World Hardware Lock*

### Software Requirements

The corresponding application (AutoCAD DOS, Windows, 3D-Studio, MicroStation) must be already installed and configured for standard VGA (640 x 480). If you are installing an application for the first time, it is a good idea to configure it for a standard VGA adapter first and *then* check that it functions correctly before moving on to the 3D-World installation. This enables you to eliminate any possible application-related problems.

### AutoCAD (SPEA BigFocus Driver)

---

BigFocus is SPEA's basic extended-function driver for AutoCAD 12 /13 (DOS) and AutoCAD for Windows. Both versions of BigFocus (DOS or Windows) contain 3D functionality in the 3D-Viewer. This functionality is made available to you via the hardware lock contained in your 3D-World package.

Having installed the hardware lock as previously described, you can continue with the following sections according to the version of AutoCAD that you own.

#### AutoCAD 12 / 13 (DOS)

1. Put the disk 'BigFocus for AutoCAD DOS (1/3)' **from your 3D-World package** drive A: and enter:  
A:  
INSTALL
2. Select E for English at the next prompt.
3. Select the DOS driver version:  
SPEA BigFocus driver for AutoCAD 12/13 DOS
4. Follow the installation answering questions about the location and language of the application on the way.

5. When the installation is finished, RCSETUP.BAT is copied into your GDC directory in order to set the environment variables needed for the BigFocus tools. **Important:** you **must** start this file before every AutoCAD session! To make sure that this happens, your AUTOEXEC.BAT file is modified (to call the batch file).
6. Read the information in the BIGFOCUS README file (automatically shown at the end of the installation).
7. Reboot your system to set the environment variables etc. for BigFocus.
8. Start the AutoCAD configuration with the following call:  
ACAD -r
9. In the AutoCAD configuration, select the number for the display driver configuration (e.g. 3 .  
Display Driver).
10. In the list of drivers shown select the 3D (World) option according to your board type:  
SPEA S3 **3D** ADI 4.2  
Display/Rendering - by SPEA AG
11. Note that if you are installing 3D-World over a previous version of BigFocus, other (2D) drivers will still be listed (e.g. SPEA S3 ADI 4.2, Display/Rendering - by SPEA AG). Make sure that you don't select one of these!
12. Save the new configuration.
13. If you are installing BigFocus/3D-World for the first time, the driver will show you a message *similar* to the following:  
SPEA S3 3D ADI 4.2 Display/Rendering - By SPEA AG version @(')R12.40 is not configured:  
[0] 1280x1024x8  
[1] 1152x870x8  
...  
[8] 640x480x8  
Please select driver video mode:\_
14. Select the mode you want to use and press the Enter key. AutoCAD will now be started using the specified mode. Note that to change the mode you must reconfigure within the AutoCAD session using the #SPEACONFIG command (see BigFocus manual and online help).

Further information can be found in the BigFocus manual (see also Mailbox: Software Area "SPEA Manuals") or the BigFocus online help.

**Note:**

If you have already worked with BigFocus in the past and are using this installation as an update, the position of the SPEA icons may be changed since you last saved your work.

## AutoCAD for Windows/3D-Win

1. Put the disk 'BigFocus for AutoCAD DOS (1/3)' **from your 3D-World package** drive A: and enter:  
A:  
INSTALL
2. Select E for English at the next prompt.
3. Select the Windows driver version:  
SPEA BigFocus driver and/or 3D-Win for AutoCAD for Windows
4. Follow the installation answering questions about the location and language of the application on the way. You will also be asked whether you wish to install 3D-Win (it is possible to install the ACADWIN driver without 3D-Win).
5. When the installation is finished, RCSETUP.BAT is copied into your GDC directory in order to set the environment variables needed for the BigFocus tools. **Important:** you **must** start this file before every AutoCAD session! To make sure that this happens, your AUTOEXEC.BAT file is modified (to call the batch file).

6. Read the information in the BIGFOCUS README file (automatically shown at the end of the installation).
7. Reboot your system to set the environment variables etc. for BigFocus.
8. Start ACADWIN and select the menu items 'File' and 'Configure'. Then select the following option for the display driver:
 

```
SPEA ADI 4.2 Win
Display/Rendering - by SPEA AG
```
9. This ends the installation. When the ACADWIN session is opened you can enter the command #IPIN\_SPEA to open the main menu. The online help is accessed via the question mark in the bottom right corner of this menu.

#### **Additional Steps for 3D-Win Users**

1. Start Windows or change to the Program Manager. Pick an icon group (e.g. the AUTOCAD group).
2. Select the Program Manager menu items 'File' and 'New'.
3. Enter the name SPEA 3D-Win as the program description and then use the file selection box to change to your SPEA\GDC directory and select the following file located there:
 

```
W3DVIEW.EXE
```
4. Enter SPEA\GDC as the working directory.
5. Close all the dialogue boxes with OK.
6. The 3D-Viewer can then be started by doubleclicking the 3D icon in the group.

### **MicroStation 5.0 (SPEA BigMicro Driver)**

---

Having installed the hardware lock as previously described, you can continue with the following section.

1. Put the disk 'BigFocus for AutoCAD DOS (1/3)' from your 3D-World package drive A: and enter:
 

```
A:
INSTALL
```
2. Select E for English at the next prompt.
3. Select the BigMicro 3D-Viewer driver:
 

```
SPEA 3D-Viewer for MicroStation 5
```
4. Follow the installation answering questions about the location of the application on the way.
5. Read the BIGMICRO (README) file shown at the end of the installation.
6. Reboot your system after completing the installation. Before configuring MicroStation (see next section), make sure that you start the MSPEAPM batch file (to alter the settings of the BigMicro driver, read the section 'Environment Variable MSPEAPM below) to set the variables needed by the driver, or read the contents of the batch file itself.

#### **Driver Selection via USCONFIG**

1. Change to your \USTATION directory.
2. Run the USCONFIG program to select the new device driver.
3. In the 'Generate for:' dialogue box
 

```
select DOS or Windows Connection as needed (see MicroStation documentation) and then
'Display Adapters'
```
4. A list of drivers available for the Right Screen Graphics Adapter is then shown. It should now include the following option 'SPEA S3 driver with 3D Functions'.
 

Note that the option 'SPEA S3 Prot. Mode' may still be listed if you previously used a SPEA driver and are updating. To use the 3D-Viewer you must select the 'SPEA S3 driver with 3D Functions' option!

5. Assuming you are not using a second graphics adapter, select the option 'No second adapter' in the dialogue box for the Left Screen Graphics Adapter.
6. You will next be prompted 'Do you want to disable the virtual graphics page? [Y/N]'. If you disable the virtual graphics page you can use 256 or 16.7 million colors. If you enable it then only 16 colors can be used.
7. Select 'Exit and Save' in the menu list that appears.
8. The SPEA driver is automatically loaded when you start MicroStation.

If MicroStation refuses to load and you see the following error message:

```
\GDCINI.DAT:
There is no MicroStation graphics display handler loaded
C:\USTATION>
```

then check that C:\SPEA\GDC is in the PATH= line of your AUTOEXEC.BAT and that you loaded the MSPEAPM.BAT file.

## Environment Variable MSPEAPM

In order to configure the MicroStation device driver with the environment variable MSPEAPM and the corresponding parameters you must be aware of the possible video modes of your graphics board (see also MSPEAPM.BAT in your SPEA directory).

To see a list of the video modes for your primary board change to your SPEA\GDC directory and enter:

```
VMODE
```

Once you know the modes available you can use them in the following environment variable call:  
SET MSPEAPM=-Ccardr -Vx

-Ccardr defines the card number for the graphics board for the right screen.

Values for cardr:

10= Primary board

-Vx Video mode primary screen (right)

### Example:

```
SET MSPEAPM=-C10 -V0
```

### Note:

The BigMicro driver exclusively supports 8 or 32 bit color modes.

### If your monitor flickers ...

If your monitor flickers, you may be using your monitor with a refresh rate that is too low. Check your monitor's maximum parameters and then select another refresh rate from the DOS level using the utility SPTUNE.EXE. Make sure that your monitor is capable of running the selected refresh rate first.

## Animation Previewer for Autodesk's 3D-Studio

---

Having installed the hardware lock as previously described, you can continue with the following section.

### Important Note:

You must have installed the ADI 4.2 driver for Autoshade & 3D-Studio from your graphics board installation disks prior to the following steps. If you completed the installation correctly then a file named V7ACAD.BAT will have been created in your SPEA\GDC directory. This file is mentioned in the following sections.

1. Put the disk 'BigFocus for AutoCAD DOS (1/3)' from your 3D-World package drive A: and enter:  
A:  
INSTALL
2. Select E for English at the next prompt.

3. Select the following option:

```
SPEA Animation Previewer for 3D Studio 2/3
```

4. Follow the instructions on the screen to the end of the installation.

The next steps necessary for configuration depend on the way that you wish to use the Animation Previewer.

## Launching the Animation Previewer from the DOS prompt

You must have completed the steps described in the previous sections before attempting to start the Animation Previewer as described below.

To start the Animation Previewer, change to the SPEA directory and enter the following command:

```
ANIPRS3
```

The Animation Previewer will now be started automatically as an independent application from 3D Studio.

### Important Notes:

If you have not installed the 3D-World dongle on your PC, you will see a system message after starting the Animation Previewer which tells you that it is necessary to use the dongle. In order to continue, install the dongle on your PC.

If 3D-Studio will not load ('Board not found' message), make sure that the VESA mode driver is loaded via your AUTOEXEC.BAT (this file is named V7MEPVBE.EXE). Check your board manual for more information about this file.

Before you can run an animation preview you **must** edit and save a frame sequence in the 3DS Keyframer (load a file such as BIRDWALK.3DS into the Keyframer and use the menu items *Preview*, *Make* and *Save* to create an animation).

## Launching the Animation Previewer from within 3D Studio

It is possible to launch the Animation Previewer from within 3D Studio depending on the free memory available in your PC.

To use the Animation Previewer within 3D Studio, you have to modify the configuration of 3D Studio as follows:

### Modifying the file 3DS.SET (3D Studio 2.0, 3.0 and 4.0):

1. Load the file 3DS.SET with an ASCII text editor.
2. Include the following entry anywhere in the file:

```
AUTOCREATE-VUEFILE = YES
```

This line has the effect of automatically creating a VUE file for each 3DS file you save (VUE files are needed by the Previewer). It is possible to omit this line, but then you would have to manually create a VUE file each time (see 3D Studio documentation).
3. Search the string for the point where external programs are included (`;External programs`, see 3D Studio documentation).
4. Remove the leading semicolon at the beginning of the line and add the following entry at the next free USER-PROG number (5 in the following example)

```
USER-PROG5= ...  
... "C:\SPEA\GDC\ANIPRS3.EXE", "Anipreview"
```

### Additional Steps:

#### 3D Studio 2.0:

1. Modify the following entries in the file 3DS.SET to look like the following (remove the leading semicolons, or change the existing entry)

```
MAIN-DISPLAY=RCPADI
MATERIAL-DISPLAY=RCPADI
RENDER-DISPLAY=RCPADI
```

2. Start the batch file V7ACAD.BAT from your SPEA\GDC directory. This sets the environment variables DSPADI, RCPADI, RDPADI needed by 3D Studio (if they are not set then 3D Studio will complain that the environment variables can not be found).

3D Studio will then start (the first time used it will automatically run the display driver configuration routine). You will be asked to choose a video mode for the Display Driver, Materials Editor and Render Driver in turn. Follow the instructions on the screen. At the end of the configuration 3D Studio will be run using the new video modes.

### 3D Studio 3.0 / 4.0:

1. Configure the application using the 3DS program VIBCFG as follows. Change to the 3D Studio directory and start the 3DS configuration program VIBCFG.

During the configuration set the following entries to 'VIBRANT':

```
MAIN-DISPLAY
MATERIAL-DISPLAY
RENDER-DISPLAY
```

2. Select the adequate graphics board at each 'Graphics Board' entry:

**Example:**

```
'Video 7 / Spea Mercury S3'
```

3. Exit the VIBCFG configuration program.

**Note:**

To run 3D Studio will need to residently load the TSR file with the VESA modes into memory with the following call (also possible via a call in your AUTOEXEC.BAT):

```
V7MEPVBE.EXE
```

(this file is located in your SPEA directory C:\SPEA\GDC).

4. Start the Animation Previewer in the menu line via the option 'Program', 'SPEApreview (F..) '.

**Note:**

If you have not installed the 3D-World dongle on your PC, you will see a system message after the start of the Animation Previewer which tells you that it is necessary to connect the dongle. Install the dongle on your LPT1 port.

## Part 3

# Using 3D-World

### 3D-Viewer for AutoCAD DOS

---

#### Access

Open an AutoCAD drawing and then enter the command #VLOAD.

#### Use

The 3D-Viewer for AutoCAD is virtually self-explanatory. A detailed description of the 3D-Viewer can be found in your BigFocus manual and the online help (access is via the question mark button located in the SPEA main menu), topics: "3D-Viewer ...".

### 3D-Win (3D-Viewer for Windows)

---

#### Access

Open the Program Manager and doubleclick on the 3D icon:



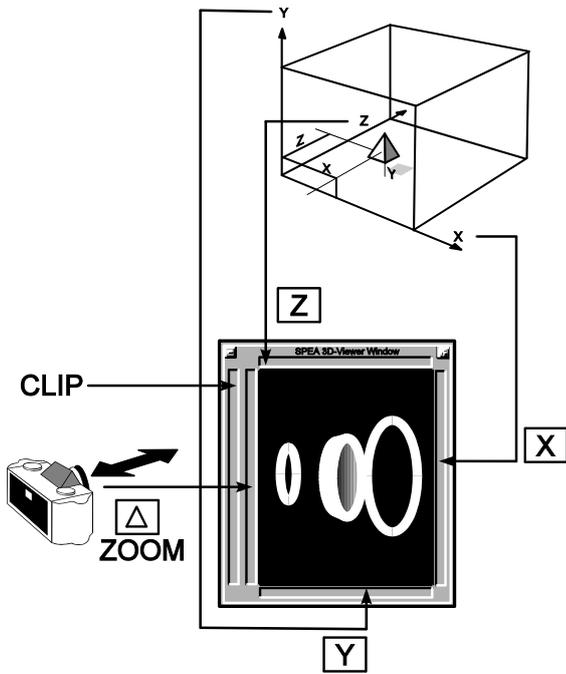
#### Use

The 3D-Viewer for Windows is virtually self-explanatory. If you have problems understanding some of the dialogue boxes or effects created, consult the online help via the menu item (top left) 'Help' or the help buttons located in the various menus.

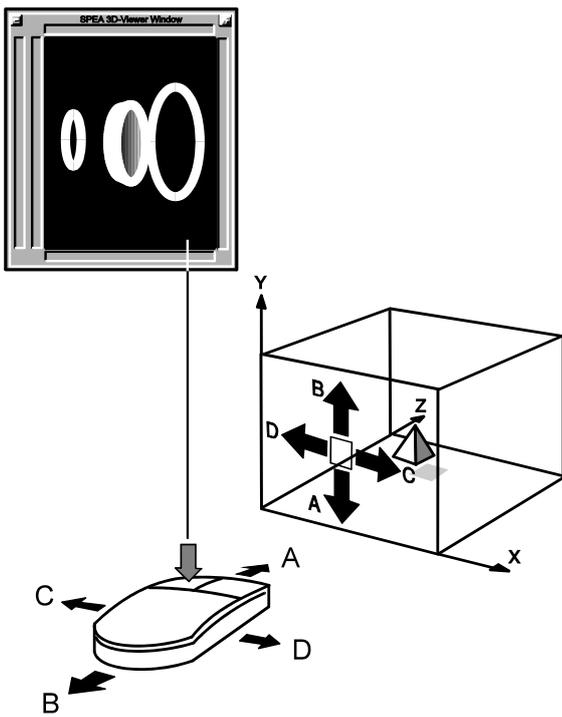
### 3D-Viewer for MicroStation

---

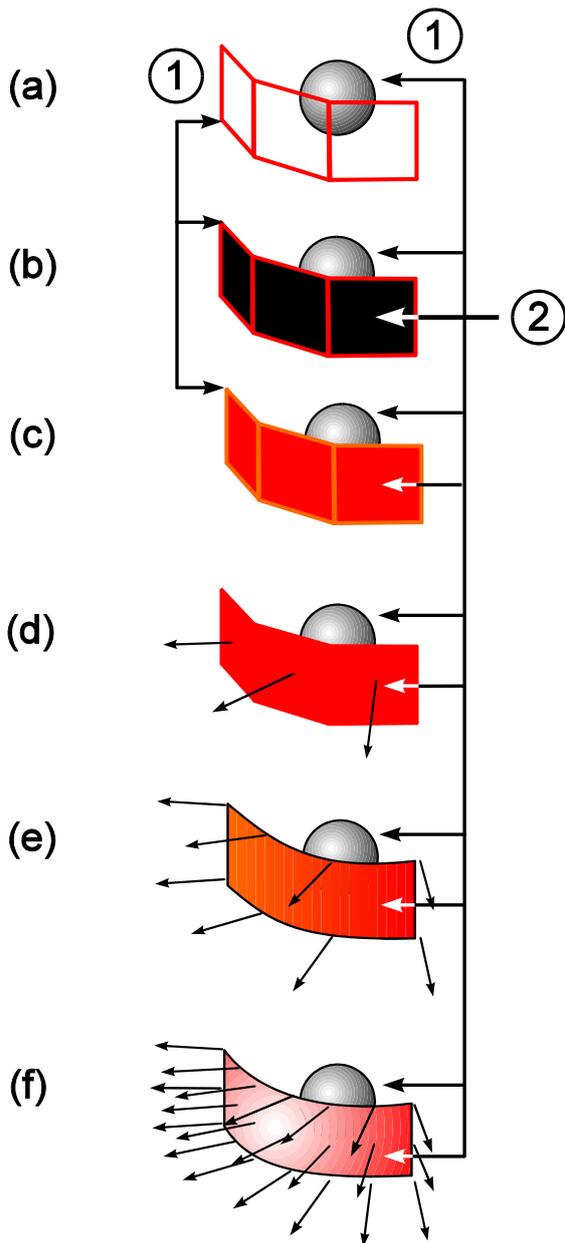
The 3D-Viewer is automatically loaded with the BigMicro driver. The 3D-Viewer is virtually self-explanatory, although the following diagrams may help you concerning the use of the sliders and mouse.



*Using the 3D-Viewer sliders*



*Using the mouse with the 3D-Viewer*



*Rendering modes available*

**Key:**

- (a) Wireframe
- (b) Hidden line
- (c) Filled hidden line
- (d) Constant shading
- (e) Smooth shading
- (f) Phong shading

## Animation Previewer for 3D-Studio

---

### The SPEA Animation Previewer Configuration Menu

This menu is automatically started when the Animation Previewer is loaded. The following text describes the various options available.

#### 1. Video Configuration

Starts a self-explanatory menu for the preview mode. This menu is almost identical to the Rendering Configuration Menu of 3D Studio. You can set the following entries:

- (a) video mode (resolution and color depth),
- (b) image width and height

(c) the starting coordinates of the display (can also be centered)

## 2. 3DS

To the right of this button is a space where the name of a 3D Studio image can be entered. If this file is not in the default path, click on the 'Load' button to the right to obtain a file selection box. There a drive and path can be entered for the search process.

## 3. VUE

The space to the right of this button is used to enter the name of the VUE file. This button is handled in the same way as the 3DS button described above. If this button is not active then only the first frame of the 3DS file will be displayed in the Animation Previewer. This feature can be used as a 'quickshade' function.

## 4. FLC (only for 256 Color Modes)

**Note:** this button will only appear if you have previously set an 8 bit video mode (for 256 colors) in the menu item 'Video Configuration' above.

Enter the name of a FLIC file which either exists, or which you wish to create to the right of this button, else load the file selection box using the 'Load' button to the right. If the button is active, then the Animation Previewer will only run once and will create a FLIC file in the directory you define. If the button is not active or not present (e.g. True Color Mode) then the Animation Previewer will run an endless loop. In this case, the left mouse key can be used to pause and run the preview, whilst the ESC key can be used to exit the Animation Previewer.

## 5. Cursor Down Button

This button, to the right of the VUE and FLC load buttons help to transfer the entries of the boxes above (file names) to the box in the respective line (saves typing).

## 6. Double arrow '>>' (beside the FLC Button)

With this double arrow right beside the FLC button you can play a FLIC file without any further settings. The speed corresponds to the one set in the FLIC file. To change modes, and modify speed etc. click on the FLIC Player button near the bottom of this dialog box.

## 7. 3DS Path / VUE Path / FLC Path

If you enter a path here, then this will be used for future file manipulations (saving or creating).

## 8. Shading Limits

The buttons in this area represent a particular type of shading method, as described below:

### Wire

Wireframe display - all surfaces are unshaded and transparent.

### Wire visible

As above, except that the front-facing surfaces are opaque. This effectively removes (or hides) the back-facing surfaces.

### Flat

The surfaces are colored using a simple routine.

### Gouraud

A shading method more complex than Flat is used. Using the Gouraud method, the light on curved surfaces is calculated and shown in a better way than with Flat shading.

### Phong

The most time-consuming method, but with the best results. Curved surfaces are examined carefully and shaded most realistically.

### Antialias

This reduces the staircases effect visible on straight lines, which stretch across the screen diagonally, using an optical trick. This option can only be used with wireframe display and 256 colors.

9. Frames:
  - All  
Loads all the individual frames into the Animation Previewer
  
  - Single  
Loads a single frame into the Animation Previewer
  
  - Range ... to ...  
Loads a defined selection of frames into the Animation Previewer (e.g. frames 5 to 12).
  
  - Every nth frame  
Shows only the nth frame of the selected range of frames (e.g. when 2 is entered, every second frame will be shown).
  
10. FLIC Player (only for 256 Color Modes)
  - This is only available when processing an existing FLIC file!
  - Starts the FLIC Player menu. This menu is described in detail in the next section.
  
11. Preview
  - Starts a preview (don't interrupt the process!). The separate, rendered images are put together with information for the animation film. The pictures are built up slowly (this is not the final animation) and the AniPreview Configuration menu reappears.
  
12. Preview + Exit
  - As button 11 above, except that you are returned to DOS (or to 3D Studio).
  
13. Exit (ALT + X)
  - Ends the session and saves your work before returning to 3D Studio or to DOS.
  
14. Cancel
  - Leaves the program without saving your work.
  
15. Info
  - Displays information about the available memory and version number of the Animation Previewer.

## The SPEA Animation Previewer FLIC File Player Menu

Once you have selected a FLIC file for previewing you can use the 'FLIC Player' button in the Aniprev Configuration menu to open the FLIC Player. The following sections cover the options available to you in this menu.

1. Opts button
  - The submenu 'Options' appears after you have clicked on the Opts button in the SPEAplay menu. In this menu you can activate a countdown feature ( three phases, visible and invisible) before you play a FLIC file. If you activate the option 'Play from disk' the FLIC file will not be loaded into memory, it will be played directly from the hard disk.
  
2. Mode button
  - Via this button you select the resolution the FLIC file should be played with. The Option 'Best fit' automatically selects the most suitable resolution for the FLIC file.
  
3. Load button
  - The submenu 'Load' appears after you click on the load button in the SPEAplay menu. You have the possibility to select various file types from different disk drives.
  
4. Quit button
  - Exits the FLIC player and returns to the main menu of the Animation Previewer.
  
5. Cursor down button
  - With this button you can blank the SPEAplay menu. Click on the mousebutton anywhere on the screen and the menu will be displayed again.

## 6. Sync Button

Sets the FLIC player to run in synchronisation mode; in this mode a synchronisation of frame refresh frequency and copying the new frame is executed by the double buffering method. This avoids displaying a half of the old frame and a half of the new one simultaneously: the information for the next frame is only transferred to the visible half of the boards video RAM when the next frame has been built up completely (in the invisible half of VRAM). The animation is more stable. If this function is active, the highest possible playing speeds will be reduced, readable in the sliding area 'Frames/s'.

Because the synchronisation mode is based on the use of the two video RAM halves this mode may only be selected in resolutions up to 1024 x 768. Otherwise an error message will be displayed.

## 7. Frames / s

Playing speed in Frames per second.

Check

Checks, if the number of frames you defined at the option 'Frames/s' can be executed. In case the number is too high, an error message appears after you started the FLIC file.

CalcMax

Calculates the maximal playing speed for the FLIC file. The speed depends on the structure and size of the FLIC file. When you click on the CalcMax button, the two buttons Check and CalcMax disappear from the menu. To let them reappear on the menu again, click on the Sync button in the same menu.

## 8. Frame

Shows a single frame of the current FLIC file, the corresponding number is shown in the sliding bar. Herewith you can also find out the total number of frames of the FLIC file.

## 9. |<

Fast rewind to the first frame of the FLIC file.

## 10.< (and >)

Frame stepping function (backwards and forwards)

## 11.>>

Play key, runs a FLIC file starting at the current position.

## 12.>|

Fast forward winding to the last frame of the FLIC file.

## Working with SCRIPT Files

Self-made SCRIPT files as well as SCRIPT files created with other programs (e.g. Autodesk's Animator Pro) may be played with SPEAplay if they fulfil certain requirements.

Considerable playback speeds can be reached using SPEAplay. If SCRIPT files created with other programs contain commands and options which are not known to SPEAplay these commands will be disregarded and skipped. These so-called 'keywords' are usually such commands which refer to several FLIC file calls (e.g. LOOP, ENDLOOP) or subroutine structures (e.g. CALL, GOSUB). In this case the SCRIPT file can be played anyway without any error report.

### Note:

Keywords have to be separated at least by one blank, e.g. LOOP (forever).

SCRIPT files can be created also with a common text editors. An ASCII file has to be created and stored with the extension \*.SCR.

### Creating a SCRIPT File by Using a Text Editor

This chapter describes how to produce a SCRIPT file. The following sections contain basics as well as special information about SCRIPT file creation.

As the playback of a SCRIPT file may be impossible if there is a syntax mistake it is necessary to note all the following notes and syntax rules exactly.

### Opening a new SCRIPT File

You need a text editor to create a SCRIPT file. This editor has to produce files in ASCII format. In MS DOS systems you can use the MS DOS editor; if you work with MS WINDOWS you can use the WINDOWS editor NOTEPAD as well.

Open a new file and save it as a SCRIPT file with the extension \*.SCR.

**Example:** SCRIPT01.SCR

Your SCRIPT file SCRIPT01.SCR is still an empty script. In this file now the FLIC file calls or the names of the picture files to be displayed have to be entried as described in the following sections. Using SPEAplay afterwards the so-created SCRIPT file can be loaded and played.

### Basic SCRIPT File Structure

A simple SCRIPT file contains a pure list of all the FLIC files (\*.FLI, \*.FLC and \*.CEL) or picture files (\*.PCX, \*.GIF, and \*.TGA) have to be played one after the other. With the FLIC file / image file call the FLIC file / image file path must be set exactly.

Calling the FLIC file or images for several times within one SCRIPT file is possible too.

#### Note:

A maximum of 250 entries (= FLIC file calls, image file calls) can be listed in a SCRIPT file, even if some FLIC files or images are called several times. 128 of these 250 FLIC file calls can refer to various FLIC files.

In this case, the values FILES and BUFFERS in your configuration file CONFIG.SYS have to be modified (increased).

Due to the SPEAplay memory management the file size has no limitation.

Setting options behind the corresponding FLIC file or image file name the SCRIPT file playback can be configured.

**Example:** Simple SCRIPT file (SCRIPT01.SCR), without any options:

```
d:\pictures\openmenu.pcx
c:\3d_view\test1.flc
c:\ani_pro\test2.flc
```

### Explanation of SCRIPT01.SCR

The named image (OPENMENU.PCX) and FLIC files are played immediatly one after the other. The image is displayed for a (very) short time. Between the files there is a so named "clear cut". In this SCRIPT file there are no slow transitions between the files.

The file is played as an infinite loop.

The FLIC files are played in the speed internally given in each FLIC file header.

### Basic Syntax Rules for SCRIPT Files

Path:

It is necessary for each entry to set the whole path of the FLIC file or image file to be displayed.

Options:

Options can, but must not be set (exception: image files). Options for defining the playback conditions have to be listed behind the FLIC file name, separated with one space at least, in any order. Any combination is possible. 255 characters per line are permitted. An option entry has to contain the option flag with the corresponding letter (-l, -s, -p) and a parameter as well. To define transitions, several parameters are possibly, too.

If there are no options given with the FLIC file / image file call, default values will be taken.

The whole SCRIPT file runs as an infinite loop on principle.

Comments:

To make the general idea of the SCRIPT file procedure clear later, it is convenient to comment each SCRIPT file entry.

Comments have to be inserted at the end of the line concerned and must be separated with two obliques (//). If a comment needs more than one line, each line has to be opened with the comment symbol (//). The next line whose first characters are not '/' will be read as a command line again.

**Example:** SCRIPT File (SCRIPT02.SCR) to explain the syntax rules

```
c:\3d_view\test1.flc -l 3 -t fadeout 1 // Information behind these
obliques
// will be read as comments and will
// be ignored by the program also if
// they contain e.g. FLIC file
//calls.
c:\ani_pro\test2.flc-s 2,5 -l 5 -t fadein
```

### **Explanation of SCRIPT02.SCR**

The order of the options is irrelevant.

#### **Example:**

c:\3d\_view\test1.flc -l 3 -s 1 has the same effects like : c:\3d\_view\test1.flc -s 1 -l 3

The used options are described in the following section.

Comments have to begin with //, no matter whether the comment is inserted at the end of the line or at the beginning. Make sure that each new comment line is started with //.

### **Optional Entries in SCRIPT Files**

To create impressive animations in a SCRIPT file several options can be added to the FLIC file / image file calls. The options refer to the corresponding FLIC file / image only. The following effects can be achieved:

#### **For single FLIC files:**

- Loop function (optional adjustable number of FLIC file playback or image display repetitions)
- Blending in the FLIC file / image from a color desired, blending-in time adjustable
- Blending out from a FLIC file / image to a color desired, blending-out time adjustable
- Setting breaks between the FLIC files / images
- FLIC file playback speed

These options must be inserted behind the FLIC file / image file name with the corresponding parameter (number of loops,..) to determine file properties (loop function, playback speed).

#### **Note:**

Please note the syntax rules for optional entries, described in the previous section.

If there are no options, default values will be used.

**General default values:**

- playback speed as given in the FLIC file header
- each FLIC file is played once
- infinite loop of the SCRIPT file: endless repetitions of the whole SCRIPT file until breaking the playback by pressing any key
- no break after the last frame
- clear cut between the FLIC files
- very short duration of image display (so you better set the display time via -px)

**Available Options:**

These can be entered in your SCRIPT files:

-l *n*      loop-Function (*n* loops)

The FLIC file will be played for *n* times before the next SCRIPT file entry will be processed. The value *n* must be an integer number.

-s *m*      speed function (*m* jiffies)

The FLIC File will be played with a speed of *m* jiffies. 1 jiffy = 1/72 s  
*m* is the number of 1/72 s per frame. The unit 'jiffy' is used by Autodesk Pro. To make the compatibility possible the entry in the SCRIPT file to define the playback speed must be a jiffy value. SPEAplay itself uses 'Number of frames per second' ('Frames/s') to define the playback speed. This value may be altered later using the slider bar.

-p *x*      break function

If the FLIC file has been played there will be a break of *x* seconds. Images are displayed for *x* seconds. The value *x* must not be an integer value.

-t *options*

Describes the transitions between two FLIC files. Fade-in, fade-out (to a definable color) and clear cuts are possible. In *options* the kind of transition and its duration can be set (see following section).

**Defining transitions between FLIC files / images**

There are several possibilities to define transitions between two FLIC files or images. As film transitions are an important factor for the impression of the computer animation, this function shall be described in detail.

For further information and examples please refer to the Autodesk's Animator Pro user documentation.

As written before the default transition is a clear cut. The following features are adjustable: fading in, fading out, screen color and fading duration.

**Transitions default values:**

If there is no color set after the option fading in / out black will be used as screen color.

If a transition duration is not set, the FLIC files will be faded in / out in 0.8 sec..

If the option fade-in / -out is not set, there will be a cut between the two FLIC files (see above).

**Color data:**

Behind fadein or fadeout the transition speed (in seconds) and the desired screen color color has to be set. The color has to be described with its three RGB channels (red, green, blue). So you have to insert color (255, 255, 255) due to set white, COLOR (0, 0, 0) for black, COLOR (255, 0, 0) for red and so on.

To describe the color white the name can be used as well: White.

**Possible parameters to fade-in / -out a FLIC file:**

*filename* [options] -t fadein [sec] [color(*r,g,b*)] [cut]      or  
*filename* [options] -t fadeout [sec] [color(*r,g,b*)] [cut]

*filename*

name and path of the concerning FLIC file

*options*

other optional parameters, not concerning transitions

**-t**  
sign for a transition, has to be inserted before the following command parts

**fadein**  
fade in command

**fadeout**  
fade out command

**sec**  
Duration of fade-in / -out in seconds, decimal numbers too

**color (r, g, b)**  
defines the transition color

**cut**  
transition to the next FLIC file: cut

**Example:** Possible calls to fade-in /-out FLIC-Files (SCRIPT03.SCR):

```
c:\3d_view\test1.flc -t fadein 1.0 color (0,255,0)
c:\3d_view\test2.flc -t fadein 0.5 white fadeout 3 color (0,0,255)
c:\pictures\image1.gif -p 2 -t fadeout 1.5 c:\pictures\image2.gif -p 2 -t
fadein 1.0 cut
c:\3d_view\test5.flc -t fadein
c:\3d_view\test6.flc
```

### Explanation of SCRIPT03.SCR

```
c:\3d_view\test1.flc -t fadein 1.0 color (0,255,0)
```

Fade-in duration 1 second, green is the starting color

```
c:\3d_view\test2.flc -t fadein 0.5 white fadeout 3 color (0,0,255)
```

Fade-in duration 0,5 seconds, white is the starting color, fade-out duration 3 seconds to blue

```
c:\pictures\image1.gif -p 2 -t fadeout 1.5 c:\pictures\image2.gif -p 2 -t
```

As there are no fade-in commands: fade-in from blue, duration 0,8 s (see line 2) to the image IMAGE1.GIF, which is 2 seconds displayed, and fade-out duration 1,5 seconds to black (because there is no color information)

```
fadein 1.0 cut
```

Fade-in duration 1 second, black is the starting color, clear cut. IMAGE2.GIF is displayed for 2 seconds.

```
c:\3d_view\test5.flc -t fadein
```

Default values will be used to define time and color: Fade-in duration 0,8 seconds, black is the starting color, clear cut after this FLIC file (no fade-out)

```
c:\3d_view\test6.flc
```

As there is no further transition information given with the FLIC file call, default values will be used: clear cut as transition, color: black

### Running SCRIPT Files

To run a SCRIPT file using SPEAplay please proceed as follows:

#### Loading the SCRIPT File desired

Clicking the button in the SPEAplay menu the 'LOAD' menu will be displayed beside this menu. Confirm by clicking on the 'OK' button if you have selected the file (extension \*.SCR) desired. The 'LOAD' menu will be blanked out. The SCRIPT file will be loaded. A countdown display 'LOADING' shows the loading state. If the 'LOADING' countdown has finished (=0'), the first frame of the first FLIC file will be displayed on the screen.

#### Running the SCRIPT File

Click the play button in the SPEAplay menu to start the SCRIPT file. The SCRIPT file will now be played as an infinite loop, starting with the first frame and with the default speed given in the first FLIC file header.

Clicking the mouse or pressing any key the playback can be interrupted. Starting the file again the playback will start at this file position if you have not set a new starting point by using the fast winding button.

#### Changing the Playback Conditions:

Playback speed:

Using the button 'Frames/s' the playback speed of each FLIC file can be set.

Countdown function:

With the countdown function the time up to the SCRIPT file start can be set (in seconds). When recording a SCRIPT file with a video recorder, this function is especially helpful.

#### The SCRIPT File Buttons in the SPEAplay menu

Loading a SCRIPT file two buttons will be added to the SPEAplay menu. When loading a FLIC file these buttons will not be displayed.

'#' FLIC file number

Displays which FLIC file (FLIC file entry, line) of the SCRIPT file is currently played or displayed. The displayed number corresponds to the position of the displayed FLIC file within the loaded SCRIPT file. Using the buttons '+' and

'-' you can page through the SCRIPT file and the first frame of each FLIC file will be displayed.

'x' Loop number

Displays the number of the loop of the current FLIC file in which the playing program is located. Interrupting the playback procedure by pressing a key the current loop number of the momentary FLIC file is displayed in this button.

As the internal program run is always proceeded further than the FLIC file display the loop number shown may be calculated again when you stop the program. For this reason the value may deviate from the current screen contents.

Altering the shown value (button '+' and '-') the repeat number for playing a FLIC file of a SCRIPT file may be changed regardless of the loop entry in the SCRIPT file.

All other buttons are described in the section 'SPEA Animation Previewer FLIC Player Menu'.

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