NEXTSTEP for Intel Processors

Title: The ELSA *WINNER 2000PRO/X*

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Usage Commentary

The ELSA *WINNER 2000PRO/X* is configured with VRAM of 2, 4 or 8 megabyte size. The 8-megabyte version, the *WINNER 2000PRO/X-PCI-8,* displays up to1600 x 1200 32 bit or 16 bit color graphics or 8 bit grayscale/color within a NEXTSTEP® system, while all resolutions up to 1408x1024 TrueColor graphics can be displayed in 100 Hz. All cards are available with a PCI bus interface. There is no restriction on system main memory size when operating with an ELSA *WINNER 2000PRO* /X card. Please note that **8-bit Color** resolutions are only supported wih NEXTSTEP 3.3.

NEXTSTEP® *for Intel® processors* Release 3.2 or a later version is needed to use the card.
The *WINNER 2000PRO/X* is supported by a multiple screen driver for use with NEXTSTEP Release 3.3.

WINNER 2000PRO/X-PCI-8 Display Adapter Display Modes 250MHz RAMDAC, PCI bus, 8 MB VRAM

32-bit Color

```
1600x1280,  78, 75, 64, 62 Hz
1600x1200,  83, 67 Hz
1536x1152,  90, 82 Hz
1408x1024, 100, 88, 80, 77, 70 Hz
1280x1024, 122, 100, 80, 75 Hz
1152x 864, 100, 83, 76, 64, 60 Hz
1120x 832, 100, 94, 88, 72 Hz
1024x 768, 100, 81, 75 Hz
 800x 600, 100, 75 Hz
 640x 480,  60 Hz
```

16-bit Color

```
1600x1280,  88, 78, 71, 64, 61 Hz
1600x1200,  95, 83, 77, 67 Hz
1536x1152, 103, 90, 82, 72, 70 Hz
1408x1024, 100, 88, 80, 77, 70 Hz
1280x1024, 139, 100, 80, 75 Hz
1152x 864, 100, 91, 83, 76, 60 Hz
1120x 832, 100, 94, 88, 72 Hz
1024x 768, 100, 75, 70, 52 Hz
 800x 600, 100, 75, 70, 60 Hz
```

8-bit Grayscale or 8-bit Color (NEXTSTEP Release 3.3 only)

```
1600x1281,  78, 71, 64, 61 Hz
1600x1200,  83, 77, 67 Hz
1536x1152,  90, 82, 72, 70 Hz
1408x1024, 100, 88, 80, 77, 70 Hz
1280x1024, 100, 80, 75 Hz
1152x 864, 100, 91, 83, 76, 60 Hz
1120x 832, 100, 94, 88, 72 Hz
1024x 768, 100, 75, 70, 60 Hz
 800x 600, 100, 75, 70, 60 Hz
 640x 480,  60 Hz
```

WINNER 2000PRO/X-PCI-4 Display Adapter Display Modes 220MHz RAMDAC, PCI bus, 4 MB VRAM

32-bit Color

```
1152x 864,  83, 76, 64, 60 Hz
1120x 832,  88, 72 Hz
1024x 768, 100, 81, 75 Hz
 800x 600, 100, 75 Hz
```

```
 640x 480,  60 Hz
```

16-bit Color (RGB:444/16 and RGB:555/16)

```
1600x1280,  78, 71, 64, 61 Hz
1600x1200,  83, 77, 67 Hz
1536x1152,  90, 82, 72, 70 Hz
1408x1024, 100, 88, 80, 77, 70 Hz
1280x1024, 100, 80, 75 Hz
1152x 864, 100, 91, 83, 76, 60 Hz
1120x 832, 100, 94, 88, 72 Hz
1024x 768, 100, 75, 70 Hz
 800x 600, 100, 75, 70, 60 Hz
```

8-bit Grayscale or 8-bit Color (NEXTSTEP Release 3.3 only)

```
1600x1280,  78, 71, 64, 61 Hz
1600x1200,  83, 77, 67 Hz
1536x1152,  90, 82, 72, 70 Hz
1408x1024, 100, 88, 80, 77, 70 Hz
1280x1024, 100, 80, 75 Hz
1152x 864, 100, 91, 83, 76, 60 Hz
1120x 832, 100, 94, 88, 72 Hz
1024x 768, 100, 75, 70 Hz
 800x 600, 100, 75, 70, 60 Hz
 640x 480,  60 Hz
```

WINNER 2000PRO/X-PCI-2 Display Adapter Display Modes
220MHz RAMDAC, PCI bus, 2 MB VRAM

32-bit Color

```
 800x 600, 100, 75 Hz
 640x 480,  60 Hz
```

16-bit Color (RGB:444/16 and RGB:555/16)

```
1152x 864, 100, 91, 83, 76, 60 Hz
1120x 832, 100, 94, 88, 72 Hz
1024x 768, 100, 75, 70 Hz
 800x 600, 100, 75, 70, 60 Hz
```

8-bit Grayscale or 8-bit Color (NEXTSTEP Release 3.3 only)

```
1600x1280,  78, 71, 64, 61 Hz
1600x1200,  83, 77, 67 Hz
1536x1152,  90, 82, 72, 70 Hz
1408x1024, 100, 88, 80, 77, 70 Hz
1280x1024, 100, 80, 75 Hz
1152x 864, 100, 91, 83, 76, 60 Hz
1120x 832, 100, 94, 88, 72 Hz
1024x 768, 100, 75, 70 Hz
 800x 600, 100, 75, 70, 60 Hz
 640x 480,  60 Hz
```

Although the driver comes with a rich palette of video modes, optimized in ergonomics for ELSA card and ELSA monitor combinations, new video modes can be created within hardware constraints using MS DOS based ELSA tools. Thus it is possible to adapt the card to the limits of a particular monitor model or e.g. to have interlaced display modes, by creating so-called timing data sets or "timings". Once such a custom timing is created it may be copied to multiple systems by recording the 10 numbers used to describe the timing.

Setup and Installation

The required driver is part of the product. Detailed installation instructions can be found on disc and CD accompanying the graphics card in the file *next/readme.txt*. The card is supported by two drivers, a standard driver that supports the NEXTSTEP software version 3.2 and 3.3 and a multiple screen driver that supports version 3.3. See subdirectory *standard* resp. *multiscr*. The readme files here also contain up to date technical background information.

The drivers, which support the ELSA *WINNER 1000/2000* graphics cards series, are available via anonymous FTP

(ftp.next.com) and via email (nextanswers@next.com). Additionally, they can be downloaded from the BBS *ELSA ONLINE*, Aachen, Germany (0049+241-9177-981) using a communication program (2400-28800 bps, 8n1). In the US, call (408)-565-9630 for the BBS at ELSA Inc. It is not necessary to run the MS-DOS version of the ELSA configuration software when working with ELSA *WINNER* cards in the NEXTSTEP system.

To install a driver package obtained via ftp, double-click on the packageÂs icon in the Workspace. After installation with the Installer, select "ELSA WINNER 1000/2000" as display adapter in the configuration application. It is required to select the installed board now, since the driver supports all ELSA *WINNER* cards. To do so, press the "select" button. A window named **ELSA *WINNER* Inspector** is displayed. A technical information box shows what to do next and, after a video mode is selected, the line frequency and pixel clock corresponding to the video mode. Installer and Configuration application are part of the NEXTSTEP software.

Known Problems

- none