

ScanTek

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COLLABORATORS

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REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

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Chapter 1

ScanTek

1.1 ScanTek Manual

ScanTek 1.1

A scanner driver for
Microtek and Highscreen
Flatbed Scanner

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Get It, Feel It, Love It

Overview	The features
System Requirements	What you must have!
Installation	How to install
Using ScanTek	How to use
Registration	Why and how to register
Support	Where to get it
Trouble Shooting	What to consider
Bug Reports	If any..
Copyrights	Consider carefully
Credits	I thank you
Author	Me ..
History	It's history
Future	Things to come

1.2 Overview

Overview

The ScanTek scanner driver has the following features:

1. Support of the one pass scanner model MICROTEK IISP (ScanMaker) or the OEM model HIGHSCREEN Flatbed Color IIs (SCSI, up to 600dpi).

2. Support of black/white, built-in halftone (dither), one-pass-color-scan, grey, red, green and blue scan.
3. Individual setting of resolution, scanning frame, contrast, shadow, midtone, highlight, exposure time and scanning speed for download to the scanner.
3. Scanning to IFF File of 1, 8 or 24 bit color depth. The maximum size of the scanned image is independent from the RAM size.
4. GUI for preview and configuration of the driver. You need Kickstart 2.04 or higher.
5. Sizeable preview window in black/white or grey scale. There are much more skilled programs to view and manipulate the scanned images in color. (A tool like ADPRO, IMAGE FX or so is needed, if you want to do sophisticated postproduction)
6. Screenmode requester to define screen for working.
7. Configurable SCSI device and SCSI ID. (Yes, the driver supports only SCSI connectable Microtek scanners. This is not rather bad, since I do not know of any NON-SCSI scanner from Microtek).
8. Support of Microtek II three pass color scanner, but I have implemented this support without testing because I have no Microtek II scanner. Try it and report to me all problems (if any) to implement a full working version.
8. The driver is tested with the following SCSI drivers: oktagon.device and gvpscsi.device V4.5.
9. ScanTek is written using SAS C 6.55.
10. ScanTek is SHAREWARE.
11. The non registered version of ScanTek is a full working version but all scanned images have black lines to motivate you to register.

1.3 System Requirements

System Requirements

1. An AMIGA with Kickstart 2.04 or higher.
 2. A SCSI host adapter (commonly known as SCSI controller) with an external connector for the scanner :-)
 3. You should have more than 2 MByte RAM in one piece. If you have less, the scanning would be rather boring than fun.
 4. A harddisk with lots of free space.
-

1.4 Installation

Installation

The archive contains the following files:

ScanTek/ScanTek	- The scanner driver
ScanTek/ScanTek.info	- The appropriate info file
ScanTek/ScanTek.guide	- This amigaguide document
ScanTek/ScanTek.guide.info	
ScanTek/ReadMe	- A short description
ScanTek/ReadMe.info	
ScanTek/OrderForm	- The english orderform
ScanTek/OrderForm.info	
ScanTek/Bestellformular	- The german orderform
ScanTek/Bestellformular.info	
ScanTek/Images/	- Directory for scanned images
ScanTek/Temp/	- Directory for temporarily files

To install, unpack the archive to a preferred location at your hard disk. Assigns are not necessary.

1.5 Using ScanTek

Using ScanTek

After installing you can start ScanTek from CLI or the Workbench.

Configuration	Tayloring to your needs
Scanning	Scanning
Menus	The Layout of the Menus
Windows	The Layout of the Windows

1.6 Configuration

Configuration

1. Select the menuitem >Settings/SCSI...<

- Set the SCSI <Device Name> and scanner SCSI <Device ID> according to your SCSI system configuration . The SCSI <Device ID> must be same as the SCSI ID which is set with the push-indexing or rotary switch on the rear panel or the underside of the scanner. Any ID from 0 through 6 is valid as long as it is not used by any other device on the SCSI bus.
- The <Scan Buffer> should be set as large as possible, because the scanner performs better with a large buffer. If the buffer is not large enough to

receive the whole scanned image, then the scanner fills this buffer and stops until the data is processed. Then the scanner continues to scan the next portions until the whole image is scanned.

- The <File Buffer> size is not as important as the <Scan Buffer> size. A value of several kBytes may also work well.
- The <File Buffer> and <Scan Buffer> are only allocated during the scanner access and you should ensure that the specified memory is available at that time.
- The memory types <Scan Memory> and <File Memory> can be modified to speed up the SCSI performance on certain SCSI host adapters. You may test the various memory types and choose the one that performs best.
- Examine your SCSI settings by clicking the <Test Device>-Button and wait for the delivered information in <Test Results>. ScanTek has checked, if the given SCSI parameters and the related SCSI device is suitable.
- Click <OK> to accept your new settings or <Cancel> to forget it.

2. Select the menuitem >Dir Paths/Scanned Pics...< and >Dir Paths/Temp. Files...<

- Set the initial default directory path, where the scanned images or the temporarily needed files should be located.
- The temp directory should never be located in RAM. You should better set the <Scanner Buffer> to a higher value to increase the scanning performance.

3. Select the menuitem >Settings/Screenmode<

- You will get a screenmode requester, where you can choose a new screenmode or change the color depth, ie. the number of screen colors.
- If the screenmode requester does not appear, you must get a newer version of the ASL library, that supports the screenmode requester.

4. Select the menuitem >Settings/Save Settings<

- You can save your current settings to a file. The default settings file name is 'ScanTek.cfg'. This file will be read during startup of the program.
- With the menuitem >Settings/Load Settings< you can read a different settings file.

1.7 Scanning

Scanning

After starting and configuring ScanTek, we can start to scan.

1. Place the desired object you want to scan on the scanner

2. Size the Preview Window as large as you want it to

3. Getting a preview picture

- Click the <Preview>-Button in the Main Control Window or select the menu item >Project/Preview<.
- The scanner starts to scan a preview picture and displays it in the

Preview Window.

- The size of the preview picture depends on the size of the Preview Window.
- During the scan the Scanner Access Window is open and shows the scanning status. ←

4. Set the scanning frame in the Preview Window

- Press the left mouse button, hold it and move the mouse until the scanning frame is as large as you want it.
- The dimensions of the image defined by the scanning frame are shown in the Scanning Frame Box. These figures are only approximate.

5. Set the desired scanning mode

- Click the <Scan Mode>-Button until your desired scanning mode appears.
- Click the <Options>-Button to change the parameters of the actual scan mode. Each scan mode has an Options Window. Even if the options window look similar, the options of each scanning mode are independent from another.

6. Set the scanning resolution

- Move the <Resolution>-Slider to the desired resolution setting. (dpi = dots per inch). A high dpi value leads to more dots scanned per inch and to a larger scanned image. Take care of the moiree effect as described in Trouble Shooting .

7. Start the scanning process

- Click the <Scan>-Button in the Main Control Window or select the menu item >Project/Scan<.
- You will get a file requester, where you can define the file name for the image to scan.
- During the scan the Scanner Access Window is open and shows the scanning status.
- The scanned image will be written as uncompressed IFF File with either 1, 8 or 24 bit color depth.
- If your <Scan Buffer> is smaller than the picture to scan, then ScanTek will use temp files for saving. The scanning process will be divided into several scanning accesses until the image is completely scanned.

1.8 Menu Structure

Menu Structure

Project

```
|-- Scan
|-- Preview
|-- About...
`-- Quit
```

Settings

```
|-- SCSI...
|-- Scanning
```

```
| |-- Black&White
| |-- Halftone
| |-- Color
| |-- Red
| |-- Green
| |-- Blue
| |-- Grey
|
|-- Dir Paths
| |-- Scanned Pics...
| |-- Temp. Files...
|
|-- ScreenMode
|
|-- Load Settings
|-- Save Settings
```

1.9 Project/Scan

Menu Item Project/Scan

After selecting this menu item, a file requester appears. This file requester can be used to choose the filename for the image to be scanned. The actual parameters defined in the Main Control Window are taken for the scanning of the image.

1.10 Project/Preview

Menu Item Project/Preview

After selecting this menu item a preview image is scanned and displayed in the Preview Window . The size of the preview image depends on the actual size of the Preview Window.

1.11 Project/About...

Menu Item Project/About...

The About Window will be displayed to show general information about the program. The name of the registered user will be also displayed.

1.12 Project Quit

Menu Item Project/Quit

If you want to quit the program, use this menu item. Alternatively you can click on the close gadget in the Main Control Window .

1.13 Settings/SCSI...

Menu Item Settings/SCSI...

After selecting this menu item the SCSI Parameter Window opens and you can view and set the SCSI parameters.

1.14 Settings/Scanning/Black&White

Menu Item Settings/Scanning/Black&White

After selecting this menu item the Black&White Options Window opens and you can view and set the Black&White parameters.

1.15 Settings/Scanning/Halftone

Menu Item Settings/Scanning/Halftone

After selecting this menu item the Halftone Options Window opens and you can view and set the Halftone parameters.

1.16 Settings/Scanning/Color

Menu Item Settings/Scanning/Color

After selecting this menu item the Color Options Window opens and you can view and set the Color parameters.

1.17 Settings/Scanning/Red

Menu Item Settings/Scanning/Red

After selecting this menu item the Red Options Window opens and you can view and set the Red parameters.

1.18 Settings/Scanning/Green

Menu Item Settings/Scanning/Green

After selecting this menu item the Green Options Window opens and you can view and set the Green parameters.

1.19 Settings/Scanning/Blue

Menu Item Settings/Scanning/Blue

After selecting this menu item the Blue Options Window opens and you can view and set the Blue parameters.

1.20 Settings/Scanning/Grey

Menu Item Settings/Scanning/Grey

After selecting this menu item the Grey Options Window opens and you can view and set the Grey parameters.

1.21 Settings/Dir Paths/Scanned Pics...

Menu Item Settings/Dir Paths/Scanned Pics...

After selecting this menu item a directory requester opens and let you set the default directory path, where scanned images are written to.

1.22 Settings/Dir Paths/Temp. Files...

Menu Item Settings/Dir Paths/Temp. Files...

After selecting this menu item a directory requester opens and let you set the default directory path for temporary files.

1.23 Settings/Screenmode

Menu Item Settings/ScreenMode

After selecting this menu item a screenmode requester opens and let you set the screen mode. If you select a screenmode, then ScanTek closes his actual screen and opens a new screen.

To ensure a high quality preview image, try to get a large Preview Window . The more colors you have the better the preview image output.

NOTE: The preview image will be deleted during the change of the screenmode.

1.24 Settings/Load Settings

Menu Item Settings/Load Settings

After selecting this menu item the SCSI and Scanning parameters can be loaded from a file. The filename can be chosen with a file requester. The default parameter file is named 'ScanTek.cfg'. It is loaded during the startup of ScanTek (if available).

1.25 Settings/Save Settings

Menu Item Settings/Save Settings

After selecting this menu item the SCSI and Scanning parameters can be saved to a file. The filename can be chosen with a file requester. The default parameter file is named 'ScanTek.cfg'.

1.26 Windows

Windows

- Main Control Window
- Color Options Window
- BlackWhite Options Window
- Halftone Options Window
- Preview Window
- Scanner Access Window
- SCSI Window

1.27 Main Control Window

Main Control Window

The following gadgets appear in this window:

Scan Mode : The supported scanning modes.

Options : Dependent on the scan mode there are several scanning options.

- Black&White
- Halftone
- Color
- Red
- Green
- Blue
- Grey

Resolution : The resolution to be used at scanning.
The preview resolution is independent from this value and derived from the Preview Window size.

Preview : To get a preview image for displaying in the Preview Window .

This function can also be start by selecting the menu item Project/Scan .

Scan : To start scanning. This function can also be start by selecting the menu item Project/Scan .

CloseGadget : To quit the program.

The following information text fields appear in this window:

Width : Displays the width of scanning frame in the actual chosen length unit.

Height : Displays the height of the scanning frame in the actual chosen length unit.

Size : Displays the size of the image

1.28 Color, Red, Green, Blue and Grey Options Window

Color, Red, Green, Blue and Grey Options Window

This window enables you edit the parameters for the Color, Red , Green, Blue and Grey scanmodes.

The mentioned scanmodes have the same parameters, but they are independent from another. If you edit the options for the red scanmode, then only this options are changed.

The following gadgets appear in this window:

Exposure Time : The exposure time or analog brightness adjustment has a valid range from at least -18% to +21 % in steps of 3%.

Contrast : The contrast setting has a valid range from at least -42% to +49% in steps of 7%.

Digital Brightness : For scanners that support digital brightness adjustments this parameter has a valid range from -100% to +100%.

The following parameters are described by quoting from the Microtek Programmers Reference:

Speed : "Lower speeds can be used to prevent deterioration of image quality when the <Scan Buffer> is small and the image must be scanned in segments."

Shadow : "... setting a value other than 0 in this register makes the darkest scanned shades (all raw pixels values equal to or less then the register value) come out as pure black (0) and linearly maps the remaining scanned shades (all raw pixel values greater than the shadow adjustment value

and less than the highlight register value) into the range of 0 through 255."

Midtone : "... setting a value other than 128 in this register causes all raw scanned values from 0 (or the shadow adjustment register value) through the midtone adjustment register value minus one to be mapped linearly into the range of 0 through 127, and all raw scanned values from the midtone adjustment value through 255 (or the highlight adjustment register value) to be mapped linearly into the range of 128 through 255."

Highlight : "... setting a value other than 256 in this register makes the lightest scanned shades (all raw pixel values equal to or greater than the register value) come out as pure white (255) and linearly maps the remaining scanned shades (all raw pixel values less than the highlight adjustment value and greater than the shadow register value) into the range of 0 through 255."

Cancel : Throw away changes.

OK : Accept changes.

NOTE: Parameters which are not supported by the scanner or ScanTek are ghosted.

1.29 Black&White Options Window

Black&White Options Window

Black&White : This value defines the threshold for the black&white conversion. All raw scanned values less than this value are black and the other values are treated as white.

Speed : "Lower speeds can be used to prevent deterioration of image quality when the <Scan Buffer> is small and the image must be scanned in segments."

Cancel : Throw away changes.

OK : Accept changes.

1.30 Halftone Options Window

Halftone Options Window

Halftone Pattern : There are at least 12 different build in dither patterns.

- Speed : "Lower speeds can be used to prevent deterioration of image quality when the <Scan Buffer> is small and the image must be scanned in segments."
- Cancel : Throw away changes.
- OK : Accept changes.

1.31 Preview Window

Preview Window

This window is used to show the preview image and to define the scanning frame. The size of this window can be modified. During preview scanning the dimensions of the window are taken to calculate the size of the preview image.

The preview will be scanned with a higher resolution, if the preview window is larger. The aspect ratio of the usable scanner flatbed is considered as well.

The preview image is surrounded by a border frame, that shows the maximum size of the image.

Within the border frame it is necessary to set a scanning frame. The scanning frame is set by pressing and holding the left mouse button and then move the pointer to the desired location. During this movement the scanning frame is updated. If you release the left mouse button then the scanning frame is set.

In the Main Control Window the actual dimensions and memory size of the image to be scanned are shown.

1.32 Scanner Access Window

Scanner Access Window

This window appears during scanning. It informs about the actual status of the scanning process.

Stop : Click to stop or abort the actual scanning process. This event can be delayed due to the fact, that the transfer of raw data from the scanner to the <Scan Buffer> can not be interrupted immediately. This may lead to the fact that the actual scanning action can not be stopped.

1.33 SCSI Window

SCSI Window

This window must be used to set and to enable the SCSI scanner configuration .

Device Name : The device name of the used SCSI host adapter.

- Device ID : The device ID or SCSI ID of the flatbed scanner.
The SCSI <Device ID> must be same as the SCSI ID which is set with the push-indexing or rotary switch on the rear panel or the underside of the scanner. Any ID from 0 through 6 is valid as long as it is not used by any other device on the SCSI bus.
- Scan Buffer : The size in kByte of the <Scan Buffer> used for image scanning.
The memory is only allocated during the scanning access.
- File Buffer : The size in kByte of the <File Buffer> used for file operations image scanning. The memory is only allocated during the scanning access.
- Scan Memory : Defines the type of used memory. This enables you to speed up SCSI performance in some cases.
- File Memory : Defines the type of used memory. This enables you to speed up SCSI performance in some cases.
- Test Device : Must be used to test the SCSI settings. You have to activate this test to enable the new settings.
- Test Results : The results of the <Test Device> will be displayed in this list view.
- Cancel : Throw away changes.
- OK : Accept changes.

1.34 Registration

Registration

ScanTek is shareware.

You have tested ScanTek and want to register. The registered version offers you the following advantage:

- no more black lines in the scanned images

The shareware fee is DM 30,- or US\$ 30,-. Registered users will receive a personalized keyfile which removes the black lines.

Edit the file "OrderForm" or "Bestellformular", answer the questions, print it out and sign it. Put it together with the registration fee (only cash accepted) in an envelope and send it to me .

The keyfile will be sent to you via email or on a floppy disk.

1.35 Support

Support

The Xantilon BBS (Nürnberg, Germany) will always have the latest version of ScanTek.

```
+49-911-819860 ( Zyx 19.2 )
+49-911-819878 ( V.FC 28.8 )
+49-911-862090 ( TORN. 14.4 )
+49-911-8179985 ( OnBit 24.0 )
+49-911-8129806 ( ISDN 64.0 )
+49-911-8129807 ( ISDN 64.0 )
```

Login: gast

Board: Filebereich/+Amiga-PD/-Support/-ScanTek
or
NewsFiles/Filebereich/+Amiga-PD/-Support/-ScanTek

Every major release will be uploaded to the AmiNet.

1.36 Trouble Shooting

Trouble Shooting

If something is going wrong consider these golden rules:

- Check the SCSI settings in ScanTek and click the <Test Device>-Button for further information ;-)
- The scanner is not ready (the READY lamp is blinking).
-> Wait until the READY lamp is on or you have to reset the scanner by switching it off and on.
- The scanner may not be mounted, if you switch it on after the AMIGA has booted. Reboot the AMIGA or remount the scanner with an appropriate tool.
- The SCSI bus hangs up during the scanner access.
--> You may check your termination on the SCSI bus, since the scanner is not terminated internally. You may have to connect an external SCSI termination plug.
--> You may have to change the order of the discrete SCSI components.
- There is a kind of pattern over the scanned image and the scanned image looks not good.
-> This may be caused by a moire effect.
You have possibly scanned a raster print. Each printed paper has its own dpi rate. This dpi rate overlaps with the scanners dpi rate and leads to the mentioned moire effect.
The only solution is to increase the scanner resolution to a value, that is more than twice as high as the dpi rate of the print.
As a rule of thumb the dpi rate of rastered prints goes from 100 to 150 dpi. If you get this moire effect you should choose a resolution of 200

to 300 dpi.

If nothing of the above mentioned first aid methods lead to a conclusion, then you may give me a bug report .

1.37 Bug reports

Bug reports

If you find something strange in the behaviour of ScanTek decide for yourself, whether it is a bug or a feature.

If it is a bug, there is a way to get additional information. You must tell ScanTek to generate a LOG file.

From CLI: ScanTek debug
From Workbench: Set the TOOLTYPE DEBUG=ON

With this startup value ScanTek generates a text file called 'ScanTek.log' that may contain some important informations about several scanner operations. Try to localize the bug and send me the file 'ScanTek.log'.

Finally the bug report should contain the following items:

- The file 'ScanTek.log', if it is a scanner interworking problem.
- Your AMIGA configuration: Model, RAM, OS-Version, accelerator board, graphic card, SCSI host adapter and SCSI components
- Your scanner model type

Any suggestions on ScanTek, this guide or other things of interest are welcome.

1.38 Copyrights

Copyrights

The program ScanTek is © Copyright 1995 Waldemar Zöhner. The archive may be freely distributed as long as it remain unchanged.

The keyfile for the registered user must be installed on one computer only and it is not allowed to spread it to others. With your signature on the orderform you accept these conditions.

The user interface of the program was designed with GadToolsBox
© Copyright 1991-1993 Jaba Development.

Parts of the program are © Copyright 1991-1993 Jaba Development.

1.39 Credits

Credits

The author says thank you to the following persons and companies for their help and support.

- Arndt van der Molen for beta testing and constructive criticism.
- Horst (The Whistler) Knobloch for support
- Beate Kaspar (...all good things must end...)
- Rainer Wallenfels for Xantilon BBS
- Jaba Development for GadToolsBox
- »»»»~Several Icons by Martin Huttenloher ««««
- Microtek, Düsseldorf for the programmers reference
- SAS Institute for their C-Compiler 6.55 and at least no support

1.40 Author

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For faster access and faster response use email.

1.41 History

History

V1.0 30 Nov. 1995

- first public release

V1.1 17 Dec. 1995

- detection of Microtek scanner via SCSI inquiry enhanced
- stepping of resolution slider adapted to expanded base resolution
- calculation of scanning frame size data modified

1.42 Future

Future

- Optimized performance speed
 - Enhanced scanning frame handling
 - Full CLI control to scan without GUI
 - Start of an external program after scanning (i.e. a picture viewer)
-