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Scion FG Capture for Windows

Scion Corporation
82 Worman's Mill Court
Suite H
Frederick, MD 21701 USA
Phone (301) 695-7870
Fax (301) 695-0035
http://www.scioncorp.com

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Getting Started

Introduction

This manual describes the Scion FG Capture program. The Scion FG Capture program currently supports the Scion FG-7 frame grabber board. This manual describes the installation and use of the program.

Please take a few moments to read through this manual before you begin using the Scion FG Capture program as it should answer some questions that you may have. Please contact Scion Corporation should you encounter difficulty at any time, or if you have any questions.

Features

The program Features include:

- Allows frame capture, providing scientific quality grayscale video images using the Scion FG-7 frame grabber board.
- External trigger support
- Contrast and Brightness controls
- Integrate On-Chip from 2-127 frames.

System Requirements

To use the program, you need:

- A Pentium IV or higher processor for use with Microsoft Windows 2000 or Windows XP
- Scion FG-7 Frame Grabber
- 256 Mb of RAM (512 or more Mb recommended)
- SVGA TrueColor with 2 Mb or more of Video RAM recommended

Installation

Installing the Scion FG Capture program should only take a few minutes. Please follow the steps below:

Windows Install

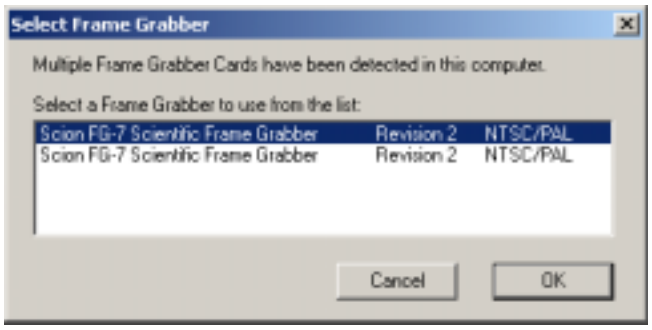
1. Insert the “FG-7 Application CD” into the CD-ROM drive.
2. A window containing the contents of the CD will appear. If it does not then double-click the “Scion CD” icon located on the Desktop.
3. Double-click the “FG Capture” folder.
4. Double click the “Setup.exe“ to install.
5. Follow the on screen prompts and choose a destination for the software.

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Using Scion FG Capture

Multiple Frame Grabber Boards

If multiple frame grabber boards are installed, a dialog box like the following will appear:



This will show a list of the currently installed Scion frame grabber boards. It gives the model number, revision number and video type setting.

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Menus

File Menu

Save As…

Saves the captured image in BIN, BMP, RAW or TIF format. If the capturing is live then the capture will stop and the captured image will be saved.

Binary (.BIN)
Saves the image as binary pixel data, in row order, one byte per pixel, without a header. The BIN file is written in Intel (Little Endian) byte order.

Raw Pixel Data (.RAW)
Saves the image as raw pixel data, in row order, one byte per pixel, without a header. The RAW file is written in Intel (Little Endian) byte order.

Bitmap (.BMP)
Saves the image to a Windows Bitmap image file.

Tagged Image File Format (.TIF)
Saves the image to a file in uncompressed TIF format. The file is written in Intel (Little Endian) byte order. TIF is the default file format for FG Capture, and is usually the best format for saving digitized images.

Save Selection As…

Saves a rectangular selection of the captured image in BIN, BMP, RAW or TIF format. See above for a description of the file types.

Page Setup…

Allows specifying of printer properties. Printing orientation (portrait or landscape), paper size and margins of a printed page can be modified with this function.

Print…

This command will print the image or selection to the default printer. Selection or the printer and number of copied can also be accessed here.

Video Print

Using this command will output the current image to the video output of the FG-7 board.

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Quit

Exits the program. Using the Control + Q keys will also quit the program.

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Image Menu

Start Live Capturing

Continuously displays live video using the Scion FG-7 PCI frame grabber board. Notice how, during continuous capture, the name of this command changes to “Stop Capturing” and “Live” appears in the title bar. To “freeze” the image, select “Stop Capturing”, type Control + G, or click in the acquisition window. While capturing, you are allowed to change offset and gain in the “Color Balance” Tab.

Snap

This command will quickly capture a single frame based on the current Properties settings, excluding the Multi-Frame settings. Once captured, the title bar changes so that “Processed” is displayed. Using the Snap is highly recommended when the Exposure is set high. See below for more information about Properties.

Multi-Frame Process

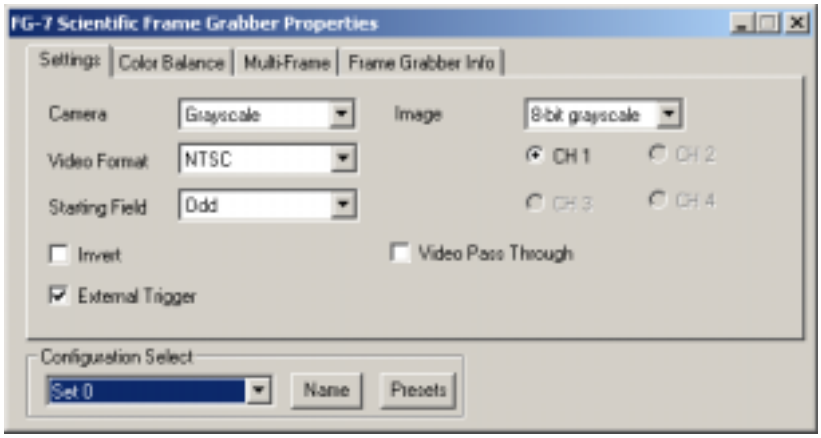
Selecting this will capture a frame based on the current multi-frame settings in the Properties window. During the capturing the Title Bar will change to “Processing” to show that the Multi-Frame capture is being processed. Once captured, the title bar changes so that “Processed” is displayed, at this time the image can be saved. At any time during the multi-frame process the Escape key can be used to abort the processing. See below for more information about Properties and Multi-Frames.

Show Properties…

Selecting this menu item will allow you to configure capture settings

Settings

This tab shows the frame grabber settings that are currently being used.



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Camera
This specifies that the frame grabber is connected to a *Grayscale* camera. This setting cannot be changed with the FG-7 installed.

Image
Specifies that he image capturing will be done in *Grayscale*. This setting cannot be changed with the FG-7 installed.

Video Format
Selects if the video input is *NTSC* (640 x 480) or *PAL* (768 x 576). North America, South America and Japan usually have NTSC video source. While Europe and Asia mainly have PAL video input.

Starting Field
This can be *Odd* field first or *Even* field first. The default is *Even* field first.

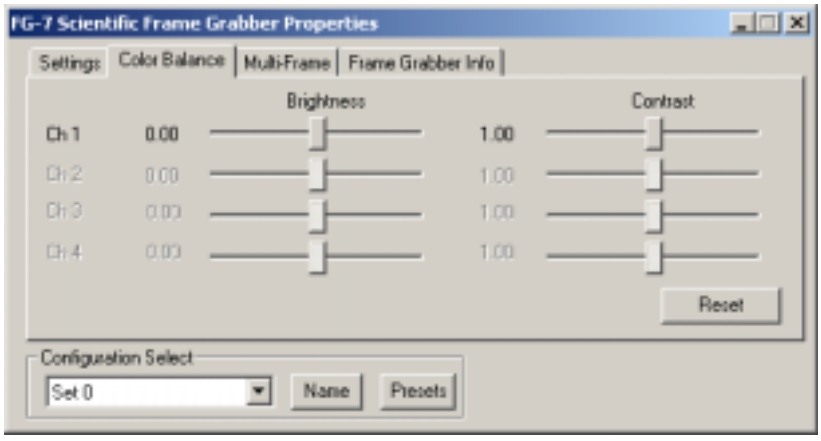
Invert
The video is inverted when this option is selected.

Video Pass Through
With this selected the video will pass through the frame grabber board to the output line. Even when the live is stopped the video will continue on the output line of the frame grabber board.

External Trigger
This can be set to have the frame grabber board will wait for an external trigger pulse before capturing an image.

Color Balance

This tab contains the settings for Contrast and Brightness for the frame grabber board.



Brightness
This will for the adjustment of the Brightness for the frame grabber board. Values range from –1 to 1 with 0 as the default.

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Contrast

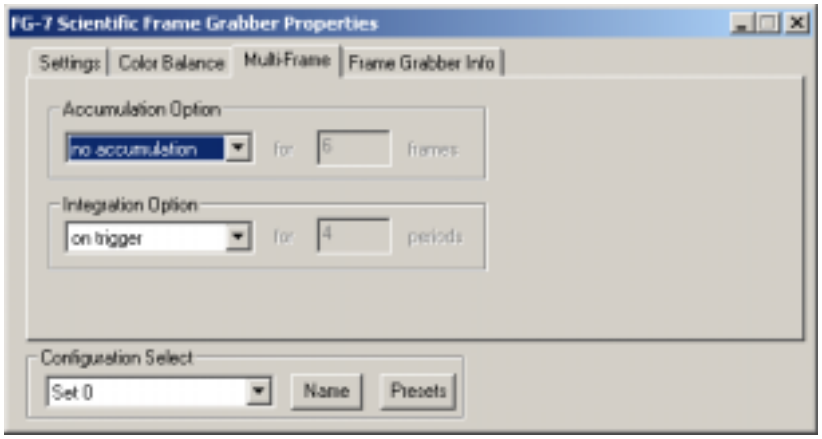
This will allow for the adjustment of the Contrast for the frame grabber board. Values range from .5 to 2.0 with 1 as the default.

Reset

All Brightness and Contrast settings will be set back to their default values if the Reset button is clicked.

Multi-Frame

The settings in this tab will allow the user to do frame averaging, summation, integrate on-chip, or a combination of those functions.



Accumulation Option

Average will take the number of frames specified and average them. This is used to reduce random noise in the image. This option can be used in addition to the Integration Options.

Sum will add the number of frames specified to get a brighter image. This option can be used with the Integration Options.

No Accumulation specifies that no accumulation operations will be done.

Integration Option

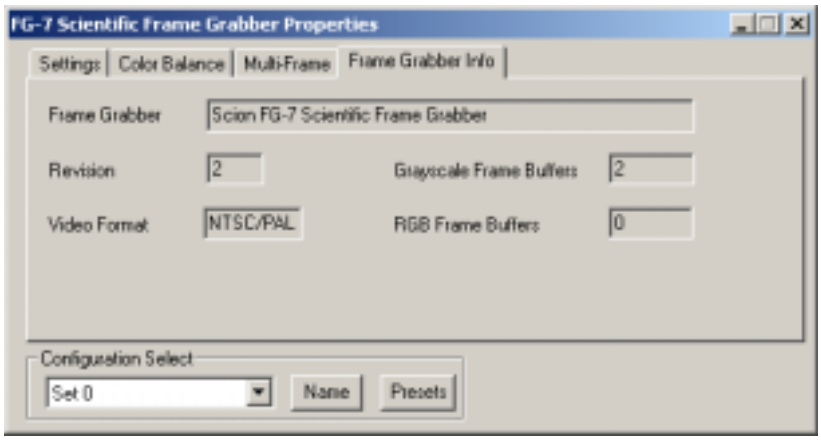
On Chip will do on chip integration for the number of frame periods specified, using certain models of Cohu series and Dage-MTI cameras, see Scion for details. The purpose is to brighten the image in a low light situation; this is better than summing because the camera is generating the integrated image. The camera will integrate on-chip for the specified number of frame periods and the frame grabber will capture the integrated frame. On-chip integration requires a special cable, available from Scion, for connecting the integration input of the camera to the frame grabber. This can be used in addition to the Averaging Options.

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On Trigger will wait for an external trigger pulse before capturing the image. This can be used in addition to the Averaging Options.

No Integration specifies that no integration operations will be done.

Frame Grabber Info
This will give general information about the connected frame grabber board.



Frame Grabber
This will show the current frame grabber board.

Revision
Shows the current revision of the frame grabber.

Grayscale Frame Buffers
Number of grayscale frame buffers on the board.

Video Format
Shows the video format that is supported with the frame grabber board.

RGB Frame Buffers
Number of RGB frame buffers on the board.

Configuration Select
Ten sets of Properties settings for the frame grabber board can be created and saved. A selection can be made to the configuration selection, which is most suitable for the shooting condition at hand. The currently active configuration selection is shown in the Properties window. All settings are saved upon exit of the program.

Name
This will bring up a window to allow the user to create a custom name for the currently selected configuration.

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Presets
This will set all frame grabber settings and functions to their factory default.

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