

# User Manual

# KeyScan Imaging

**KeyScan Ltd.**

02 Feb 2009

**Notice:** The data contained in this document has been submitted in confidence and contains trade secrets and/or privileged confidential technical, commercial or financial information. Such data should be used only for evaluation purposes and should not be copied or distributed without written permission of KeyScan Tech, Inc.

1. INTRODUCTION-.....	6
2. PRODUCT INSTALLATION-.....	8
2.1. INTRODUCTION-.....	8
<i>The Hardware</i> .....	8
<i>The SOFTWARE</i> .....	8
<i>INSTALLATION PROCESS</i> .....	8
2.2 STAGE 1 – CHECK THE BOX CONTENT AND PC MINIMUM REQUIREMENTS .....	9
<i>The KS810 package contains the following items:</i> .....	9
<i>The minimum PC configuration requirements:</i> .....	9
2.3. STAGE 2 - CONNECT AND TEST THE KS810 KEYBOARD .....	10
2.4. STAGE 3- INSTALL KEYSCAN IMAGING APPLICATION SOFTWARE.....	11
2.5. STAGE 4 – CONNECT SCANNER AND SETUP ITS DRIVER .....	12
2.6. STAGE 5 - SCANNER CALIBRATION .....	16
2.7. HANDLING PROBLEMS DURING INSTALLATION PROCESS .....	17
<i>Others problems you may experience:</i> .....	18
3. INTRODUCTION TO SCANNING-.....	19
3.1. CALIBRATION-.....	19
3.1.1. <i>When to calibrate:</i> .....	19
3.1.2. <i>How to calibrate:</i> .....	19
3.1.3. <i>Automatic check and prompt for calibration:</i> .....	20
3.2. SCANNING PARAMETERS CONSIDERATIONS- .....	20
3.3. SCAN ONE PAGE- .....	22
3.4. ABORT SCANNING (PAPER JAM)- .....	22
3.5. OUTPUT FILE FORMATS- .....	22
3.6. SCAN NUMBER OF PAGES-.....	23
3.6.1. <i>Scan to a new document-</i> .....	23
3.6.2. <i>Scan to the same document-</i> .....	23
3.6.3. <i>Browsing multi-page document-</i> .....	23
3.7. WHAT CAN THE USER DO WITH SCANNED IMAGE-.....	23
4. TUTORIALS- .....	28
4.1. SCAN ONE IMAGE TO FILE-.....	28
4.2. SCAN MULTIPLE IMAGES TO SINGLE FILE-.....	28
4.3. SCAN MULTIPLE IMAGES TO MULTIPLE FILES- .....	28
4.4. COLOR COPIER- .....	28
4.5. SEND FAX- .....	29
4.6. SEND EMAIL-.....	29
4.7. USE KEYSCAN IMAGING APPLICATION AS AN ENHANCED TWAIN DRIVER.....	29
4.8. INTRODUCTION TO WORKING WITH KEYSCAN AUTO-SCAN- .....	30
4.8.1. WORD-PROCESSOR DOCUMENT EXAMPLE: AUTO-SCAN TO MICROSOFT WORD DOCUMENT- ....	31
4.8.2. DOCUMENT EXAMPLE: AUTO-SCAN TO ADOBE ACROBAT- .....	32
4.8.3. IMAGING EXAMPLE: AUTO-SCAN TO ADOBE PHOTOSHOP- .. <b>ERROR! BOOKMARK NOT DEFINED.</b>	
5. USER INTERFACE FOR INTERACTIVE OPERATION-.....	34
5.1. INTRODUCTION- .....	34
5.2. <FILE> MENU- .....	34
5.2.1. <File> <New> Menu- .....	34
5.2.2. <File> <Open> Menu-.....	35
5.2.3. <File> < Open Desktop> Menu- (Not available on KeyScan Imaging).....	35
5.2.4. <File> <Close> Menu-.....	35
5.2.5. <File> <Save> Menu- .....	35
5.2.6. <File> <Save As> Menu- .....	35

5.2.7.	<File> <Delete> Menu-.....	35
5.2.8.	<File> <Print> Menu-.....	36
5.2.9.	<File> <Print Preview> Menu-.....	36
5.2.10.	<File> <Print Setup> Menu-.....	36
5.2.11.	<File> <Send Mail> Menu-.....	36
5.2.12.	<File> <Settings> Menu-.....	37
5.2.13.	<File> <Calibrate Scanner> -.....	39
5.2.13.	<File> <Scan> Menu-.....	40
5.2.14.	<File> <Scan to Current Doc> -.....	43
5.2.15.	Select Source (TWAIN scanners interface) -.....	44
5.2.16.	Aquire (TWAIN scanners interface) -.....	44
5.2.17.	Enable Auto-Scan -.....	44
5.2.19.	Disable Auto-Scan -.....	44
5.2.20.	Enable Scan Hot keys-.....	45
5.2.21.	Disable Scan Hot keys-.....	45
5.3.	HANDLING REGIONS-.....	46
5.4.	EDIT MENU-.....	48
5.4.1.	<Edit> <Undo> -.....	48
5.4.2.	<Edit> <Cut> -.....	48
5.4.3.	<Edit> <Copy> -.....	49
5.4.4.	<Edit> <Paste> -.....	49
5.4.5.	<Edit> <Paste Special> -.....	50
5.4.6.	<Edit> <Paste Link> -.....	50
5.4.7.	<Edit> <Delete> -.....	50
5.4.8.	<Edit> <Delete All> -.....	50
5.4.9.	<Edit> <Properties> menu-.....	50
5.4.10.	<Edit> <Resample Resolution> menu-.....	51
5.4.11.	<Edit> <Resize> menu-.....	51
5.4.12.	<Edit> <Add Frame> menu-.....	51
5.4.13.	<Edit> <Cut New> -.....	52
5.4.14.	<Edit> <Insert New Object> -.....	52
5.5.	VIEW MENU-.....	53
5.5.1.	<b>Tools &amp; Bars-</b> .....	53
5.5.2.	<b>Image Zoom-</b> .....	55
5.6.	IMAGE MENU-.....	57
5.7.1.	<Image> <Geometric Transformations> menu -.....	58
5.7.2.	<Image> <Enhancement> menu -.....	59
5.7.3.	<Image> <Filters> menu -.....	60
5.7.4.	<Image> <Paste Function> menu -.....	61
5.7.5.	<Image> <Deskew> menu -.....	61
5.7.6.	<Image> <Convert to Text> menu -.....	61
<b>6.</b>	<b>OTHER TYPE OF KEYS CAN IMAGING USERS-.....</b>	<b>62</b>
6.1.	INTERACTIVE USER-.....	62
6.2.	TWAIN USER-.....	62
6.3.	AUTO-SCAN, HOT-KEYS & ICON-SCAN USER-.....	62
6.4.	OLE2 IN-PLACE USER-.....	62
6.5.	SHELL USER-.....	62
<b>7.</b>	<b>AUTO SCANNING &amp; SCANNER HOT KEYS-.....</b>	<b>63</b>
7.1.	INTRODUCTION-.....	63
7.2.	AUTOSCAN OPERATION-.....	64
7.2.1.	<b>Activating / Stopping AutoScan:</b> .....	64
7.2.2.	<b>Working with AutoScan:</b> .....	64
7.2.3.	<b>Examples:</b> .....	65
7.2.3.1.	<b>Image to current application:</b> .....	65

7.2.3.2.	<i>Text to MS-WORD:</i>	66
7.2.3.3.	<i>Email (high compression/low compression):</i>	67
7.2.4.	<i>Setting and changing Auto-Scan functions.</i>	67
7.3.	HOT-KEYS FUNCTIONS-	67
1.	<i>Internet hot-keys:</i>	67
2.	<i>Scanner hot-keys:</i>	68
8.	TWAIN USER-	69
9.	“SHELL COMMAND” USER-	70
9.1.	INTRODUCTION-	73
9.2.	SHELL COMMAND SYNTAX-	73
9.3.	OPTIONAL SHELL COMMAND PARAMETERS (COMMANDS)-	73
9.3.1.	<i>UserType:</i>	73
9.3.2.	<i>InFile:</i>	73
9.3.3.	<i>OutFile:</i>	73
9.3.4.	<i>Filter:</i>	74
9.3.5.	<i>SQ:</i>	74
9.3.6.	<i>Res:</i>	74
9.3.7.	<i>SizeU:</i>	74
9.3.8.	<i>DocDef:</i>	74
9.3.9.	<i>OutFunc:</i>	74
9.3.10.	<i>OutQ:</i>	74
9.4.	FILTERS FUNCTIONS-	74
9.4.1.	<i>Rotate image:</i>	74
9.4.2.	<i>SHEAR image horizontally:</i>	74
9.4.3.	<i>SHEAR image vertically:</i>	75
9.4.4.	<i>FLIP image:</i>	75
9.4.5.	<i>REVERSE image:</i>	75
9.4.6.	<i>Resize image:</i>	75
9.4.7.	<i>ADD NOISE to image:</i>	75
9.4.8.	<i>AVERAGE image:</i>	75
9.4.9.	<i>EMBOSS image:</i>	75
9.4.10.	<i>Modify image intensity:</i>	75
9.4.11.	<i>MEDIAN filter:</i>	76
9.4.12.	<i>MOSAIC filter:</i>	76
9.4.13.	<i>POSTERIZE image:</i>	76
9.4.14.	<i>SHARPEN image:</i>	76
9.4.15.	<i>GAMMA correction:</i>	76
9.4.16.	<i>Set Image CONTRAST:</i>	76
9.4.17.	<i>Image SATURATION:</i>	76
9.4.18.	<i>HUE:</i>	76
9.4.19.	<i>HISTOCONTRAST:</i>	76
9.4.20.	<i>HISTOEQUAL:</i>	76
9.4.21.	<i>CLIPBOARD_PASTE:</i>	76
9.4.22.	<i>Convert to Black&amp;White:</i>	76
9.4.23.	<i>Translate text image to character (OCR):</i>	76
9.4.24.	<i>Process image by MATRIX:</i>	76
9.4.25.	<i>COMPRESS image data:</i>	76
9.4.26.	<i>DDE external filter application:</i>	76
9.5.	COMMAND LINES EXAMPLES-	77
9.6.	SHELL ACTIVATION BY THIRD PARTY APPLICATIONS-	77
9.6.1.	<i>Activation using the operating system UI-</i>	77
9.6.2.	<i>Activation using C++ application-</i>	77
10.	ICON USER -	79

<b>11.</b>	<b>OLE/COM ACTIVATION -.....</b>	<b>80</b>
11.1.	INTRODUCTION- .....	80
11.2.	OLE2 MODES OF OPERATION- .....	80
11.3.	STANDARD USER INTERFACE MODE – .....	80
11.4.	PROGRAMMING MODE – .....	82

## 1. Introduction-

“KeyScan Imaging” software is a scanning and imaging application. It is designed to give the end user and system integrator maximum flexibility in using the KeyScan keyboard-scanner product as a productivity tool seamlessly integrated with their application environment.

The KeyScan scanner and its KeyScan Imaging application can be activated and used in various ways-

- a. **KeyScan stand alone application-** The user can click on the KeyScan icon on his Windows desktop and activate KeyScan Imaging application, which enable scanning and processing documents using the KeyScan scanner.
- b. **KeyScan TWAIN source-** Most applications which are designed to interface with scanners should have built-in TWAIN software interface (An industry standard which allows any TWAIN compatible software and scanner to communicate and have the scanner activated by that application). KeyScan Imaging application is a TWAIN compliant data source. When a 3<sup>rd</sup> party application tries to activate KeyScan scanner using TWAIN interface it will actually activate the full-flagged KeyScan Imaging application, gaining enhanced set of capabilities not available to standard TWAIN interfaces.
- c. **Automatic scanning activation-** KeyScan Imaging application is accompanied by KeyScan NoTouch-AutoScan application. The NoTouch-AutoScan runs in the background and automatically activates its Timeout Bar Box when the user inserts a document into the scanner feeding slot. The user can either proceed with default setting (NoTouch mode) or move the mouse cursor over the timeout dialog and proceed with the AutoScan to select the function to be performed as soon as scanning is completed.
- d. **Scan to current application-** KeyScan has a built-in interface, which automatically push the scanned image into the last active application. Any application which can accept “paste clipboard” command should be automatically enabled for this interface. No further programming or interfaces are required.
- e. **Dedicated command line and desktop icon activation-** The KeyScan Imaging application includes internal command-line interpreter which allow the user to define its operation using set of simple instructions on a single command line. For example the user can instruct the KeyScan imaging to scan in color mode at specific resolution and when finished scanning activate the email program and attach the scanned document to the email. This kind of command line can be embedded in a desktop icon so the user has a single click icon for email or fax scanned document etc.
- f. **The keyScan application is OLE/COM server-** User can insert KeyScan scanned document using “Insert Object” interface built in 3<sup>rd</sup> party applications.
- g. **The KeyScan application is OLE/COM client-** 3<sup>rd</sup> party or VAR/OEM with specific requirement can use exposed COM interface to integrate KeyScan Imaging with their own software applications, COM interface requires special license from KeyScan Ltd.
- h. **Application-Bar activation-** User can use KeyScan application to scan documents and then select from KeyScan Imaging “Application Bar” the a 3<sup>rd</sup> party application to be activated with the scanned document, new applications can be added (or removed) from the “Application Bar”.

### **KeyScan Imaging software dual functionality-**

- KeyScan Imaging can be used as a stand-alone imaging application which can control the KS810 scanner and also activate and transfer data to third party applications.
- KeyScan Imaging with all its functionality can be used as an imaging layer between third party applications and KeyScan KS810 scanner which complement other application with a comprehensive set of imaging tools and uniform image processing interface, this layer can be accessed by the user and third party applications through standard interfaces such as COM\*\* or TWAIN or WIA\* or KeyScan unique AutoScan application

Whichever interface the user or third party IT application are using for the KS810 scanner they get the complete imaging and scanning functionality of the KeyScan Imaging application.

\*\* COM interface requires a special license and information from KeyScan

\* WIA interface is not available on the current version of KeyScan

## **2. Product Installation-**

### **2.1. Introduction-**

The following installation process instructs how to install KeyScan KS810 device its software applications and drivers.

#### **The Hardware**

The KeyScan KS810 is a Multi Function Peripheral (MFP) which integrates 3 different devices

1. A USB PC keyboard
2. A fast USB2 color sheet-feed scanner
3. A fast USB2 HUB with two free downstream ports which the user can use for WEB CAM memory stick smart-card reader mouse etc.

The keyboard is activated automatically when connected to the PC (using the USB cable supplied by KeyScan). No external power adapter is required for the keyboard to be fully functional.

The built-in document scanner and the built-in USB2 hub with its 2 free downstream ports become operational only when the power adapter is connected.

#### **The SOFTWARE**

The KeyScan Imaging software includes the following components-

- Drivers for the KS810 scanner; there is no need for drivers for the USB2 HUB and the keyboard, they use the built-in Windows drivers.
- KeyScan Imaging scanning application.
- KeyScan Imaging TWAIN driver.
- KeyScan NoTouch-AutoScan application.
- ReadIRIS OCR technology by IRIS SA integrated within KeyScan Imaging software.

### **INSTALLATION PROCESS**

KeyScan installation is composed of 5 stages:

<b>Stage</b>	<b>Action</b>
--------------	---------------

- |           |   |
|-----------|---|
| <b>1.</b> | Check the content of the KeyScan box; check if the PC complies with KeyScan minimum requirements.             |
| <b>2.</b> | Connect and test the KS810 keyboard.  |
| <b>3.</b> | Install the KeyScan Imaging software (including the drivers the imaging application and the IRIS OCR engine). |
| <b>4.</b> | Connect the KS810 scanner device and setup its driver.  |
| <b>5.</b> | Scanner calibration & restart the KeyScan Imaging software.   |

## 2.2 STAGE 1 – Check The BOX Content And PC Minimum Requirements

The KS810 package contains the following items:

-  KeyScan KS810 integrated keyboard-scanner device
-  The KeyScan wall-mount power adapter
-  The KeyScan USB2 communication cable
- White calibration sheet is not included in the box, any clean A4 size printer paper can be used for calibration.
- Software CD.
- This installation instructions card

### The minimum PC configuration requirements:

- PC Pentium 4 or higher with DVD reader.
- 1 free USB2.0 (high speed) port to connect the KeyScan, you must connect the KS810 scanner directly to your PC USB2 connector, do not connect it through a USB hub.
- Free disk space of at least 1GB for installation, recommended at least 2G byte free space for runtime. User should be aware, for example, that the size of a BMP format file, A4 size, 24 bit color in 600dpi will be more than 100M bytes.
- Operating system - Microsoft Windows XP SP2 or higher, Vista32.

#### WARNINGS

Use only the original KeyScan **power-adapter**, never attempt to use other power adapter which may cause permanent damage to the KS810.

Use only KS810 supplied hi-quality **USB2 cable**. The KeyScan is a high speed device. Low quality USB cables may cause random errors and unexpected problems.

**Connect the KS810 scanner directly to you PC USB2 connector.** Do not connect the scanner to desktop USB hub.

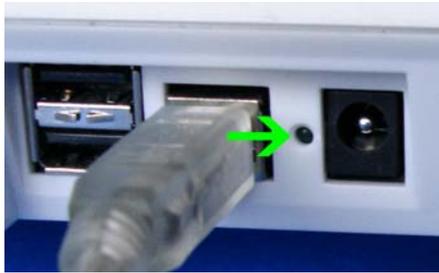
If your PC USB ports are of USB2 type as required but you have an external desktop USB hub (most likely of USB1.1 type) and you connect the scanner to the hub, then the whole connection behaves as a USB1.1 connection and not as a USB2 connection. Connecting the KS810 scanner to a non USB2 port will result random installation and scanning problems.

### 2.3. STAGE 2 - Connect and test the KS810 keyboard

- 

Connect the KeyScan USB2 high speed cable to a USB2 port on the PC (do not connect to external USB1.1 hub).
- 

Connect the other side of the USB2 cable to the middle connector (up stream USB port) on the KS810 rear connector panel.
- 

Do not connect the power adapter yet!
- The Windows system should recognize the new connected keyboard and USB2 HUB and install their drivers automatically.
- 

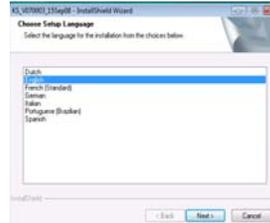
The green LED on the connector panel should be blinking, it is located between the power connector and the USB upstream connector. The blinking light indicates that the PC recognized the USB2 hub of the KS810 and both the hub and the keyboard are functional.

#### WARNING

Make sure you are using only the original KeyScan supplied USB2 cable and connect it directly to the PC USB2 hub, no extension USB cable or external USB hub are allowed. If the scanner is connected to USB1.1 port or to external desktop USB hub you may experience unpredicted behavior and errors.

## 2.4. Stage 3- Install KeyScan Imaging Application Software

- Activate the KeyScan installation according to the installation media you have (you must activate the installation as Administrator):
- If you downloaded the KeyScan software from KeyScan web site simply run the downloaded executable file, make sure you run it as Administrator.
- If you have a KeyScan installation CD which contain only the KeyScan application it will activate automatically the KeyScan installation and you will get the first installation menu



- If you have the KeyScan Documentation and Installation CD you will get a selection dialog letting you browse KeyScan documents, KeyScan short demo videos, installation of Irfan imaging software and installation of KeyScan software, Click on the KeyScan software installation label or icon to start the software installation



- Follow the installation instructions displayed by the installation software
- It is strongly recommended to make a full installation of all software options.
- Following are the installation dialogs and steps:



Dialog D1: Select language



Dialog D2: Welcome message



Dialog D3: License agreement Dialog



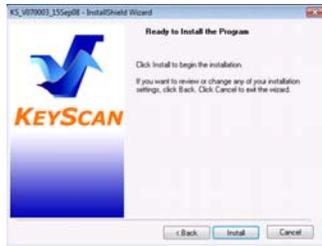
D4: User name



Dialog D5: components to install



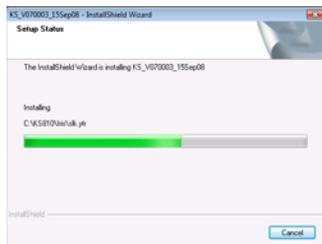
Dialog D6: Select target installation folder



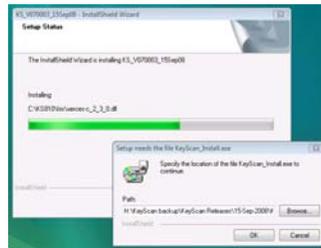
Dialog D7: Start installation



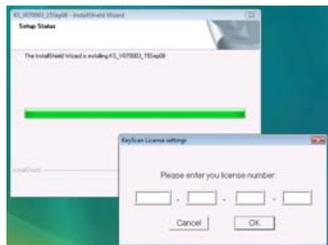
Dialog D8: Click to finish installation



Dialog D9: File transfer progress bar



Dialog D10: Location prompt → click OK



Dialog D11: software license prompt



Dialog D12: Readme file and finish

- When installation is finished, remove the installation media (the CD or DVD) and restart your computer.
- The installation process should place two shortcuts on your display desktop:



KeyScan Imaging Application shortcut



KeyScan AutoScan application shortcut

## 2.5. STAGE 4 – Connect Scanner and Setup Its Driver

Turn on the PC and wait till Windows is running, make sure the KeyScan USB2 cable is connected and the KS810 keyboard is functional.

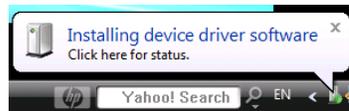
- Connect the power adapter to the power outlet on the wall.



- Insert the power adapter plug into the power connector on the KS810 rear connector panel.
- Look into the scanner feeding slot, you should see Red color light, indicating the scanner received the 5V power from the adapter.

- **Windows Vista32 device driver installation:**

- If you are installing the KeyScan on a Windows XP system, please proceed to “Windows XP device driver installation”.
- If you are installing the KeyScan on a Windows Vista32 system you should get within 30 seconds of plugging the power adapter, a small popup window on the right bottom corner of you screen “Installing device Driver Software”



- The first popup message will follow within with another small popup window declaring “KS810 usb2 device installed successfully”.



- This concludes the device driver installation for Vista32 operating system, please continue to “Stage 5” on this document.

- **Windows XP device driver installation:**

- Within 30 seconds a small message box should pop up for 10-20 seconds on the lower right corner of the monitor stating that a new hardware has been found “USB2 Scanner”

- A “Found New Hardware Wizard” dialog should popup in about 30 -60 seconds. For the question “Can window connect to windows update to search for software” select answer “No, not this time”.



- On the next step Windows installer will ask if you wish window to try and locate your driver automatically or you should give windows the location of the driver. You should let windows locate the driver, in case windows failed to locate the driver you should select the other option. For details please continue to next page.

## Install the software automatically



A new wizard dialog pops-up, select “Install the software automatically”.



Windows should locate the KeyScan\_KS810.inf driver installation file located under the system32 subdirectory of windows (this file and the KSDrvr.dll driver file has been copied to the system32 sub directory by the installation process). In case Windows failed to detect the KeyScan driver please continue with “install the software from a list of specified locations” below.



Window may display “Hardware installation” warning message during the installation process.

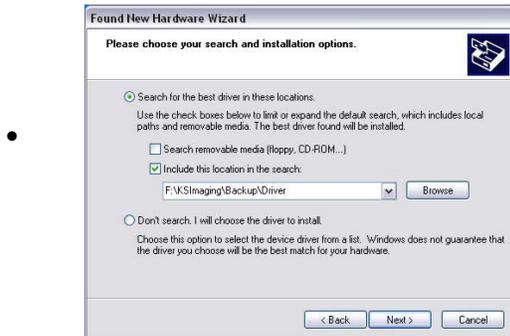


Installation is completed with this message, press “Finish” to get out of installation process.

## Install the software from a list of specified locations



You can change your selection from “Install the software automatically” to “install the software from a list of specified locations”.



Window let you specify the location of the driver software, enter the location of “<KeyScan installation directory>\Backup\Driver” and click [Next] button.



Window may display hardware installation warning message



After installation is finished a small message-window should popup on the lower right corner of the monitor stating- “Your new hardware is installed and ready to use”.

### WARNINGS

Use only the original KeyScan power adapter, usage of other power adapter may cause permanent damage to the KS810 and revoke any warranty for the product

## 2.6. STAGE 5 - SCANNER CALIBRATION

- After installation, the KeyScan KS810 scanner **must** be calibrated.
- Activate the KeyScan imaging software by double clicking on the “KeyScan Imaging” shortcut icon  (The KeyScan Imaging application is Sg.exe).
- On first installation the KeyScan will prompt you for license number, please pay attention to upper and lower case of the license number and make sure you place each 4 group letters/numbers in its window.
- From the Main MENU select <File><Calibrate Scanner>
- Place a white calibration paper (any printer A4 White and clean paper) in the scanner feeding slot, the paper must be adjusted to the right-side of the feeding slot (to the mark on the scanner door).
- The scanner will start feeding the calibration-paper; the calibration process may take 30-40 seconds. The generated calibration information is saved on the windows directory in file KSCalibration.ini file.
- After calibration you should restart the KeyScan Imaging application (no need to restart the PC).
- If it is not the first time you install the software on the current PC you should select from KeyScan Imaging main menu <File><Settings><Update App. Path> in order to update the location of 3<sup>rd</sup> party applications on your system.

In case you have any installation problems please consult the “Installation troubleshooting” in section 2.7.

## **2.7. Handling Problems during Installation Process**

KeyScan team invested time and efforts to setup a smooth installation process, in case you experience any problem please consider the following comments, we believe that most problems may be resolved by the user following carefully the instructions below.

### **Installation Stage 2**

The KeyScan is connected to the PC with the KeyScan USB2 cable but the green LED on the rear of the KeyScan connector panel is not blinking

Try the following operations:

- Make sure the original KeyScan USB2 cable is being used and connected to a USB2 port on your PC.
- Detach and after 10-20 seconds reconnect the cable, no need to shutdown the PC, the LED should start blinking (it may take 10-30 seconds).
- If still do not blink restart the PC.
- If still do not blink try another USB port, if possible check the same port with another USB device to make sure the USB port on your PC is functional.

### **Installation Stage 3**

In case the software media is damaged download the KeyScan software from the KeyScan WEB site. It is recommended to check the KeyScan WEB for software updates.

### **Installation Stage 4**

When power adapter is connected, a red light should be seen when looking inside the document feeding slot, the red light should be ON for at least 30 seconds and turned off automatically sometime later.

If no red light appears then disconnect and reconnect the power adapter, recheck again for the red light. This light indicates that the scanner receives the 7v power from the power adapter and the scanner optical unit is functioning.

If the red light is still off check power outlet to make sure you do have power on that outlet, you should check it by connecting another instrument to the same outlet.

You should always use only the KeyScan original power adapter.

### **Installation Stage 5**

When trying to calibrate or scan, an error message that the scanner is not recognized or does not exist appears:

- Try to disconnect and connect the KS810 (both power and USB cables).
- If still not working try to restart the PC, after restart make sure the Green LED is blinking.
- If still not working-
  - Installation problem, try to reinstall the scanner software.
  - The USB cable is not the original USB2 cable supplied with the product, use only original cable.
  - A USB extension cable is connected, remove it.
  - Power adapter is not connected or other power failure problem.

### **Others problems you may experience:**

- The KeyScan keyboard does not function.
  - Make sure the KeyScan original USB2 cable is connected to KeyScan and to high speed USB2 port on the PC, (do not connect to external USB1.1 hub).
  - If Green LED on the rear connector panel of the KeyScan is not blinking disconnect the USB cable from the KeyScan and reconnect it after 5-10 seconds, the LED should start blinking and keyboard should be functional.
  - If still not blinking, disconnect both power and USB cable, reconnect first the USB cable, wait for the Green blinking light and than connect the power cable.
- Very slow scanning speed.
  - Most likely the KeyScan is connected to USB1.1 port instead of USB2 high-speed port.
  - KeyScan is connected to the PC through a USB1.1 external hub.
- Scanning produce vertical gray or color shadow lines across the whole image-
  - Open the scanner door and clean the scanner glass (above the feeding roller).
  - Recalibrate the scanner after cleaning its optical glass.
- When trying to scan a pop-up dialog box requests the user to perform calibration
  - Whenever the user attempts to start scanning and the calibration files KSCalibration.ini and KSCalibration.bin are missing (in the Windows directory) the software will prompt the user for calibration and will not start scanning.
  - Run scanner calibration.
- The scanner starts scanning or calibrating and stops in the middle without completing its function.
  - Check to make sure the scanner back door is closed and locked (its right back side should be aligned with the keyboard back frame), if the door is not locked the document sensor may detect “end of document” pre-maturely.
  - A low quality USB1.1 cable is used to connect the scanner to the PC instead of the original USB2 cable supplied by KeyScan, can cause unpredicted random errors.
  - Do not use a USB extension cable or external USB hub, connect the KeyScan to the USB2 ports on the rear connectors panel and not to the front USB connector panel.
  - Power problem, make sure the original KeyScan power adapter is being used
- The scanned image is not continuous and “broken” in certain points, or the same scanning function some times succeeds and other times fails:
  - Most likely you are using a USB1.1 connection to your PC:
  - Make sure your PC port is of USB2 type.
  - Make sure you are using the original KeyScan USB2 cable.
  - Make sure you do not use any USB extension cable.
  - Make sure your scanner is connected directly to the PC port and not to external USB hub, most likely you monitor USB hub or desktop USB hub are of USB1.1 type and not of USB2 type.

### 3. Introduction to Scanning-

#### 3.1. Calibration-

##### 3.1.1. When to calibrate:

The scanner should be calibrated whenever it is installed on a PC or when the operating system installation is updated. The calibration data is saved in two files KSCalibration.ini and KSCalibration.bin on the operating system main directory. The scanner should be calibrated when it is first installed or when the calibration file is erased or when scanned images contain vertical gray lines which are not part of the original scanned image.

##### 3.1.2. How to calibrate:

- Run KeyScan Imaging application software.
- Under <File> menu, choose <Calibrate Scanner> which will start the calibration process.

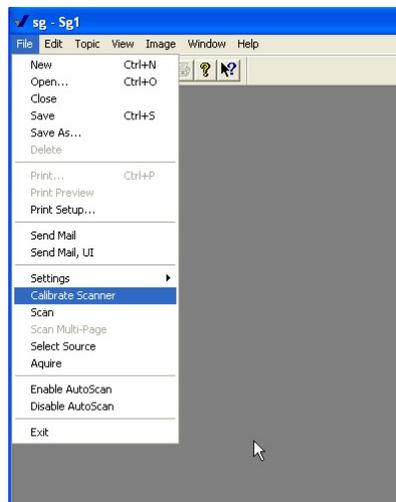


Fig. 3.1: Calibrate command

- When prompted, insert a regular A4 size white paper as calibration reference document. The scanned calibration paper should be aligned to the mark on the right side of the document feeding slot of the scanner.

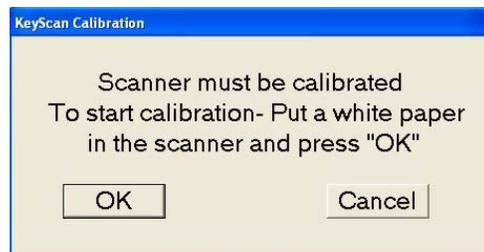


Fig. 3.2: Calibrate doc dialog

### 3.1.3. Automatic check and prompt for calibration:

When working with KeyScan KS810, KeyScan Imaging software monitors the existence of the calibration data file KSCalibration.ini.

When the software detects that the file is missing or its length is 0, it will automatically trigger the calibration process. Monitoring of the calibration file is done each time a new “Scanning User” activates the scanning software.

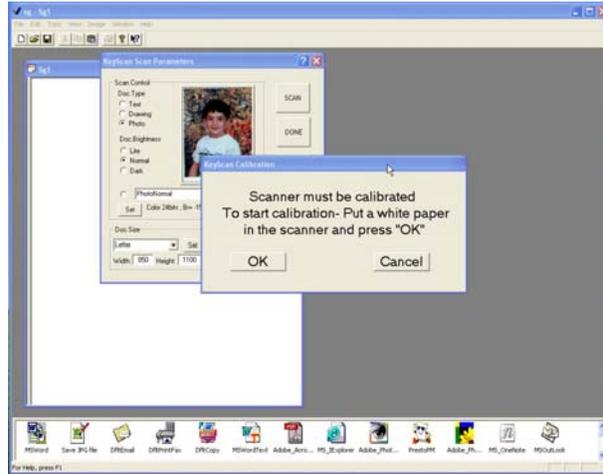


Fig. 3.3: Automatic calibration prompt

## 3.2. Scanning parameters considerations-

“KeyScan Imaging” application is designed to help the user get good scanning results with little effort.

The user should be aware of the meaning of various scanning parameters options.

Scanning dialog –



Fig. 3.4: Scan dialog

For “Scanning dialog” items and parameters details please refer to Chapt. 5.2.12, all the parameters considered here may be modified using the “Scanning Dialog”. Scanning dialog is divided into 4 sections:

- Scan control- Let the user select the image quality parameters, image Brightness, Contrast, Gamma and B&W threshold level.
- Doc Size- Let the user select the maximum document size for scan session.
- Output Resolution- Let the user select the scanned image resolution.
- Function Buttons- The function to be performed.

### **Considerations when choosing scanning parameters-**

- Image size, Color scanning versus Gray scale, do not scan high resolution if you do not really need it, scan Gray mode if you just need text.
- No need to scan in high resolution just for image displaying on PC monitor, 100-150 dpi is enough.
- No need to scan in high resolution and save it on file in JPG format with high compression factor which reduce image quality anyway.
- Translation to text (OCR), 300 dpi is good for A4 size document with reasonable font size, for small documents like business card which may contain small fonts use 600 dpi resolution.
- Resolution higher than 300/600 dpi- When the user request to scan in resolution between 100dpi to 300dpi the KeyScan driver scans 300dpi and if requested reduces the output to required resolution. For any resolution above 300dpi the KeyScan driver scans in 600dpi and transform to the required resolution. If possible user should use 300dpi or 600dpi since these are the native resolutions of the driver.

### **Following are few calculation examples-**

How to calculate image size (Bitmap file format with no compression):

Image size = BytesPerPix \* ImageWidth \* DPI \* ImageHeight \* DPI

BytesPerPix is 3 for 24 bit Color and 1 for 8 bit Gray images

A4 size image: ImageWidth is 8.5” and ImageHeight is 11”

600 DPI color image size will be  $3 * 8.5 * 600 * 11 * 600 \sim 100$  MBytes

150 DPI color image size will be  $3 * 8.5 * 150 * 11 * 150 = 6.311$  Mbytes

Gray images files will be 1/3 size of the above image size.

File size can be reduced dramatically by saving images in JPG compressed format but high compression factors may result poor image quality which do not justify high resolution scanning. In most cases there is no reason to scan a document in high resolution of 600dpi and than save it with high compression JPG to reduce file size since we will loose the high resolution quality any way. Medium and low JPG compression will still reduce file size but will have much smaller affect on the image quality.

### 3.3. Scan one page-



Fig. 3.5: Scan Dialog

- On Main Menu, select <File> <Scan> and get the Scan Dialog.
- Use Scan Dialog to setup scan parameters.
- Press [SCAN] button to perform scanning.
- When finished scanning press [DONE] button to close the scan dialog.

### 3.4. Abort Scanning (paper jam)-

- Any time during the scanning process the user can [ABORT] the scanning function.
- Abort command can be done by the following means-
  1. Press [ABORT] button on the scan dialog.
  2. Press [x] close-window on the upper-right corner of the scan-dialog
  3. Double click the {ESC} keyboard key.

### 3.5. Output file formats-

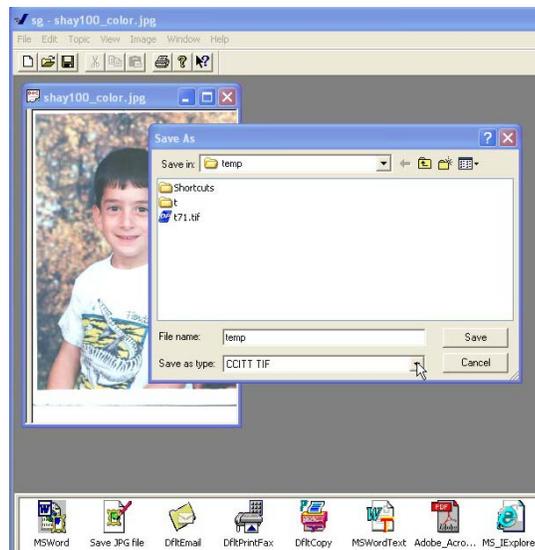


Fig. 3.6: Save As dialog

- On main menu select <File> <Save As>.
- Save As dialog box will pop-up (see fig 3.6) and let the user select the save location the save file name and file format.
- If the user selects a compression file format such as JPG, he can select Low/Medium or High compression modes, low compression will result a larger file than high compression but it will be of better quality image.

### 3.6. Scan number of pages-

KeyScan Imaging can produce and handle multiple images document files, the standard file format which can handle multiple images is the TIF file format. Using KeyScan the user can scan several images into the same document and than save the document as a single TIF file which contains multiple images.

User can also open such file, browse through the images using the {Page Up} and {Page Down} keys on the keyboard or delete images from such a file using the {Delete} keyboard key.

The user should be aware that most applications will be able to read only the first image in a multiple image TIF format.

#### 3.6.1.Scan to a new document-

- On main-menu select <File> <Scan> to create a new document and activate the scanner.
- Press the [SCAN] button to scan a new image,
- If the user wishes to scan additional images into the same document, whenever the current scan is finished, instead of pressing the [DONE] button, the user should place the next image in the scanner and press [SCAN] button and repeat it until finished scanning all images.
- On Scan window the user will see just the last scanned document, please refer to Browse multi-page document for how to handle the multi-image document.

#### 3.6.2.Scan to the same document-

- In order to scan a new image into existing document and make this document a multi-page document, do the following steps.
- Open the document and select its window as the current document.
- On main-menu select <File> <Scan Multi-page>, this function will open the currently selected document instead of creating a new one.

#### 3.6.3.Browsing multi-page document-

- The {Page Up} and {Page Down} keyboard keys can be used to browse the images of multi-page document.
- The {Delete} keyboard key can be used to delete image from multi-page document.
- Main-menu <File> <Save As> can be used to save multi-page document as a multi-page single file. Other file formats will produce multiple indexed files each contains a single document.

### 3.7. What can the user do with scanned image-

#### Process the images

Keyscan Imaging application has an enhanced set of image processing functions Which allow the user to perform various functions on the image.

- **Modify image geometric parameters-** Using KeyScan imaging the user can resize the image, resample it to new resolution, add frame around the image, rotate the image and more. For complete details please refer to chapter 5 “User Interface”.

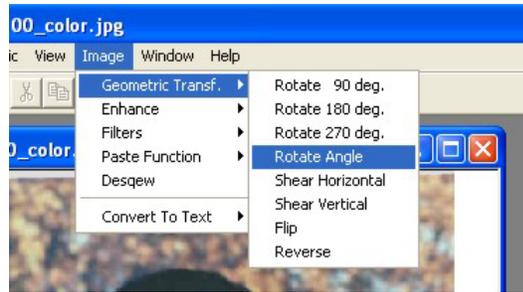


Fig. 3.7: Geometry parameters

- **Enhance image quality-** Using KeyScan Imaging the user can enhance image quality using various functions and tools such as image histogram etc. For complete details please refer to chapter 5 “User Interface”.

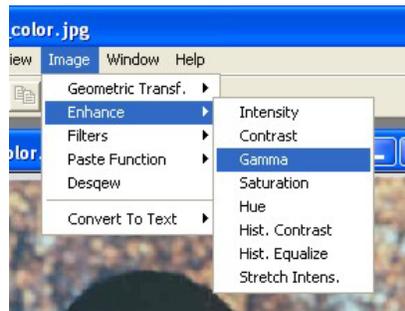


Fig. 3.8: Image enhancement

- **Merge images-** Using KeyScan Imaging the user can combine / overlap images controlling the interaction functions between the merged images pixels. For complete details please refer to chapter 5 “User Interface”.

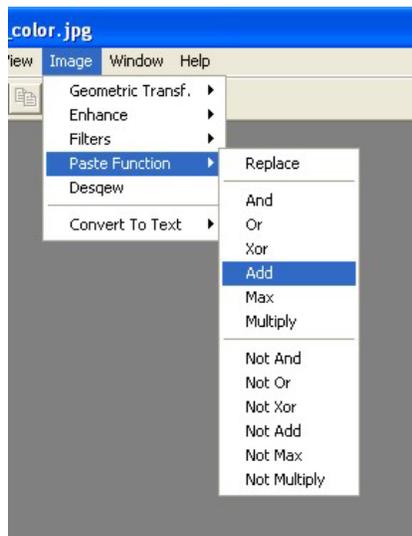


Fig. 3.9: Image paste

- **Artistic processing-** Using KeyScan Imaging the user can add artistic appearance to the scanned images. For complete details please refer to chapter 5 “User Interface”.

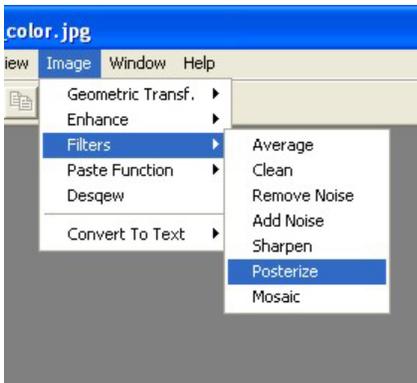


Fig. 3.9: Image Filters

- **Translate document image into compound document (text+images)-**  
User can process scanned image using integrated OCR engine and produce compound document of image and text in MSWord or Adobe pdf or HTML file formats



Fig. 3.10: Image Convert to Text

### Save images to file

- The user can save images to file in a wide range of image file formats.
- Multiple page documents can be save as multiple-page files in compressed and uncompressed single TIF formatted file, or compressed / uncompressed indexed files for single image file formats.

### Transfer images to other applications

KeyScan Imaging let the user transfer images to other applications using several mechanisms:

#### 1. Stand alone interactive scan mode

User can transfer scanned or any document opened by KeyScan Imaging to other applicants through the Application-bar positioned on the bottom of the KeyScan Imaging window.

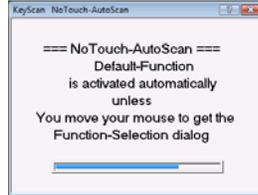
- Select the window of the document to be transferred
- Click on application-bar, on the icon of the application that should be activated with the required document.



Fig. 3.11 : Application-Bar

## 2. NoTouch-AutoScan modes of operations

NoTouch-AutoScan Timeout Bar Box is automatically activated when the user insert document to be scanned into the scanner feeding slot.



If the user moves the mouse over the Timeout Bar Box he indicates to NoTouch-AutoScan that he wishes to use AutoScan mode of operation to select the actual function to be performed. As a result the Timeout Bar Box is replaced by the AutoScan function selection dialog.

- User select the target application on the AutoScan function selection pop-up dialog, this will also trigger the scanning operation.
- When finish scanning the selected application/function will be activated with the selected document.



Fig. 3.12 : AutoScan dialog

## 3. AutoScan to current active application

This is a special mode of AutoScan where the scanned image is automatically pushed to the last active application to the current opened document cursor position.



Fig. 3.13 : AutoScan image to current application

## 4. TWAIN source mode

KeyScan Imaging contains a built-in interface which enables a TWAIN compliant application to use it as a TWAIN data source. As such the KeyScan Imaging TWAIN data source is a complete image processing application and not just a scanner interface as any other TWAIN scan source.

## 5. Shell command line mode

KeyScan Imaging contains a built-in command line interpreter which enables 3<sup>rd</sup> party applications to activate it using the SHELL command line interface.

## 6. Icon command line activation mode

KeyScan Imaging contains a built-in command line interpreter which enables end user and integrators to add command line instructions to Icons producing application specific Icons. For example the user can define a single click icon for scanning and sending fax or email.

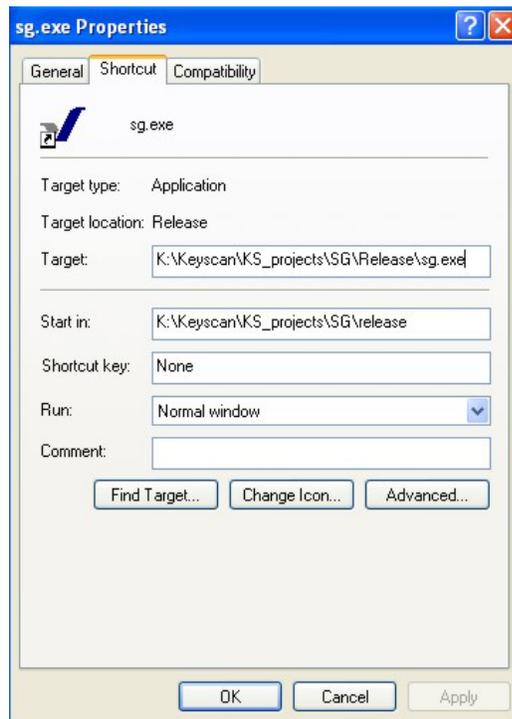


Fig. 3.14 : Icon command line setting

## 4. Tutorials-

This chapter let KeyScan user to start using the scanner and the software without getting into details and definitions, it is intended to show the user how simple it is to activate the scanner and get results. In case there are details which are not completely clear, the user can go on with the execution of the examples or get to the relevant chapter and learn the missing details. In any case the examples are designed to let the user go through without the need for complete understanding of each detail.

### 4.1. Scan one image to file-

#### Use KeyScan Imaging application to scan a single page document.

- Activate KeyScan Imaging application by clicking on its desktop icon.
- Select a document of your choice and scan it by selecting from KeyScan Imaging menu <File><Scan>, the scanning user interface should pop-up.
- Use the scanning user interface to perform scanning of a single-page document, press [SCAN] button on the scanning dialog to start scanning.
- While scanning you can see the image developing on the preview screen, you can also see the status window which changes to Red during scanning and show you the scanning steps, when finished scanning it will change to Green.
- After scanning is finished and status window shows “Finished” in Green color, press [DONE] button on the scanning user interface to close the scanning operation.
- At this point you can perform image processing on the scanned document.
- When finished, select from main menu- <File><Save As> and put the file name and image file format (file extension) to be used for saving the image.

### 4.2. Scan multiple images to single file-

#### Use KeyScan Imaging application to scan multi-page document.

- Repeat step 4.1 above but instead of pressing [DONE] after the first scanned page, place another page and press [SCAN] again, the new scanned image will be developing in the same window over the previous scanned image. When finished scanning the second image press [DONE].
- The document window shows the last scanned page but represents a two page document, you can navigate between the documents by pressing the keyboard (Page-Up) and (Page-Down) keys.
- Save the document to file by selecting <File><Save As>, on the file type select TIF file type. Since TIF file format can accept multiple images inside a single file KeyScan Imaging will create a single TIF image file and save into the file the two images. User should be aware that most imaging software applications will not support and will not be able to read the second image but only the first image in the saved file, KeyScan imaging will read both.

### 4.3. Scan multiple images to multiple files-

#### Use KeyScan Imaging application to scan multi-page document.

Repeat the steps of 4.2 above but when saving the image to file select JPG format instead of TIF format.

Since JPG format do not accept multiple images in a single file, KeyScan Imaging will produce 2 separate files using the file name the user selected and add index to that file name.

### 4.4. Color copier-

Color copier function is simulated by KeyScan Imaging by scanning a document and sending the scan results to a printer. This function can be performed only if the user PC has access to a printer. During installation process KeyScan Imaging will try to locate the user’s default printer to be used by copy function. At any time the user can reactivate this search for printer process by selecting <File><Settings><Update App. Path>

Performing Color copy function-

- Use KeyScan Imaging to scan a document.
- When done select the scanned document window
- Click on the applications bar at the bottom of the KeyScan Imaging, on the Icon of the “DfltCopy”
- The scanned document will be send and printed on the default printer.
- Same function can be done using the AutoScan interface.

#### **4.5. Send FAX-**

The process of sending a fax is very similar to “Color Copy” described in section 4.4 above. In fact KeyScan Imaging is using the FAX function “print” interface to “print” the document to the fax instead of to a printer.

In order to use the fax function the user must have a fax modem installed or built into his PC system and install fax software or activate the Windows XP built-in fax interface.

Same function can be done using the AutoScan interface.

#### **4.6. Send Email-**

- Use KeyScan Imaging to scan a document.
- When done, Select from menu- <File><Send Mail>, KeyScan will activate your email software and attaché the scanned image to a new email message using TIF as its default file format.
- Instead the user can select from menu- <File><Send Mail, UI> anf KeyScan will prompt first for the file name and file format to be used on the attachment.

#### **4.7. Use KeyScan Imaging application as an enhanced TWAIN driver**

Run Photoshop application or any other application which can use TWAIN interface to import images.

From Photoshop menu, select <File><Import>, a pop-up window will show the list of available TWAIN sources, select KS810 which is the KeyScan TWAIN source (Scanner).

The complete KeyScan Imaging application is activated as a TWAIN interface.

Use KeyScan Imaging to scan a document. When finished scanning press [DONE], the KeyScan Imaging application will be removed and the scanned image transferred to PhotoShop.

Instead of pressing the [DONE] button the user can use any of the KeyScan Imaging functions to modify and enhance the scanned image before transferring it to the calling application.

For example mark a region on the image using the mouse and than select <Edit><Cut New> the selected region will be extracted as a new image, deleting the old one.

Press [DONE] button, KeyScan Imaging will disappear and the new image transferred to Photoshop.

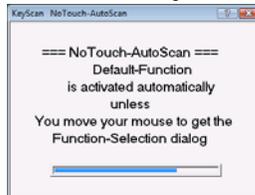
## 4.8. Introduction to working with KeyScan NoTouch-AutoScan-

### What is KeyScan NoTouch-AutoScan?

NoTouch-AutoScan has preset of 15 functions, the user can redefine each of these functions and select one of them as its default function.

When NoTouch-AutoScan is enabled, it is activated automatically by the insertion of a document into the scanner feeding tray. It can proceed with the scanning process in two modes, NoTouch mode and AutoScan mode.

- When a document is placed on the scanner feeding tray, it is sensed by NoTouch-AutoScan.
- A timeout dialog pops-up (its duration can be adjusted). \



- If during the timeout process the user does not move its mouse cursor over the dialog, NoTouch-AutoScan will proceed with **NoTouch** function, which proceeds with the default pre-set function.
- If during the timeout the user moves the mouse cursor over the timeout dialog, the KeyScan will proceed with **AutoScan** which allows the user to select one of the 15 pre-set functions.

This example will demonstrate:

- How to activate the Auto-Scan feature of KeyScan Imaging system
- How to check if Auto-Scan is active
- How to disable Auto-Scan
- How to use Auto-Scan to scan a photo into the current active “MS-Word” document.

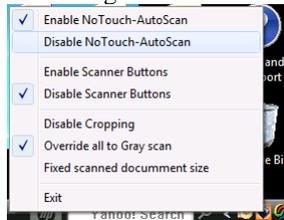
### How to activate NoTouch-AutoScan:

NoTouch-AutoScan feature of KeyScan Imaging system can be setup to start running when the computer is turned on. For this feature the AutoScan shortcut icon should be placed on the “Startup” directory, please check with you system administrator for more details.

Once activated, the NoTouch-AutoScan orange icon should appear on the active applications bar (Icon Tray) on the right bottom side of the screen



Clicking on this icon will open a control dialog which let the user control the NoTouch-AutoScan operation



If Auto-Scan is not running, it can be activated by performing the following steps-

- Run the KeyScan Imaging application by double clicking the SG.EXE icon



- From file menu <File> select the <Enable Autoscan>.
- Within few seconds a message box should pop-up on the screen “KeyScan Scanner is connected”, indicating the Auto-Scan started to run and checked that the scanner is connected.

- If the above message does not appear within 20-30 seconds, the following message should appear after a few more seconds- “Failed to detect KeyScan scanner, Do you wish to abort Auto-Scan function?” if “Yes” the Auto-Scan will continue to run and will detect the scanner when plugged-in and will display the message “KeyScan scanner is connected”. If select “No”, Auto-Scan will stop running.
- The user can activate the NoTouch-AutoScan by clicking on its icon placed on the desktop display-



### How to check if NoTouch-AutoScan is active:

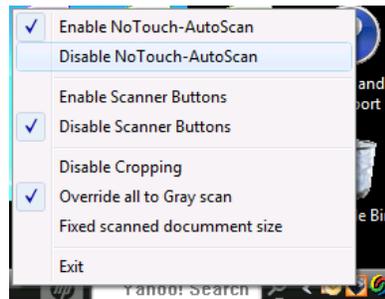
If the NoTouch-AutoScan is active its orange icon should be placed on the active application tray (Icon Tray) on the right-bottom corner of the monitor.

### How to Deactivate NoTouch-AutoScan:

- Click on the NoTouch-AutoScan icon located on the Icon Tray on the right-bottom corner of the monitor



- The control dialog is opened-



- Select “Exit”.
- Another option to deactivate the NoTouch-AutoScan is:
- Run the KeyScan Imaging application by double clicking the KS.EXE icon.
- From file menu <File> select the <Disable Auto-Scan>.
- Within few seconds a message box should pop-up on the screen “Do you wish to abort Auto-Scan function” the user can select “Yes” to quit the Auto-Scan or “No” to continue the Auto-Scan.

### How to Enable/Disable NoTouch-AutoScan function:

Once NoTouch-AutoScan is active, we have its icon placed on the Active applications bar (Icons Bar).

- Click on the NoTouch-AutoScan icon placed on the active applications bar



- On the popup menu select “Enable NoTouch-AutoScan” to enable its function.
- Select “Disable NoTouch-AutoScan to disable its function.
- Please note that scanner buttons scanning functions and NoTouch-AutoScan scanning functions can not be active at the same time

#### 4.8.1. Word-processor document example: NoTouch-AutoScan to Microsoft Word document-

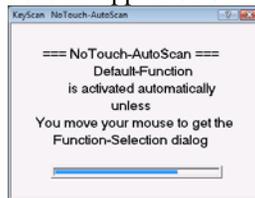
How to AutoScan into Microsoft Word document-

- The NoTouch-AutoScan application must be running, see (4.7) on how to activate NoTouch-AutoScan and how to check that it is running.

- The MS-Word application must be active as the current used application (its window is the front window).
- The required document must be opened and the cursor positioned where the scanning output should be placed.

Autoscanning into MS-Word's opened document is design to let the user place the scanning output in its currently opened MS-Word document right where the cursor is positioned without having to leave its current Word application.

- Make sure NoTouch-AutoScan is active and enabled.
- Open an MS-Word document.
- Place the cursor between the two lines where you wish to insert scanning output.
- Insert document to scanner feeding slot.
- NoTouch-AutoScan Timeout Bar Box should appear on screen.



- Move the cursor over the Timeout Bar Box, you should do it within the timeout period. This indicates that you wish to override the NoTouch default operation and get to AutoScan. AutoScan will replace the Timeout Bar with function selection menu.

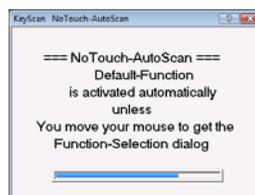


- Select "Image to current application" entry on the function selection menu. Do not press any more on the mouse buttons, the rest of the process will be carried out automatically.
- After selection of the function on the function selection menu, the scanner starts scanning, you should see the scanned image on the scanning window.
- Scanner finishes scanning and removes its user interface and scanned image from screen.
- The scanned image is inserted automatically to the MS-Word document at the cursor position.

#### 4.8.2. Document example: AutoScan to PDF-

To AutoScan into Adobe Acrobat document-

- The NoTouch-AutoScan application must be running, see (4.7) on how to activate Auto-Scan and how to check that it is running.
- Place a document on the scanner feeding tray, the NoTouch-AutoScan Timeout Bar Box should be displayed.



- Within the timeout move the cursor over the Timeout Bar, this will activate the AutoScan process and replace the Timeout Bar with AutoScan function selection pop-up menu.



- On AutoScan popup menu select the PDF function. Scanner will scan the document and create a searchable PDF file.

## 5. User Interface for interactive operation–

### 5.1. Introduction-

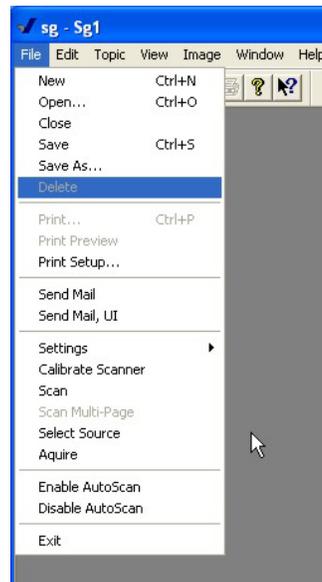
Interactive operation covers any operation and function of KeyScan Imaging software, done by the user using his keyboard and mouse and the KeyScan application's user interface.

As we will see later in chapters 6-10 there are other ways to activate and control the KeyScan Imaging software.

### 5.2. <File> Menu-



Fig. 5.1: File menu



#### 5.2.1.<File> <New> Menu-

Create a new and empty bitmap.

The default properties of the new bitmap are defined by the SG.INI file and can be modified by the user.

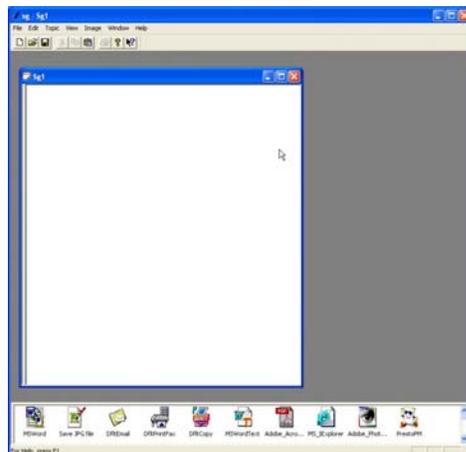


Fig. 5.2: <File> <New> menu

5.2.2.<File> <Open> Menu-  
Open existing file.

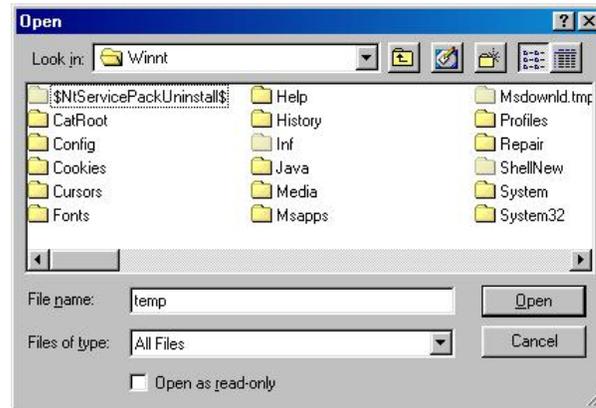


Fig. 5.3: <File> <Open> menu

5.2.3.<File> < Open Desktop> Menu- (Not available on KeyScan Imaging)

Open the desktop directory and the desktop window. Desktop directory is used as the default directory to save all scanned images. It may be changed each time the user start the program and choose a different desktop directory. If the desktop window is opened the software will go over all the image files in the desktop directory, produce thumbnail images of the files and show them on the desktop window.

5.2.4.<File> <Close> Menu-

Close current file without saving changes.

5.2.5.<File> <Save> Menu-

Save image to current file, in the original file format.

5.2.6.<File> <Save As> Menu-

Save image to a file, set output file name and format by File I/O dialog.

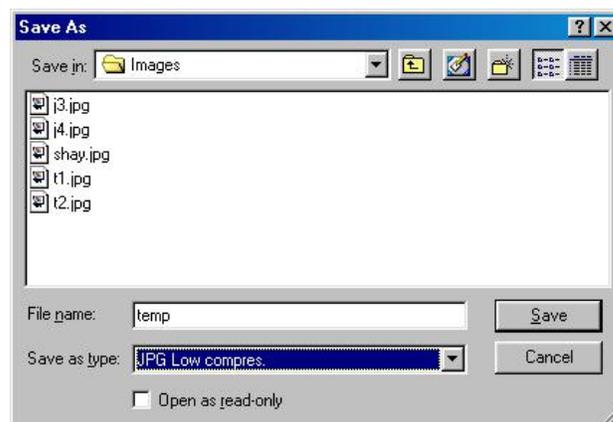


Fig. 5.4: <File> <Save As> menu

5.2.7.<File> <Delete> Menu-

Delete the current file and close its window.

5.2.8. <File> <Print> Menu-  
Print document

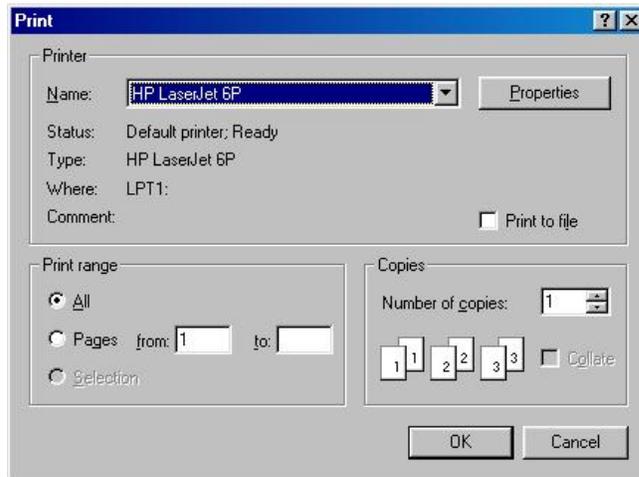


Fig. 5.5: <File> <Print> menu

5.2.9. <File> <Print Preview> Menu-  
See printing page layout and image before printing the document.

5.2.10. <File> <Print Setup> Menu-  
Setup printing parameters.

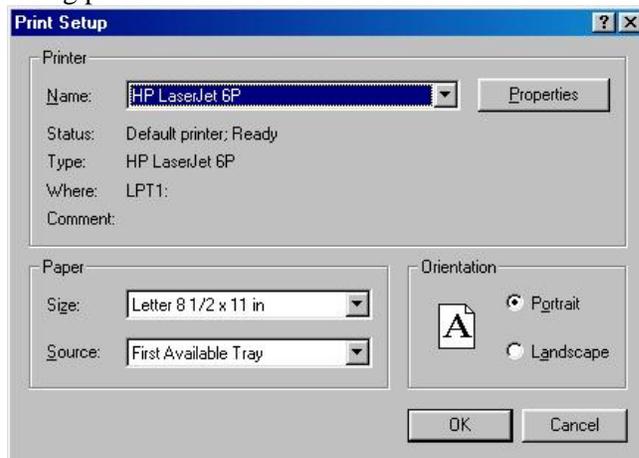


Fig. 5.6: <File> <Print> menu

5.2.11. <File> <Send Mail> Menu-  
Send current file by Email.

- Activate the Email.
- Create a new mail message.
- Attach the image file to the mail message.

5.2.12. <File> <Settings> Menu-  
Settings and changing of application parameters saved in SG.INI initialization file.

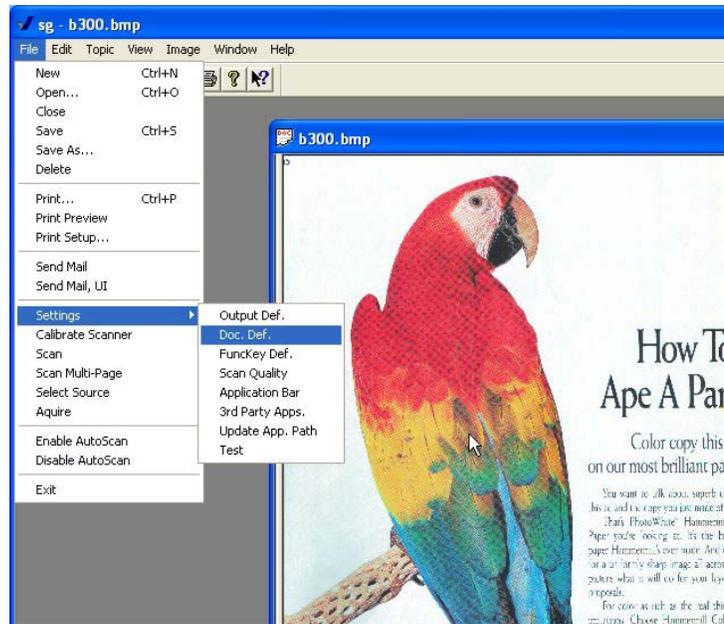


Fig. 5.6: <File> <Settings> menu

- **Output Def.-** Activates the “Output Device Setting” dialog which covers various processing/handlig parameters. For more details see Chapt: 11.2.2

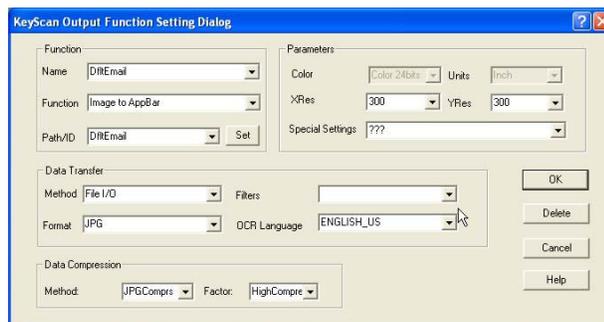


Fig. 5.7: <File> <Settings> <Out Def.> menu

- **Doc. Def.-** Activate the document definition dialog to set the document parameters (such as units and dimensions). For more details see Chapt: 11.2.3



Fig. 5.8: <File> <Settings> <Doc Def.> menu

- FuncKey Def.-** Activates the “auto-scan” settings dialog, which lets the user define the functions that can be activated by “Auto-Scan” pop-up dialog.  
 For more details see Chapt: 11.2.1

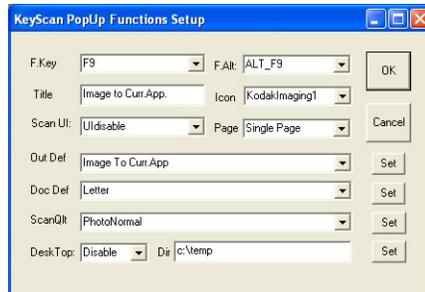


Fig. 5.9: <File> <Settings> <FuncKey Def.> menu

- Scan Quality-** Activates the Scan Quality setting dialog, which let the user setup various scanning parameters such as color mode, brightness, contrast etc.  
 For more details see Chapt: 11.2.4

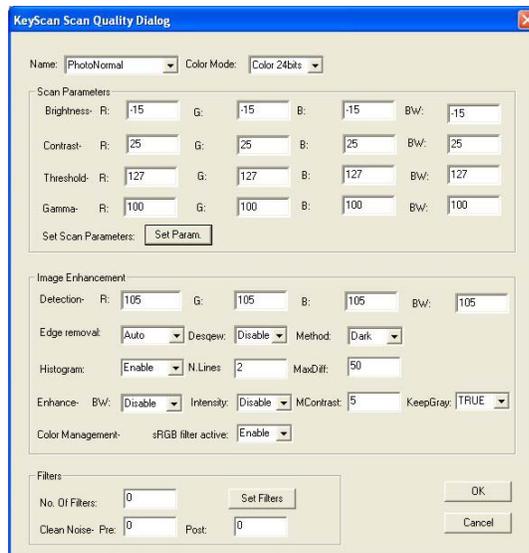


Fig. 5.10: <File> <Settings> <Scan Quality> menu

- Application Bar –** Activates the Application bar dialog, which lets the user setup the applications he can activates by the KeyScan “Application Bar”.  
 For more details see Chapt: 11.2.5

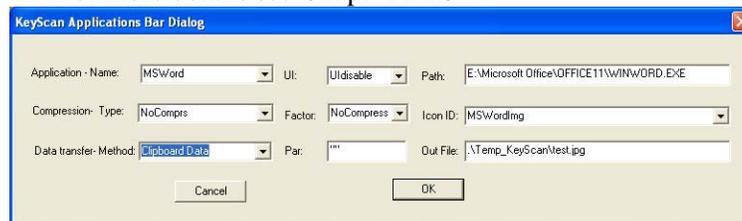
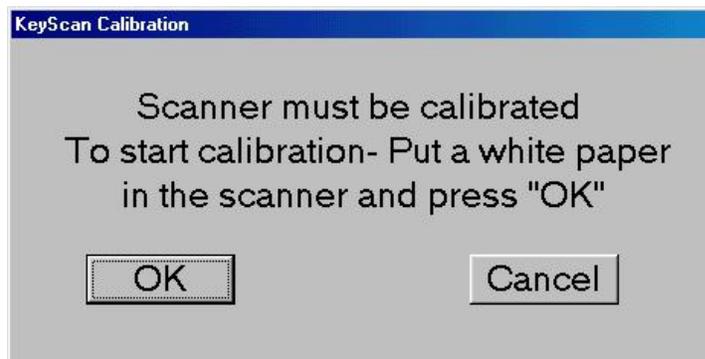


Fig. 5.11: <File> <Settings> <Application Bar> menu

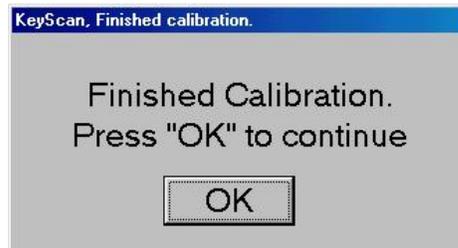
- **3<sup>rd</sup> Party Applications** – Activates update process which goes over the list of 3<sup>rd</sup> party applications defined in SgApps.ini and update the applications path according to registry information. This information is used by the KeyScan Application-Bar AutoScan and other methods to activate applications.  
For more details see paragraph: 11.2.6
- **Update Applications Path**– Activates update process which goes over all tables in the Sg.ini which may use the application path from SgApps.ini and update the relevant applications entries.

5.2.13. <File> <Calibrate Scanner> -

Calibrate the scanner. A dialog will appear asking the user to insert a blank white A4 size paper for scanner calibration. Any white paper used for printing is sufficient as long as it is clean and do not carry any folding signs.



When calibration process is completed the following message will appear:



### 5.2.13. <File> <Scan> Menu-

The <Scan> command under <File> menu starts the scanning process- “Scan Dialog” pops up on the screen.



Fig. 5.12: <File> <Scan> Dialog

- User may change scanning parameters using the “Scan Dialog”.
- User starts scanning by pressing the [Scan] button.
- Abort scanning by pressing [Abort] button or clicking twice on {ESC} keyboard key or clicking on the X sign on the upper right corner of the scan dialog.
- Once scan is complete the user can finish scanning process with the <Done> button.
- If instead of [DONE] the user places another document and press again [SCAN] button, he will scan the new image into a new page on the same document and will produce a multiple images document.

#### **Scan dialog is divided into 4 sections-**

- Scan Control settings
- Document size
- Output resolution
- Function buttons

## Scan Control section-

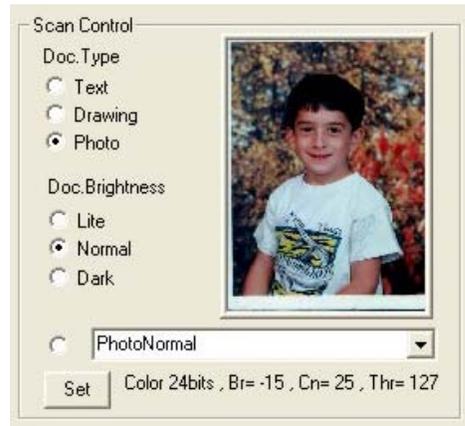


Fig. 5.13: Scan Control section in Scan dialog

The scan control section defines the following scanning parameters:

Color mode: Color- 24bit output, Gray- 8 bit output and B&W- 1 bit output

Brightness: in the range of -1000 to +1000

Contrast: in the range of -1000 to +1000

Gamma: in the range of 0 to 255

B&W threshold: in the range of 0 to 255

The scan control manage up to 15 predefined settings of the above parameters, the first 9 settings are the combinations of document type-

Photo = 24 bit color

Drawing= 8 bit Gray

Text = 1 bit Black and White (B&W)

Per each of the above three options the user can select 3 different settings of Brightness/Contrast/Gamma parameters, defined by Doc. Brightness-

Light= To get a lighter document (in case the original is too dark)

Normal= To get normal document, closer to the original scanned one.

Dark= To get a darker document (in case the original is too light).

Instead of the above presetting selection the user can select any of the 15 settings (including the 9 mentioned above) by their names.

When the user selects settings the bottom line displays the selected setting parameters values and the small photo on the dialog will be updated according to the selected parameters.

The [SET] button on the Scan Control section let the user modify any of the 15 settings to his own required values, this kind of setting will last as long as the KeyScan Imaging application is running, the modifications are not saved to disk so on the next time the KeyScan Imaging application is activated the user will get back the original settings.

(In case the user wishes to modify the settings permanently he must get to the [SET] button using the Main Menu <File> <Settings> <Scan Quality dialog>)

### Pressing [SET] button-

The KeyScan Image Capture parameters dialog pop-up

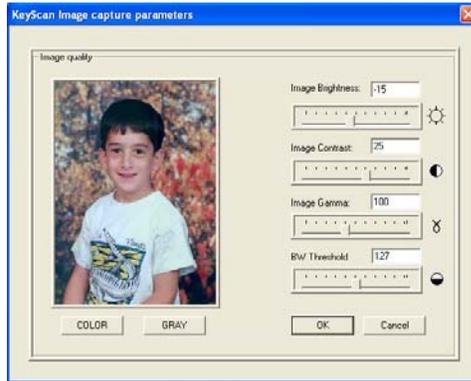


Fig. 5.14: Scan Set capture parameters

The dialog image and sliders will reflect the selected pre-setting.

The user can modify the settings by using the sliders or simply writing the required values. Whenever any of the values changes, the results are reflected on the small image window. Switching between color and Gray modes is done by the [COLOR] and [GRAY] buttons while switching to Black and White is done by changing the BW Threshold slider.

When finished the user press [CANCEL] button to discard the changes or [OK] to accept them, if pressed OK the change will get into effect on the next scan.

### Document Size section:



Fig. 5.15: Doc Size settings

This section of the scan dialog let the user define the max size of the document by selecting one of the pre-defined document size names or directly writing the required size in hundreds of Inch.

### Output Resolution section:

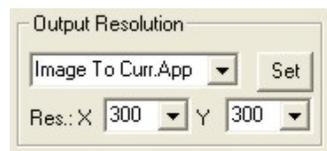


Fig. 5.16: Output resolution settings

This section of the scan dialog let the user define the scanning resolution by selecting one of the pre-defined names or by writing the required resolution in DPI.

### Scan dialog Buttons section-



- <SCAN> button: Start scanning using current parameters. Each time we press <SCAN> button the application scans the document and create additional image in the current document. A document can contain multiple image, and the user can browse through them by pressing <Page-Up> or <Page-Down> on the keyboard.
- <DONE> button: Finish scanning into the current document and remove the scanner interface from the screen.
- <ABORT> button: Abort current scanning. Pressing the <ESC> keyboard key will have the same effect.

### Scan Status window:

This window show the status of the scan process, When green the scan process is not active and any of the above 3 buttons can be used. When scanning this status window turn to Red color and display the function performed by the scanner. As long as the status window is Red, only the [ABORT] button should be used if required other buttons (scan and done) will not have any effect and be ignored.

#### 5.2.14. <File> <Scan to Current Doc> -

Similar to <Menu> <Scan> operation but instead of producing a new window and a new document it will use the current selected document and convert it to a multi-image document and save the new scanned image into the same document along with its current image(s). for more details see “Multi-Image Documents and file formats”.

5.2.15. Select Source (TWAIN scanners interface) –  
This option is not available on KeyScan Imaging.

5.2.16. Acquire (TWAIN scanners interface) –  
This option is not available on KeyScan Imaging.

5.2.17. Enable NoTouch-AutoScan –

Enable “NoTouch-AutoScan” modes.

The software will try to communicate with the KeyScan scanner.

If communication is successful than within 2-5 seconds a popup dialog should appear letting the user know that the KeyScan NoTouch-AutoScan modes are active.



Fig. 5.17: Enable AutoScan

If no communication then a pop-up message will appear letting the user know that the communication with KeyScan scanner failed.



Fig. 5.18: AutoScan failed to detect the scanner

Should the user press the [NO] button, the KeyScan AutoScan software remains active and once the scanner is connected it will be detected by the AutoScan software which will display the following pop-up dialog-

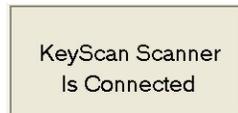


Fig. 5.19: KeyScan scanner detected

5.2.19. Disable NoTouch-AutoScan –

Disable NoTouch-AutoScan modes.

The following popup message will appear on the PC monitor-

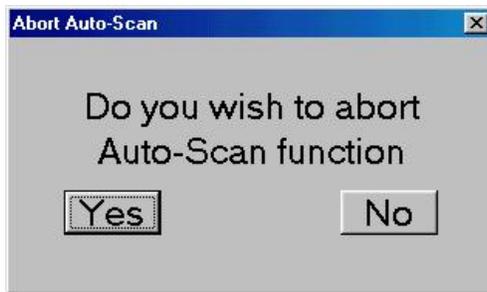


Fig. 5.20: Abort AutoScan

#### 5.2.20. Enable Scan Hot keys–

By default the 4 hot-keys on top of the scanner function as multimedia function keys. When KeyScan imaging application is active we can convert these key into scanning function keys.

#### 5.2.21. Disable Scan Hot keys–

Disable the scanner hot keys and convert their finctions to multimedia keys.

### 5.3. Handling Regions-

A “Region” is a rectangular segment of the document image, the region does not exist in the document itself, it is an add-on tool of KeyScan Imaging which let the user manipulate rectangular portions of the document image.

At a given point there is no more than a single region defined per each document, there is no relation between regions of different documents.

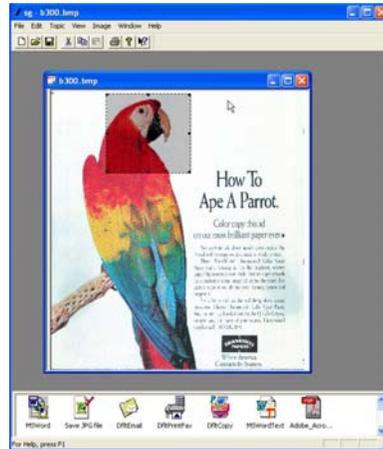


Fig. 5.21: Image rectangular region

#### 5.3.1. Create a region-

A region can be created only over an open document window.

- Open (or scan) a document
- Place the cursor over any point of the document and press the left mouse button.
- Keep the left mouse button pressed while dragging the mouse over the image window.
- A rectangular shape will be formed over the image between the starting point and current mouse position, this is the region area.
- Release the mouse left button.
- The rectangle drawn over the image is the newly defined region.

#### 5.3.2. Change region size and position-

- Change region position:  
When the cursor is moved over the region area it changes its shape from Arrow to cross.  
Move the cursor over the region until its shape is changed to cross.  
Press down the mouse left button and drag the region with the mouse while the left button is pressed
- Change region size:  
When the cursor is moved over the region contour lines its shape is changed from a single arrow to small double side arrow, at this point press the mouse left button and increase/decrease the region area.

### **5.3.3. Change region area to interior/exterior-**

- After a region is created it becomes by default “Interior” region, the region area is the interior portion of the region rectangular border line.
- A single left mouse button click outside the region rectangle will convert the region from “Interior” to “Exterior”, meaning- the region area is all the image area outside of the rectangle.
- A single click inside the rectangle will convert back “Exterior” region into “Interior” region.

### **5.3.4. Terminate region-**

A single left mouse button click inside the region rectangle of “Interior” region or outside the rectangle of “Exterior” region will terminate the region definition and its rectangle will be removed from the image.

## 5.4. Edit Menu-

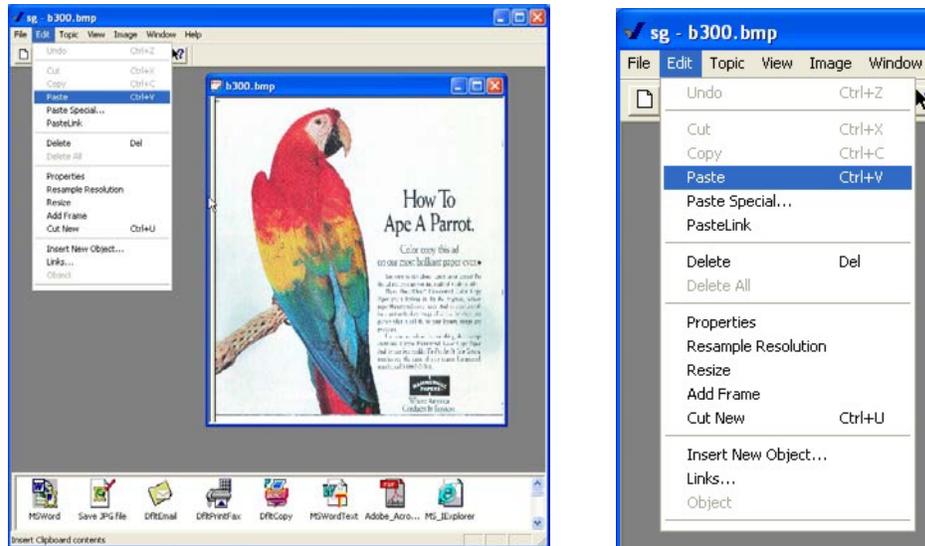


Fig. 5.22: KeyScan Imaging EDIT menu

### 5.4.1.<Edit> <Undo> -

Restore image to its state before the last modification, user should be aware that not all modifications are reversible.



Fig. 5.23: KeyScan Imaging EDIT menu

### 5.4.2.<Edit> <Cut> -

Cut a region from the document.

- Define a region and place it over the document area you wish to cut.
- Select Main-Menu <Edit> <Cut>
- The region area is being cut-off the image leaving White space.
- The region image removed from the document is placed on the clipboard can be placed back to any application using “Paste” command.

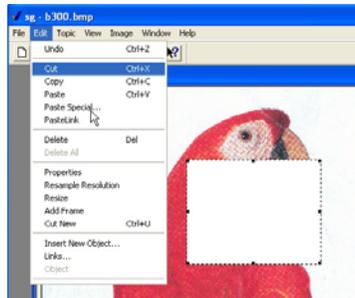


Fig. 5.24: KeyScan cut image EDIT menu

### 5.4.3.<Edit> <Copy> - Copy a region of document



Fig. 5.25: KeyScan copy image EDIT menu

- Define a region and place it over the document area you wish to copy.
- Select Main-Menu <Edit> <Copy>
- The region area is being copy onto the clipboard, the original image remains unaffected.
- The region image copied from the document is placed on the clipboard and can be placed back to any application using “Paste” command.

### 5.4.4.<Edit> <Paste> -

Paste image (placed on the clipboard by copy/cut command) into a region defined on the current document.

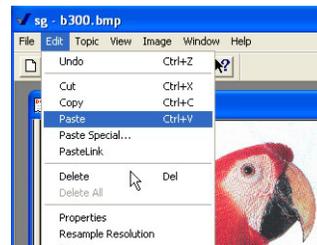


Fig. 5.26: KeyScan Paste image EDIT menu

- Copy or cut image using any application into the clipboard.
- Define a region on the target document.
- Select from Main-Menu <Edit> <Paste> command, the clipboard image will be merged with the current region area.
- Refer to <Image> <Paste Functions> for the options of merging the two images.



Fig. 5.27: KeyScan Paste image EDIT menu

5.4.5.<Edit> <Paste Special> -  
Not Active on KeyScan Imaging.

5.4.6.<Edit> <Paste Link> -  
Not Active on KeyScan Imaging.

5.4.7.<Edit> <Delete> -

Delete document from application, this command will not delete the relevant file if there is a permanent file saved on the disk.

In case of multi-page document this command will delete the current page and continue to show the document, displaying the next page of the document.

5.4.8.<Edit> <Delete All> -

Delete document, if the document is a multi-page document it will delete all the pages of the document and remove it from the application.

5.4.9.<Edit> <Properties> menu-

Display current image properties:

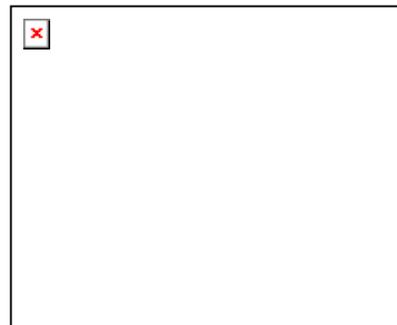
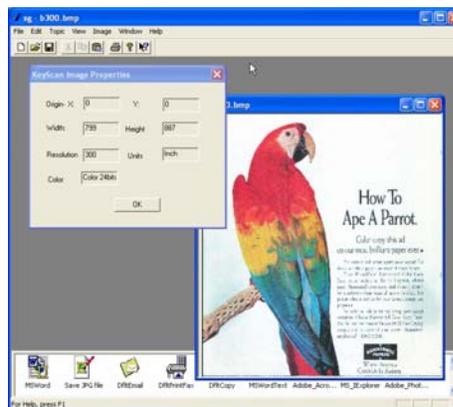


Fig. 5.28: KeyScan <Edit> <Properties> menu

5.4.10. <Edit> <Resample Resolution> menu-

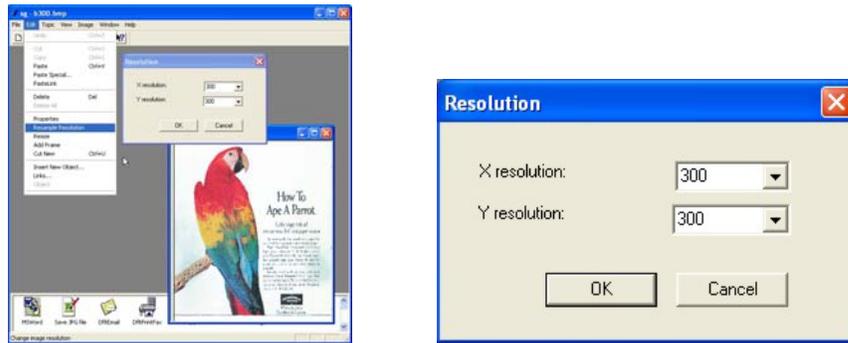


Fig. 5.29: KeyScan <Edit> <Resample> menu

Resample given document to higher or lower resolution.

5.4.11. <Edit> <Resize> menu-



Fig. 5.30: KeyScan <Edit> <Resize> menu

Resize current image to new size in X & Y Inches.

5.4.12. <Edit> <Add Frame> menu-

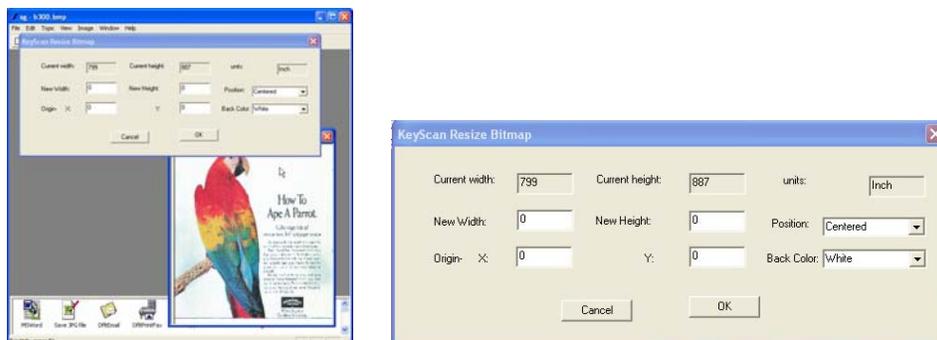


Fig. 5.31: KeyScan <Edit> <Add Frame> menu

Keep document width and height. add a frame around it

If new size is smaller than current size than this operation will cut the required rectangle out of the existing image.

If the new size is larger than the current size, this operation will create a new image of required size and past to it the current image.

5.4.13. <Edit> <Cut New> -

Cut the selected region and replace current image with the content of the region. Size is changed to the actual size of the new image.

5.4.14. <Edit> <Insert New Object> -

Insert a COM object into document.

## 5.5. View Menu-

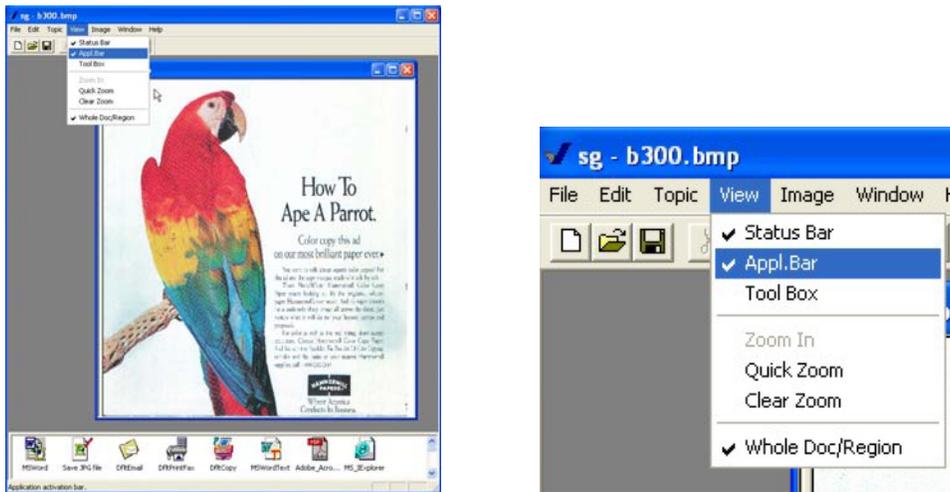


Fig. 5.32: KeyScan <View> menu

### 5.5.1. Tools & Bars-

#### 5.5.1.1. <View> <Status Bar> -

The status bar is located on the bottom frame of the KeyScan application and serves as immediate status and information display

#### 5.5.1.2. <View> <Application Bar> -

Application bar is a strip of one or more lines of icons at the bottom of the KeyScan application window, each icon represents application which can be activated by the user. When the application is activated it receives also the current opened KeyScan Imaging document.

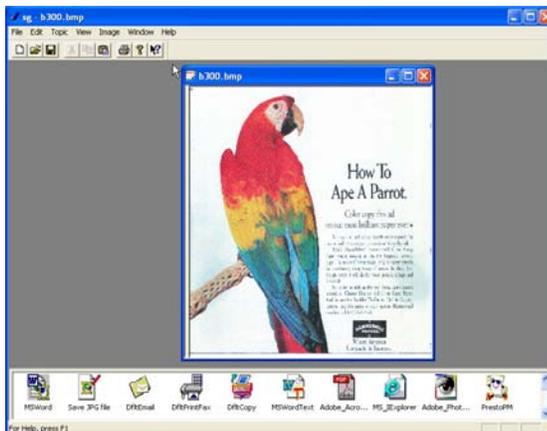


Fig. 5.33: KeyScan Application Bar

Scan or Open disk document.

Click on the required application on the Application Bar.

The application is activated with the selected document.

The Application Bar can be enabled/disabled by clicking on the Main Menu <View>  
<Application Bar>

For information on how to expand and add more applications to the Application Bar  
please refer to the KeyScan Imaging Advanced Settings manual.

5.5.1.3. <View> <Tool Box> -  
Not available on KeyScan Imaging

## 5.5.2. Image Zoom-

### 5.5.2.1. <View> <Zoom In> menu -

This function let us have one level of image zooming of a given region on screen. If a rectangle region is defined, zoom the rectangle into the whole image frame. This function will be disabled if a region is not defined or if Quick Zoom mode is activated.

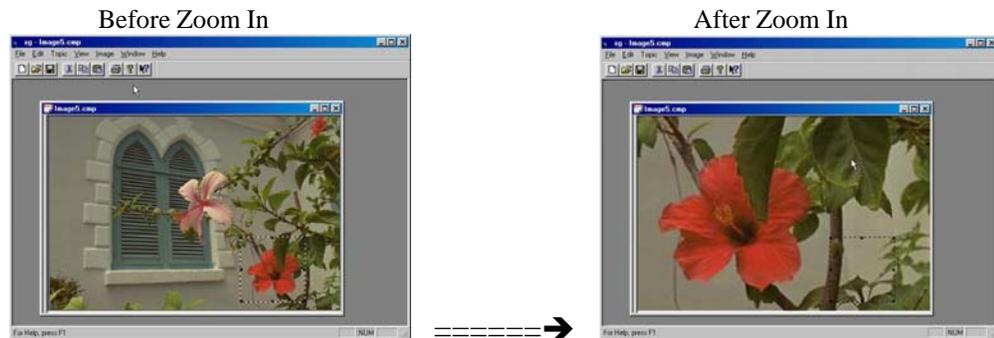


Fig. 5.34: KeyScan “Zoom-In”

### 5.5.2.2. <View> <Quick Zoom> menu -

This function let us do multiple zoom in/out. The center of the zoom function will be the cursor tip, which will change to a plus/minus magnifying glass cursor. In quick zoom mode, click on right mouse button is zoom in and click on left mouse button is zoom out.

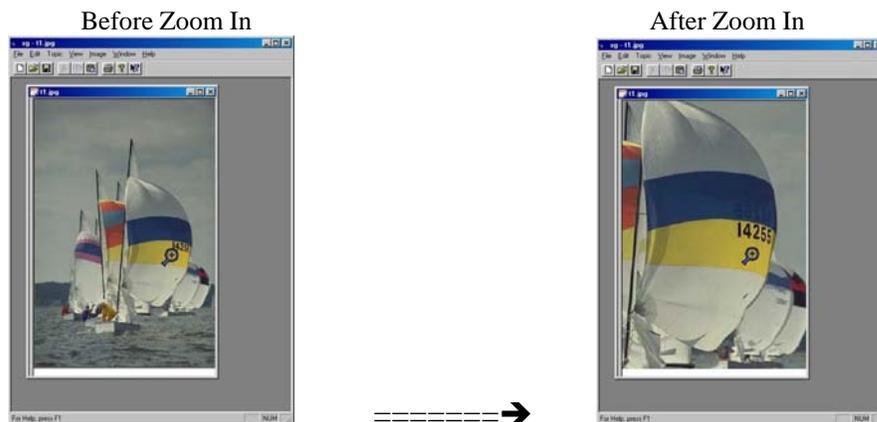


Fig. 5.35: KeyScan “Quick Zoom”

### 5.5.2.3. <View> <Clear Zoom> menu -

Clear any existing zoom factors and bring image to its original display.

5.5.2.4. <View> <Display Mode> menu -

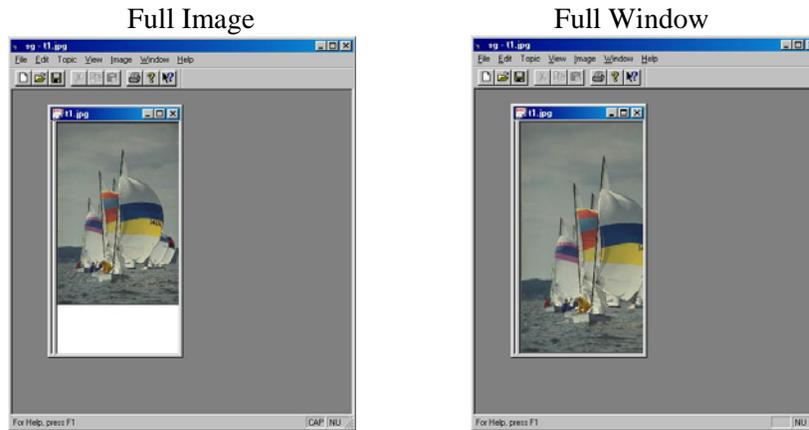


Fig. 5.36: KeyScan display mode

Whole image is displayed but  
Part of the window is empty in  
Case the aspect-ratio of the image  
And the application's window is  
not the same

Whole window is covered.  
Part of image is out of window.

## 5.6. Image Menu-

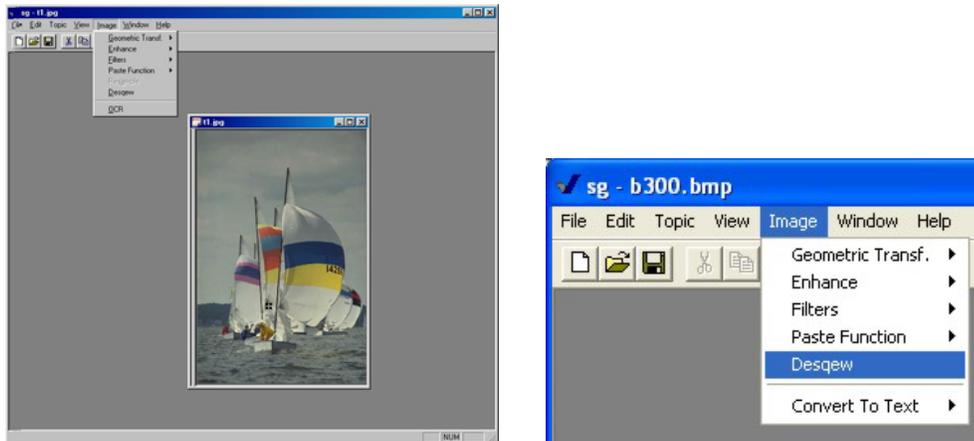


Fig. 5.36: KeyScan <Image> menu

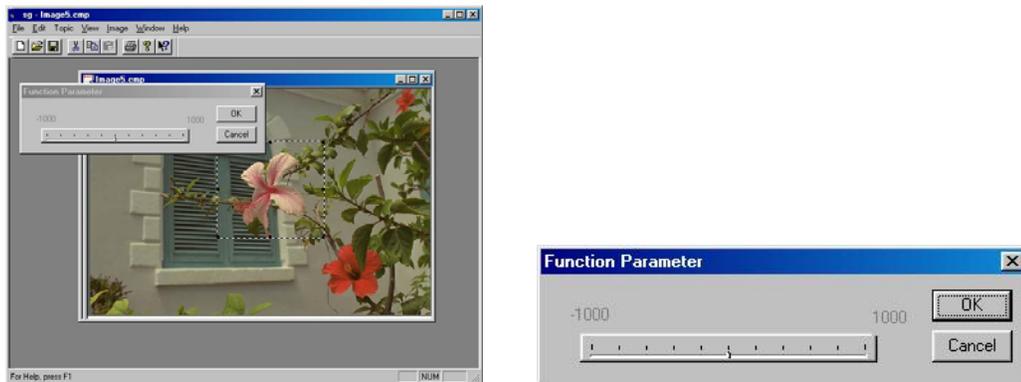


Fig. 5.37: KeyScan Image processing

### 5.7.1. <Image> <Geometric Transformations> menu -

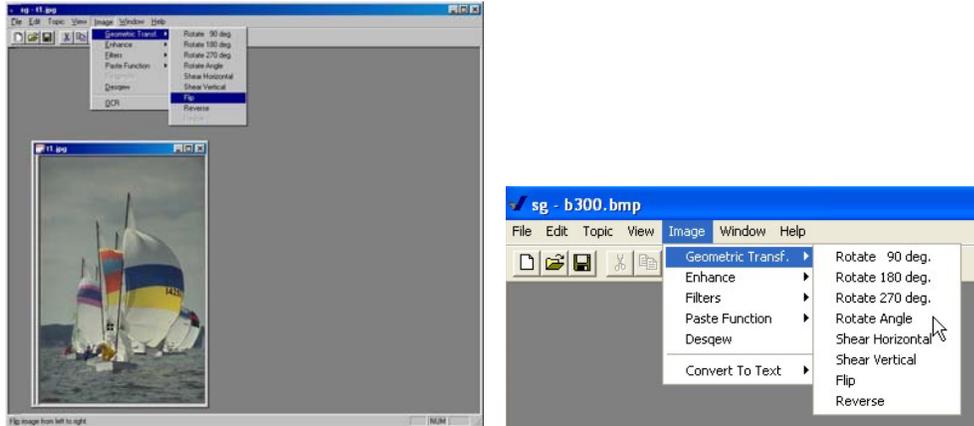


Fig. 5.37: KeyScan Image processing



**For other- (resize and stretch)**

See Edit menu.

### 5.7.2. <Image> <Enhancement> menu –

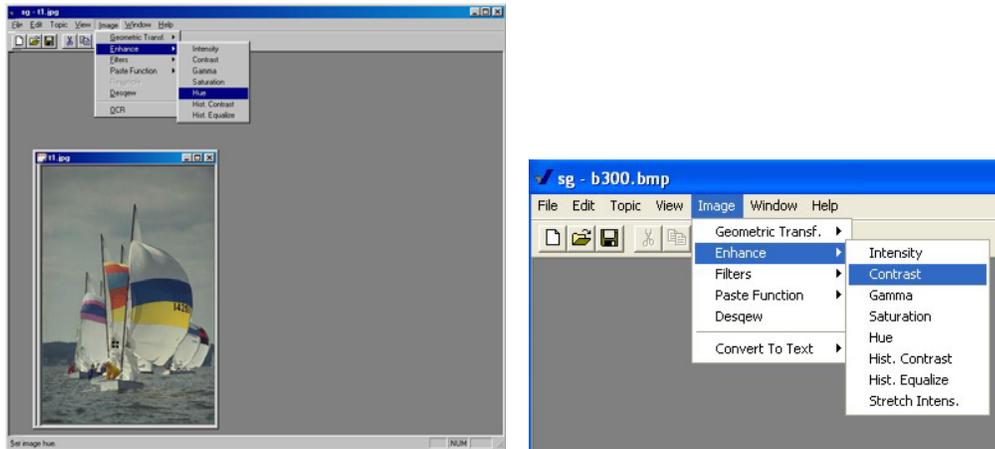
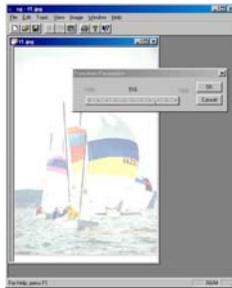


Fig. 5.38: KeyScan Image processing (Enhancement)

#### Intensity-



#### Contrast-



#### Saturation-



#### Hue-



#### Histogram Contrast-



#### Histogram Equalize-



### 5.7.3. <Image> <Filters> menu -

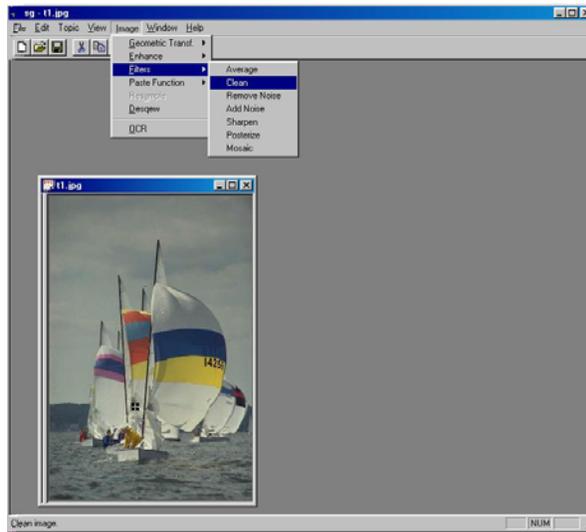


Fig. 5.39: KeyScan Image processing (Enhancement)

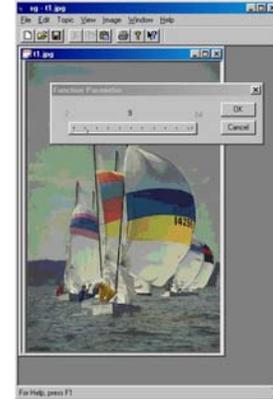
#### Average-



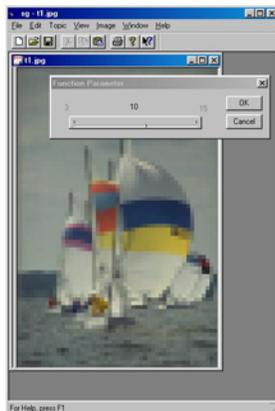
#### Add Noise-



#### Posterize-



#### Mosaic-



#### Clean-

#### Remove Noise-

#### 5.7.4. <Image> <Paste Function> menu -

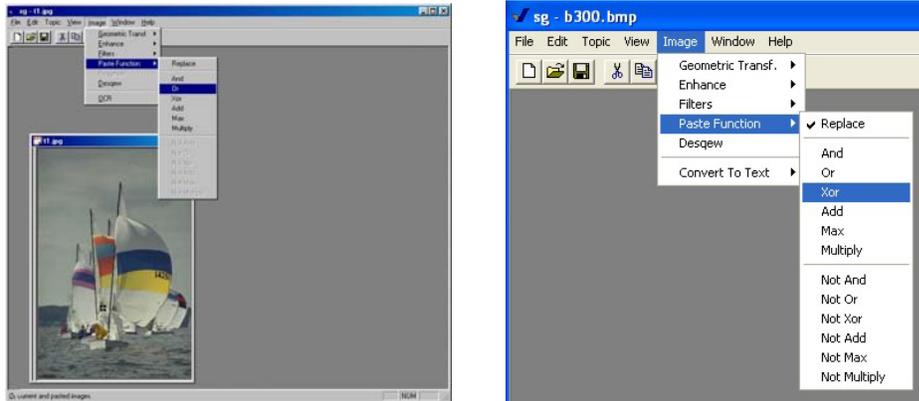


Fig. 5.40: KeyScan Image processing (regular)

For details of Paste function please refer to Main-Menu <Edit><Paste> function  
After we paste clipboard data into KeyScan Region and before we terminate the Region and make the paste function permanent we can select the <Image><Paste Function> that will be used to merge the original image with the new paste data. As long as the Region is still active we can try and change the paste functions and observe the results interactively.

#### 5.7.5. <Image> <Deskew> menu -

Remove Skew effect from the scanned image.

#### 5.7.6. <Image> <Convert to Text> menu -



Fig. 5.41: KeyScan OCR functions

The IRIS OCR engine is integrated with KeyScan Imaging software. This engine let the KeyScan software convert scanned images into compound documents of text and data in one of the following file formats-

1. Microsoft MS-Word
2. Adobe PDF
3. HTML

## **6. Other type of KeyScan Imaging Users-**

Chapter 5 discussed the details of Interactive User function- Interactive User is the user which activates the KeyScan Imaging software and uses the application graphic user interface PC keyboard and mouse to work with the KeyScan Imaging application.

### **User and User Type-**

**A user** is an entity which activates the KeyScan Imaging application, it can be a person or it can be another program.

**UserType** defines the method used to activate the KeyScan Imaging application and the related scanning parameters.

### **6.1. Interactive User-**

A user which uses his keyboard and mouse and the application's user interface to operate the "KeyScan Imaging" application.

### **6.2. TWAIN user-**

"KeyScan Imaging" application is activated as a TWAIN Source by a third party application which activates a TWAIN compliant scanner interface.  
For details see chapter 8.

### **6.3. NoTouch-AutoScan, Hot-keys & Icon-Scan user-**

"KeyScan Imaging" application is activated automatically by the insertion of a document to the scanner or by special functions Icons on the desktop.  
In addition there are 4 scanner Hot-keys and 6 functions Hot-keys. In these modes of operation the KeyScan Imaging application is activated as a NoTouch or AutoScan application.  
For details see chapter 7.

### **6.4. OLE2 in-place user-**

Third party application activates "KeyScan Imaging" application using OLE programming interface.

For details see chapter 10.

### **6.5. SHELL user-**

Third party application activates "KeyScan Imaging" application using command line.

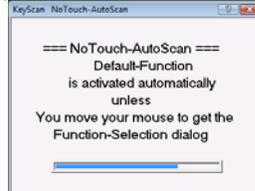
For details see chapter 9.

## 7. Auto Scanning & Scanner Hot Keys-

### 7.1. Introduction-

NoTouch-AutoScan is a software module which monitors the KeyScan scanner. When the user inserts a document to the scanner feeding slot, the software activates, automatically, the KeyScan Imaging software in NoTouch-AutoScan mode of operation.

In this mode it displays a Timeout Bar Box.



If during the timeout period the user does not move the mouse cursor over the timeout bar, he indicates that he wishes to proceed with the default scanning settings. If on the other hand, the user moves the mouse over the Timeout Bar before the timeout elapses he indicates that he wishes to skip NoTouch default settings and proceed with AutoScan that allows him to select other function.

In this case the AutoScan will replace the Timeout Bar with a function selection pop-up menu.

Function activation is done either by placing the mouse cursor on the icon of the required function and left clicking on the icon or by pressing the keyboard's function key, which appears to the right of the icon. Pressing {ALT} key with either the mouse or function key will activate an alternate function. The user can also browse the optional functions by pressing the {Page Up} and {PAGE Down} keyboard keys.

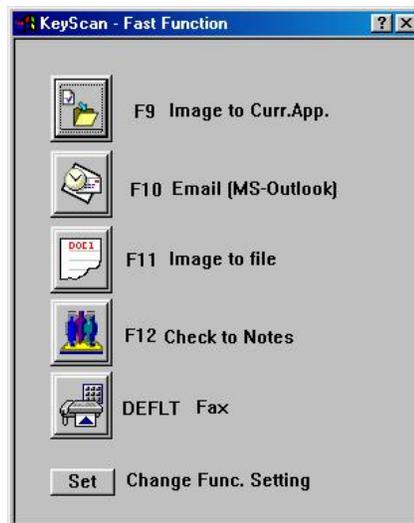


Fig7.1: AutoScan pop-up dialog

The AutoScan pop-up dialog functions can be set by the user to perform his most frequent used functions.

## 7.2. NoTouch-AutoScan operation-

### 7.2.1. Activating / Stopping AutoScan:

NoTouch-AutoScan is a software application, it can be activated in one of three ways-

- On startup when the PC is started
- By double-clicking on the AutoScan Icon on the PC desktop 
- Activating / deactivating NoTouch-AutoScan from KeyScan Imaging software:

#### To activate NoTouch-AutoScan:

Select on KeyScan Imaging Main Menu <File><Enable AutoScan>.

When the AutoScan is active and detects the KeyScan scanner the following pop-up window message will show on the monitor for 20-30 seconds



Fig7.2: AutoScan enabled message

#### To disable auto scan:

Select on KeyScan Imaging Main-Menu <File><Disable AutoScan>

The following message will pop-up

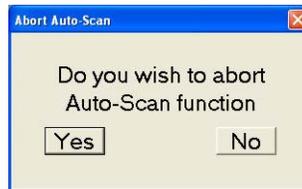


Fig7.3: AutoScan disable message

If the user selects [YES] button the AutoScan application will be stopped.

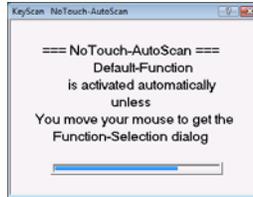
If the user selects [NO] button, the AutoScan will continue running.

### 7.2.2. Working with NoTouch-AutoScan:

Auto scan is optimized to automate scanning of documents for functions that the user uses mostly in his day to day work.

Auto-Scan process:

- The User places a document on the KeyScan scanner feeding tray .
- The NoTouch-AutoScan senses the document and activates the NoTouch-AutoScan Timeout Bar Box-



- If during the timeout period the user does not move the mouse over the Timeout Bar, he indicates that he wishes to proceed with the NoTouch default scanning process.
- The KeyScan Imaging software activates the scanning process using the default parameter settings, and when finish scanning activates the pre-assigned default function. All of it is done without having the user done any more clicking on the mouse or menu selection, beyond his decision to proceed with AutoScan.
- If on the other hand the user wishes to skip the NoTouch default setting and instead select other function, he should move the mouse cursor over the NoTouch-AutoScan Timeout Bar Box **before the timeout elapses**.
- This indicates that he wishes to use the AutoScan selection options, AutoScan is activated and replaces the Timeout Bar Box with a function selection pop-up menu.



Fig7.4: AutoScan pop-up dialog

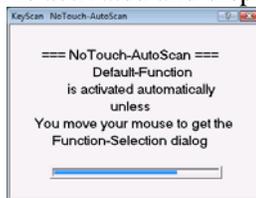
- The AutoScan pop-up selection menu contains a list of 5 icons, which represent 5 different functions the user can choose from. This feature is enhanced with the option to press the {ALT} key on the keyboard while choosing the function icon. The {ALT} key redirect the 5 functions to a different set of functions resulting a total of 10 functions to choose from. In addition the user can press {Page Up} or {Page Down} keys on the keyboard to get additional sets of functions on the AutoScan pop-up dialog.
- The user can easily change the settings of the various functions as explained later.
- The user choose the required function by left click on the mouse button Once the user chooses a function, the scanner scans the document and activates the required function. The comprehensive setting capability let the user choose between a fully automated process and the option to define scanning functionality, multi-page and other features within the scanning process.

### 7.2.3.Examples:

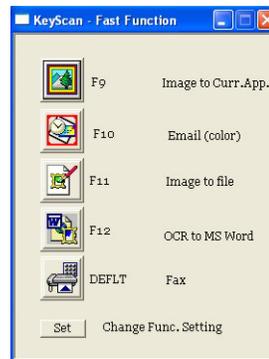
#### 7.2.3.1. Image to current application:

- The user is processing some document using Window application, for example MS-Word application.

- The user wishes to scan an image and insert it into the current Word document and place it in the current position of the cursor.
- Assuming that the AutoScan menu [F9] function is set to “Scan Image To
- Current Application”. The user inserts the document into the scanner scanning slot.
- The NoTouch-AutoScan is activated and displays the Timeout Bar Box



- During the timeout period the user moves the mouse over the Timeout Bar to indicate that he wishes to activate AutoScan.
- AutoScan is activated and replaces the Timeout Bar with a function selection pop-up menu.



- The user selects the [F9] function.
- The scanner perform scanning, scanning parameters are predefined for this function. One of the options available for setting is to have the scanner scanning user interface appear before scanning so the user can reset the scanning parameters each time he uses [F9].
- When scanning is finished KeyScan Imaging will trim the image black edges and enhance the image colors.
- KeyScan Imaging will perform the selected function- In our example it will push the image into the current application (providing the application accept the method for pushing the data, usually the Windows clipboard).

#### 7.2.3.2. Text to MS-WORD:

The default setting of AutoScan sets F12 to perform the Scan OCR to MS-Word. This function will scan a document, when finished scanning it will process the document automatically using the Integrated IRIS OCR engine and produce a compound document of images and translated text all created in MS-WORD file format.

The user press [F12] button (OCR to MS-WORD) function.

The scanner perform scanning, scanning parameters are predefined for this function.

When finished scanning the KeyScan Imaging activates automatically the integrated OCR (Image analysis and image to text translation) engine and produces a compound document of combined text and images, in the requested MS-WORD file format.

The KeyScan Imaging software will open automatically the MS-Word application (if installed on the PC) with the newly created document opened and ready for processing.

### 7.2.3.3. Email (high compression/low compression):

Email will follow the same process as explained in 11.2.2.1 but when the auto-scan function is performed, KeyScan Imaging will activate the email software installed on the system and attach the scanned image to the new email message.

### 7.2.4. Setting and changing AutoScan functions.

The user can easily set the AutoScan functions.

In order to set the function the user needs to activate the Auto-Scan setting dialog, this can be done either by pressing the <Set> button on the bottom of the Auto-Scan dialog, or by using the <File> <Settings> <FuncKey Def.>. The “PopUp Function Setting” dialog should appear:

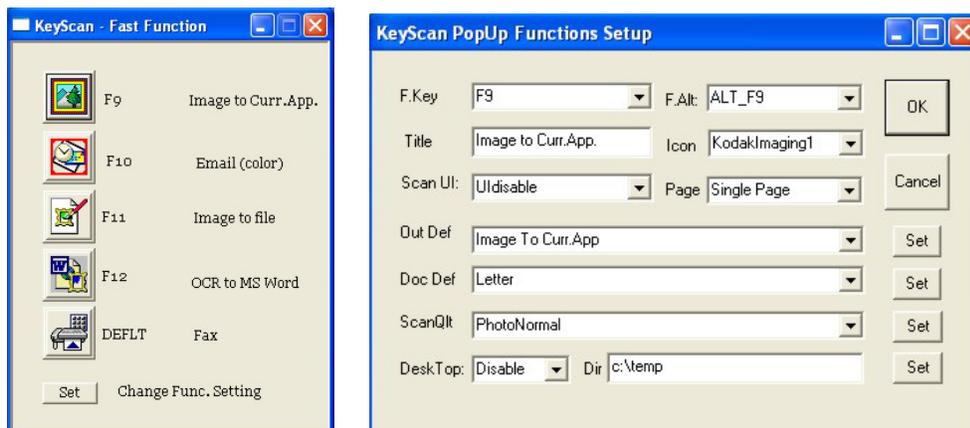


Fig 7.5: AutoScan setting dialog

For more details on setting functions using the “PopUp Function Setting” dialog see KeyScan Imaging Advanced setting manual

## 7.3. Hot-keys functions-

The KeyScan keyboard has two sets of hot-keys, on the top left side there is a set of 6 Internet functions and on the scanner there is a set of 4 scanner functions.

### 1. Internet hot-keys:

6 keys located on the top left side of the keyboard.



The Internet hot-keys functions from left to right-

**Refresh - Favorites - Cancel - Search - Explorer - eMail**

**2. Scanner hot-keys:**

4 keys located on top of the scanner.



The Scanner hot-keys are dual functions, by default they serve as multi-media control keys and only when KeyScan Imaging application is active and the user selected to enable them as scanner keys they change their functions to scanning functions for the duration of the current KeyScan Session.

Hot-keys multimedia functions-

The hot-keys multimedia functions from left to right are:

**Mute – Volume down – Volume up – Media player**

Hot-keys scanner functions-

The hot-keys scanner functions from left to right are:

**File – Copy – eMail - Fax**

Hot-keys are directed to activate the AutoScan relevant functions and their functionality can be tuned using the AutoScan function setting interface..

## **8. Twain user-**

A Twain User is a 3<sup>rd</sup> party application, which activates the KeyScan Imaging through its TWAIN data source interface. Such TWAIN User sends instructions and retrieves data from the KeyScan Imaging application.

KeyScan Imaging application has a built-in “TWAIN DATA SOURCE” interface, this interface enable any application which contain TWAIN API functionality to communicate, activate and perform set of functions as defined by the TWAIN API using the complete KeyScan Imaging application.

The KeyScan Imaging application will retrieve the 3<sup>rd</sup> party applications TWAIN API requests and perform them, within this process the user can take advantage of additional functionality that the KeyScan Imaging application can offer and he may not have on the calling application.

There are two significant advantages of KeyScan Imaging TWAIN Source operation over regular TWAIN source drivers.

Most TWAIN Source drivers are DLL libraries which run in the calling application space and as such can bring down the calling application or be affected by the calling application. The KeyScan Imaging is a stand-alone application running in its own application space and can not affect or be affected by the calling application.

When 3<sup>rd</sup> party application activates the KeyScan Imaging TWAIN source it actually gets a complete imaging application with much more functionality than defined by the TWAIN API.

## 9. “Shell command” user-

SHELL user is a 3<sup>rd</sup> party application which activates the KeyScan Imaging application programmatically using the Windows SHELL command line and KeyScan built-in command line interpreter which can analyze and execute a set of command line instructions.

### Overview of KeyScan command line:

#### KeyScan scanning user

KeyScan defines scanning “Users” as entities that can initiate scan function manually or programmatically based on set of parameters assigned to that entity.

**Interactive user**= a user that activates Keyscan Imaging software application by clicking on its Icon on the desktop.

**TWAIN user**= a user that activates KeyScan Imaging software through its built-in TWAIN Data-Source interface.

**DFLT user**= a user activated by NoTouch function automatically.

**Fnn user**= a user which activates KeyScan Imaging software application through NoTouch-AutoScan interface or through commandline interface.

#### Initialization process, user parameters setting-

The keyscan initialization process read user information from the SG.INI file and set the relevant user parameters table, this process is done only when the program is activated and a separate parameters table is being set per each user.

User parameters are defined by section [UI Parameters] on the SG.INI file.

Per each user:

1. Read the user entry from SG.INI file and set the parameters which appear on the line relevant to the user.
2. Extract the OutDef parameter(s), these are the parameters between the DocDef and the END\_OUTDEF and save them as the “output functions” to be performed.
3. Go over section [Output Functions] in SG.INI and create the “Output Function” table.
4. The OutDef parameters on user parameters line serve as a reference to the “Output Functions” table entries.
5. Go over section [Activation Bar] in SG.INI file and create the application-bar table which set up the functionality of the application-bar icons at the bottom of the KeyScan Imaging application. These functions are activated when the KeyScan Imaging “interactive” user clicks on the relevant icon.
6. All KeyScan Imaging users have programmatically access to the activation-bar entries through the “Output Functions” table settings as follows:
  - a. Set the Function parameter to “Image to AppBar”
  - b. Set the Path parameter to the name of the entry in the application bar table.
  - c. When referencing the applications bar table the application bar parameters are being read from the application-bar table at runtime and override the settings of the Output-function table.

#### KeyScan Command line interpreter

On program activation-

1. The initialization process create for each type of user- F1 → Fnn, Interactive user, TWAIN user and DEFLT user its array of parameters, which are defined by the [UI parameters] and [Output Functions] entries on SG.INI
2. When a user is activated, and after all default user parameters are set as mentioned above, the command line interpreter goes over the command line, extract the various parameters in the order they appear on the command line and save them in the required user parameters array replacing the original value set by the initialization process on the “UI parameters” and on the “Output Functions” tables.
3. Please note that the command line interpreter does not modify any settings on the “Applications bar” table, so if a command line activate output function which references “Application-bar” table entry, the application bar settings will override any command line settings!
4. Activate the required user based on its parameters settings.

In addition to the above explanation, please note that not all settings options are compatible to each-other.

### Setting examples:

We assume following table settings on SG.INI file-

[UI Parameters]

.

.

[F11]

UI='F11' FKEY,'UIdisable' UI enable,' Save to file (UI)' Title,'JPEGfile' IconID  
Name,'Letter' DocDef,'Image To File' , END\_OUTDEF,'Same File' # of  
Pages,'PhotoNormal' Scan Quality,'.\data' DeskTop,'Disable' DeskTop Startup,'ALT\_F11'  
ALT-KEY,

.

.

[Output Functions]

.

.

2='Image To File' Outdef\_Name, 'Image to file' Function, " Path, 'File I/O' Method, 'Tiff' Format, "  
Filter, 'Color 24bits' Color, 'Inch' Units, '300' Xres, '300' Yres, 'NoComprs' CompressMethod,  
'MedCompress' CompressFactor, '0' Setting, 'ENGLISH\_US' OCR\_Lang,

3='Text To File' Outdef\_Name, 'Text to file' Function, " Path, 'File I/O UI' Method, 'Text-RTF'  
Format, " Filter, 'Gray Scale' Color, 'Inch' Units, '300' Xres, '300' Yres, 'JPGComprs'  
CompressMethod, 'HighCompress' CompressFactor, '0' Setting, 'ENGLISH\_US' OCR\_Lang,

.

.

22='Save To File UI' Outdef\_Name, 'Image to AppBar' Function, 'Save\_to\_file' Path, 'None'  
Method, 'JPG' Format, " Filter, 'Color 24bits' Color, 'Inch' Units, '300' Xres, '300' Yres,  
'NoComprs' CompressMethod, 'NoCompress' CompressFactor, '0' Setting, 'ENGLISH\_US'  
OCR\_Lang,

## Command-line Example 1:

```
"sg.exe /UserType=F11"
```

This command line will attempt to scan multiple pages into single output file (the parameter “# of pages” on F11 is set to “Same File”, if you modify it to “Single Page” it will terminate scan after one page)

The scanning parameters used are those defined as default by the relevant user parameters of the F11 command (the “UI enable” parameter on the F11 line is defined as “UIisable” if you change it to “UIenable” then when F11 is activated the scan dialog will popup letting the user define the scanning parameters - resolution, documentsize, color mode).

Display timeout dialog to let the user feed more pages (see above explanation).

When finished scanning, activate the function defined as OUTDEF function, in F11 of this example it is 'Image To File' so we execute the function defined as 'Image To File' on the [Output Functions] functions list.

Please note that the following parameters, although exist on the command line or SG.INI have no effect and ignored by the software-

1. Format parameter on the [Output Functions] entries, this parameter setting is automatically override by the output file name extension.
2. Format parameter in the /OutFile=name, file\_format, compression option on the command line.

Since F11 direct us to “Image To File” in [output Functions] table, the default scanning parameters are defined by that entry to color 24 bits 300 dpi.

Since the “path” parameter on “Image To File” entry is empty, the default setting is used this default is defined by [Output Function]<TempFile>

## Changing output file path and format-

```
"sg.exe /UserType=F11 /OutFile=c:\temp\ksimage.jpg"
```

The above command will scan the document and save it into c:\temp\ksimage.jpg file , you must make sure the requested folder exists. The output file format is defined automatically by the file name extension.

## Setting the compression level for JPG file-

```
"sg.exe /UserType=F11 /OutFile=c:\temp\ksimage.jpg,jpg,2"
```

Will produced highly compressed file

```
"sg.exe /UserType=F11 /OutFile=c:\temp\ksimage.jpg,jpg,250"
```

Will produce low compressed file

## Setting scanning resolution

```
"sg.exe /UserType=F11 /OutFile=c:\temp\ksimage.bmp /Res=100,100"
```

This command will override the scan resolution defined by “Image To File”, changing from 300 dpi to 100 dpi

Please note that due to temporary software library problem Gray scale or Black and White files can be saved only in 600 dpi

## Setting file format to PDF

The following example saves the scanned data in JPG file format  
"sg.exe /UserType=F11 /OutFile=c:\temp\ksimage.jpg"

In order to save the output in a PDF or DOC text formats it is not enough to modify the output file extension since the output function defined by user F11 is "Image To File", we must override the setting of F11 to "Text To File" (or modify F11 itself)

The following command line will produce a PDF output file.  
"sg.exe /UserType=F11 /OutFunc=Text To File /OutFile=c:\temp\ksimage.pdf"

## Setting scan color and related parameters

/SQ=.... Lets you define the parameters  
/OutQ=..... Let you select one of the predefined settings  
You do not need both on the same command line.

### 9.1. Introduction-

Third party application can activate "KeyScan Imaging" application using command line issued to the operating system Shell program.

As explained later the "KeyScan Imaging" application allows a very broad and versatile control over the application using the Shell command line.

### 9.2. Shell command syntax-

"<prog.path>\sg.exe [ /<par.ID>=<par.data> .....] "

<prog.path> path to the sg.exe application  
<par.ID> one of the optional parameters/commands as defined in 9.3  
<par.data> parameters data, can be any ascii text until the next '=' or '/' character, no need for blanks "", parameters are separated by comma. If the <par.ID> accept multiple parameters the last ones can be omitted and the interpreter will process only the given parameters.

### 9.3. Optional Shell command parameters (commands)-

#### 9.3.1. UserType:

/UserType=<user type name>  
<user type name> can be one of the defined users  
F9,F10,F11,F12,DEFLT,INTERACTIVE, FUNC\_DIALOG

#### 9.3.2. InFile:

Input file if needed, default is "Scanner"  
If "Scanner" is used then the scanner will be the source for data.

#### 9.3.3. OutFile:

Output file name, format, and compression level.

- /OutFile=out\_file\_name ,file\_format,compression\_level
- file\_format : [bmp|tif|pcx|jpg|fax|pct]
- compression\_level : 2-255, 2= low 255= high can be used only with JPG file format.

#### 9.3.4. Filter:

Activates special functions on the input file/scanned image. Filters performs image processing or geometrical processing on the image data, in case the command line contains more than one filter function the filters are executed serially one after the other in the same order they appear on the command line.

/Filter=<FilterFunction> [<FilterFunction> ..<FilterFunction>]]

<FilterFunction> = <filter name>( [par1...[parN]])

<filter name> - name of valid filter, see in paragraph 9.4 .

[par1...[parN]] – optional parameters for the filters, see specific requirements for every filter in paragraph 9.4.

#### 9.3.5. SQ:

This command sets the following scan parameters- Scan colors and quality parameters.

/SQ= <color>, <highlight>, <contrast>, < BW trshld>

<color> = "B&W" or "Gray Scale" or "Color 24bits"

<highlight> = -127 → +127

<contrast> = -127 → +127

< BW trshld> = 0 → 255

#### 9.3.6.Res:

Setup scan resolution , x and y resolution should be equal.

/Res= Xresolution, Yresolution

#### 9.3.7.SizeU:

Scan size and units.

/SizeU=width,height, <units>

<units> = Inch or MM"

#### 9.3.8.DocDef:

Select document definition, which sets document dimensions document units and number of images saved on the same document.

Valid document names are defined in SG.INI file and can also be view through <File> <Settings> <Doc. Def.> menu command.

/DocDef=<doc definition name>

#### 9.3.9.OutFunc:

Select output function definition.

#### 9.3.10. OutQ:

Select output quality definition, which sets the “brightness” , “contrast” , number of bits (color, gray, B&W) parameters.

/OutQ=<out quality name>

### 9.4. Filters Functions-

#### 9.4.1. Rotate image:

Rotate image by given angle.

Syntax- Rot( angle )

#### 9.4.2. SHEAR image horizontally:

Shear image horizontally by angle.

Syntax- ShearH( angle )

**9.4.3. SHEAR image vertically:**

Shear image vertically by angle.

Syntax- ShearV( angle )

**9.4.4. FLIP image:**

Flip the image (vertically).

Syntax- Flip()

**9.4.5. REVERSE image:**

Reverse image (horizontally).

Syntax- Rev()

**9.4.6. Resize image:**

Resize image to new size, if new size is smaller than current size, it will cut the required size out of the current bitmap. If new size is larger than the current size, create a new “larger” bitmap and past the current image to it.

Syntax- Size( x , y)

**9.4.7. ADD NOISE to image:**

Add noise to image, amount of noise is defined by n parameter which range is from 0 -- 1000.

Syntax- Noise( n )

**9.4.8. AVERAGE image:**

Average image to produce a “blure” effect, parameter N defines the strength of the function and range from 0 - 15.

Syntax- Aver( N )

**9.4.9. EMBOSS image:**

Emboss image (not ready yet)

Syntax- Embs()

**9.4.10. Modify image intensity:**

Change image intensity to make it brighter or darker.

Parameter N range from -1000 for darkest to +1000 for brightest

Syntax- Intns( N )

- 9.4.11. MEDIAN filter:**  
Syntax- Median()
- 9.4.12. MOSAIC filter:**  
Syntax- Mosaic( N )
- 9.4.13. POSTERIZE image:**  
Postr( N )
- 9.4.14. SHARPEN image:**  
Syntax- Sharpn( N )
- 9.4.15. GAMMA correction:**  
Syntax- Gamma( N )
- 9.4.16. Set Image CONTRAST:**  
Syntax- Contrast( N )
- 9.4.17. Image SATURATION:**  
Syntax- Satr( N )
- 9.4.18. HUE:**  
Syntax- Hue( N )
- 9.4.19. HISTOCONTRAST:**  
Syntax- HistContr( N )
- 9.4.20. HISTOEQUAL:**  
Syntax- HistEqual( N )
- 9.4.21. CLIPBOARD\_PASTE:**  
Syntax- Past()
- 9.4.22. Convert to Black&White:**  
Convert gray(8bit) image to B&W.  
Syntax- BW( flgs, trshld, high\_trshld, low\_trshld, localmin\_trshld,  
localmax\_trshld, histrgrm\_lines, histgrm\_dist)
- 9.4.23. Translate text image to character (OCR):**  
Perform OCR. (Not available yet)  
Syntax- OCR()
- 9.4.24. Process image by MATRIX:**  
Operate a matrix. (Not available yet)  
Syntax- Matrix(d,m11,m12,m13,m21,m22,m23,m31,m32,m33)
- 9.4.25. COMPRESS image data:**  
Compress jpg images,  
Syntax- Compres( level ) 2=low compr. 255= high compr
- 9.4.26. DDE external filter application:**  
Activate external filter application and use DDE protocol to transfer  
To and receive data from the filter application.  
This option is not available in KeyScan Imaging application

Syntax - DDE( EntryName, InMethod, OutMethod, InFile, OutFile)

EntryName - name of DDE definition entry in SgApps.ini file

InMethod - Method of data input to the DDE filter program  
"File" / "Clipboard".

OutMethod - Method of data output from the DDE filter to the  
program = "File" / "Clipboard"

InFile - Input file name in case InMethod is "File",

1. the actual path for the file If empty than –
- a. Check "InputFilePath" entry in the SgApps.ini entry

b. If the "InputFilePath" entry is empty, get the default file name of the OutDev definition.  
OutFile - See InFile.

If InMethod / OutMethod / InFile / OutFile are not defined (or some of them) attempt to locate the relevant information in the relative DDE entry in the SgApps.ini, if the entry does not exist there get default values as defined by OutDev definitions, the default for InMethod and OutMethod is "File". For more information see <DDE Filter settings Appendix XX>

## 9.5. Command lines Examples-

Example 1:

```
CommandLine1="c:\sg.exe /UserType=F11 /OutFile=c:\temp\ttt.bmp , BMP /Res=300,300 /Filter= BW() "
```

Example 2:

```
CommandLine2="c:\sg.exe /UserType=F11 /OutFile=c:\temp\ttt.jpg , JPG, 180 /Res=150,150 /Filter= Flip() Rev()"
```

## 9.6. Shell Activation by third party applications-

### 9.6.1. Activation using the operating system UI-

Under Windows 2000 and XP the user can issue directly a command line using <Start><Run> command, care should be taken regarding the O.S. "RUN" command buffer length.

### 9.6.2. Activation using C++ application-

**SHELL command interface under C/CPP:**

```
----- start of sample code -----
SHELLEXECUTEINFO execInfo;
BOOL          bSuccess;

execInfo.cbSize      = sizeof(execInfo);
execInfo.fMask       = SEE_MASK_NOCLOSEPROCESS |
SEE_MASK_FLAG_DDEWAIT;
execInfo.hwnd        = AfxGetMainWnd()->m_hWnd;
execInfo.lpVerb       = NULL;
execInfo.lpFile       = "G:\\KeyScanImaging\\sg.exe";
execInfo.lpParameters = "/UserType=F11 /InFile=Scanner /OutFile=c:\\temp\\DO1.jpg ";
execInfo.lpDirectory  = NULL;
execInfo.nShow        = SW_SHOWNORMAL;
execInfo.hInstApp     = 0;
execInfo.lpIDList     = NULL;
execInfo.lpClass      = NULL;
execInfo.hkeyClass    = 0;
execInfo.dwHotKey     = 0;
execInfo.hIcon        = 0;
execInfo.hProcess     = 0;
bSuccess = ::ShellExecuteEx( &execInfo );
```

----- End Of Code Sample -----

## 10. ICON user -

Icon user is an Interactive user, which takes advantage of the KeyScan Imaging built-in command line interpreter to pre-define and tune KeyScan Imaging application for a specific task.

For a list of command line syntax please refer to chapter 9

### 10.1 How to produce an Icon user

- Create a desktop icon for KeyScan Imaging application (or make a copy of your current KeyScan Imaging desktop icon).
- Place the mouse pointer on the new icon and left click on the mouse, on the pop-up menu select “Properties”.
- The Icon properties will open, select “shortcut”
- The following icon dialog should open

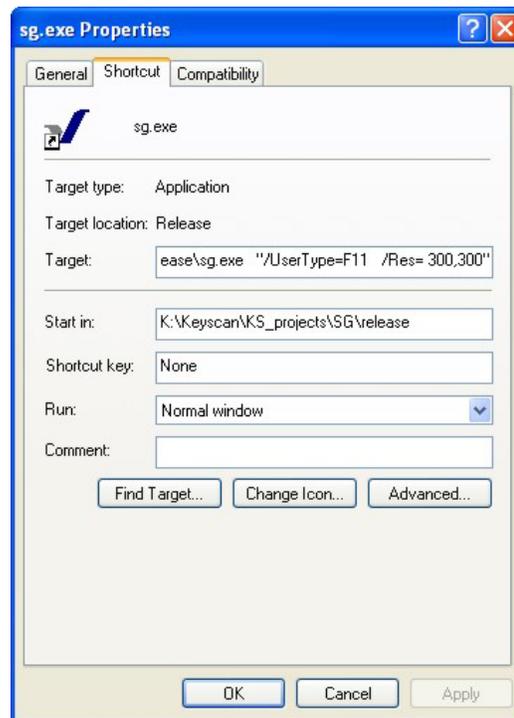


Fig 10.1: Icon setting dialog

- The “Target” entry should be modified from having only the KeyScan Imaging program path “... \SG.EXE” to a required command line which contains the KeyScan Imaging path followed by additional parameters.
- The command line parameters should be placed in parenthesis, for example on “/UserType=F11 /Res=300,300”.

## 11. OLE/COM Activation -

### 11.1. Introduction-

Third party application or interactive user can activate “KeyScan Imaging” application using Windows OLE/COM interface.

“KeyScan Imaging” application allows a very broad and versatile control over the application functionality using the OLE/COM technology available with Windows 2000 and XP.

The significant advantage of OLE2 interface is that it can allow any Windows application, which conform with the OLE/COM standard, to activate KeyScan Imaging software. When activated using OLE2, The “KeyScan Imaging” application window can become part of the calling 3rd party application window (in-place activation), as if it is part of the application and without any additional code written specific for KeyScan Imaging.

### 11.2. OLE2 modes of operation-

OLE2 activation of KeyScan Imaging can be done in two modes:

- **Standard user interface mode-** using the <Menu> <Insert> <Object> command on the 3<sup>rd</sup> party application menu.  
This mode does not require any programming or any other special preparations by the “calling” third party application. The only requirement is that the third party application will be an OLE2 client application and it will have an “Insert Object” command on its menu options. A good example for such application is the Microsoft WORD application.
- **Programming mode-** using the Type Library exposed interfaces.  
This mode of operation gives a third party application a full control over KeyScan Imaging operation using application interfaces exposed by KeyScan Imaging through its “type-library”

### 11.3. Standard user interface mode –

When a third party application is an OLE2 client application it should expose in its menu or other user interface options a method to let the user insert objects produced by other applications (OLE/COM servers) into the application document. We will follow an example based on Microsoft MS-WORD application.

Selection of KeyScan Imaging object from the list of available objects-  
On the MS-Word main menu select <Insert> entry. On the <Insert> entry select <Object>.

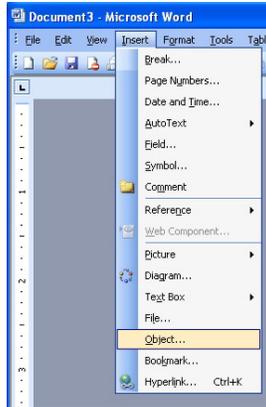


Fig 11.1: MS-Word insert-object menu

A popup dialog appears with the list of all objects available, “Sg Document” is the entry for KeyScan Imaging software object.

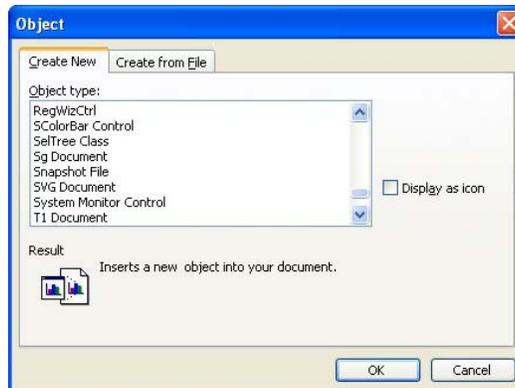


Fig 11.2: MS-Word select-object dialog

After KeyScan Imaging object “Sg Document” is selected, the system will alter the original MS-Word menu, replacing temporarily Word’s <Edit> to <Window> menus with KeyScan Imaging <Edit> <View> <Image> and <Help>.

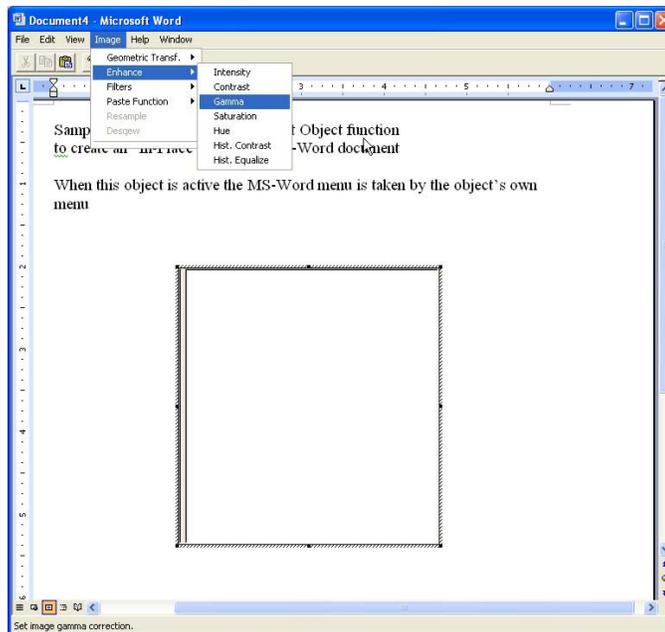


Fig 11.3: MS-Word In-Place active object

It will create also an “In-Place” window for KeyScan Imaging document inside the current opened Word document client area.

Each time the user clicks with the mouse on the KeyScan Imaging in-place window the Word menu alters to KeyScan menu, and each time the user click off the KeyScan’ in-place frame the Word menu will change back to “normal”.

KeyScan Imaging functions when activated “In-Place” within a third party OLE2 client application:

While the OLE2 client application (MS-Word in our case) is in KeyScan Imaging In-Place mode of operation the user can activate KeyScan Imaging functions using the menu options.

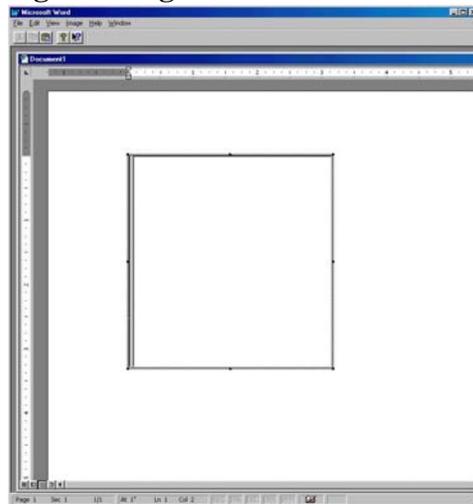
For example-

Scanning a new page: select from main menu <Edit> <Scan>, KeyScan imaging scanning user interface should appear on screen and let the user perform scanning.

Activate KeyScan Imaging processing functions: Select from main menu <Image> and the required image processing function.

MS-Word screen image when activating KeyScan Imaging OLE2 In-Place mode.

#### 11.4. Programming mode –



The details for OLE/COM interfaces and Type-Library please refer to the KeyScan Imaging Advanced setting document. This option is not available on KeyScan Imaging.

## **FCC Compliance:**

Product- KeyScan Integrated Keyboard-Scanner  
Model- KS810-P  
Company- KeyScan Inc.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **The FCC Wants You to Know**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- a) Reorient or relocate the receiving antenna.
- b) Increase the separation between the equipment and receiver.
- c) Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- d) Consult the dealer or an experienced radio/TV technician.

### **FCC Warning**

**Modifications not expressly approved by the manufacturer could void the user authority to operate the equipment under FCC Rules.**