# **EMI TEST REPORT**



Report Number: KSQ-FCC040309 FCCID: RGTKBMC

## Appendix B - User's Manual

Please see attached document(s).



# KBiT MultiCam

(Model: KBMC)

User Manual



Kubong Information Technology Co., Ltd.

http://www.kbit.co.kr



## Before Use

### FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

### INFORMATION TO THE USER

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:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for help.

### WARNING

Changes or modifications not expressly approved by the manufacturer could void the use 's authority to operate the equipment.



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Thank you very much for purchasing MultiCam. This manual will help you become the expert on MultiCam. Reading this manual thoroughly will help use MultiCam very much.

We promise to upgrade MultiCam program and manual, using MultiCam Homepage continually. If there is any question or problem, please contact us in E-mail address below. We guarantee to answer as soon as possible.

And last, we thank you once again for purchasing our product, and hope you enjoy the new taste of digital world with KBiT MultiCam.

Kubong Information Technology Co., Ltd http://www.kbit.co.kr

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### Warning

Things to remember during installation

- Do not install it where it is humid or exposed to direct sunlight, or near heating device.
- Condition for best operation: 5 ~ 35 , 30 ~ 80% RH Do not install it where
  it is dusty or watery (rain). Do not place near magnet or sound device like
  speaker.
- It will be bad for resolution or voice transmission. If product is dropped or gets shocked, it can be a cause for breakage.

#### Safety warning

Followings are to increase the lifetime of the product, to protect the safety of users and to prevent the damage on the product while using it. Please use the product after reading following matters carefully.

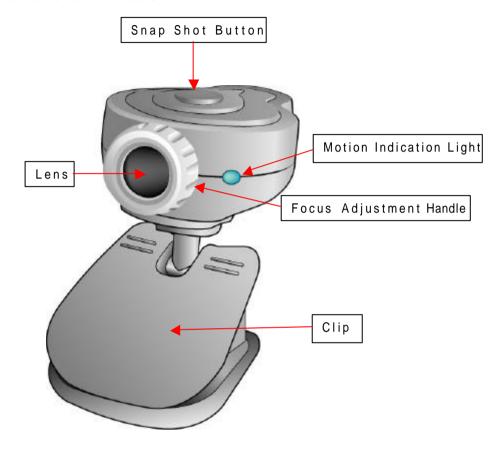
- Take the USB Cable off if Camera is not going to be used for a long time.
- Clean Camera and Lens with soft cloth.
- Do not sprinkle water directly, or clean with benzene, alcohol, etc.
- Do not touch Lens or clean with hands.
- Do not bend or pull USB Cable excessively.
- Do not turn the main body of Camera overly.
- They can be the causes for breakdown.
- Do not spill coffee or drinks on the product.
- Do not disassemble, fix or reassemble the product.
- If it needs to be fixed, ask at the purchased place or A/S center.

For any other questions, please visit Kubong Information Technology Co., Ltd.'s and bundle program manufacture's website.

Kubong Information Technology Co., Ltd.: <a href="http://www.kbit.co.kr">http://www.peopleandfuture.co.kr</a> You can download the program through the internet for upgrade or in case you lost your CD.



### • Exterior and Functions of Product



Warning

Do not turn the Focus Adjustment Handle overly to touch Lens Cover and Snap Shot Button (Focus adjustment may be impossible).



Auto Installation of Driver and Application Program (Windows 98(SE)/ME/2000/XP)

When starting PC with MultiCam Installation CD in CD-ROM, following pictures of

installation menu screen will appear. Please install driver first, before putting Camera for smooth Camera operation



- When pushing Install, driver and Application Software will be Installed automatically you put Camera on computer before you installed driver, New Hardware Add Wizard box will appear like shown below. Push Cancel, and install driver.





- After installing driver, reboot the windows and place Camera at USB port.

Windows2000 users, See the Manual Installation of Windows2000.

"Insert Windows CD" message may appear during installation. In this case, select C:\ Windows \ options \ cabs or C:\ Windows \ \ options \ install folder. If there are not these folders, insert Windows CD. If you do not have Windows CD either, select DRIVER folder from KBiT MultiCam installation CD and select appropriate folder for your PC.

We recommend rebooting for smooth operation, when installing driver.

- When installing driver, you can install security program MultiCam, EagleEye, internet sticker program CaptureDog, and motion image editing program PowerAction selectively. EagleEyeWeb, Selected programs will show Left Lamp as shown in picture.



- If driver and application programs are installed, each menu will be appeared in Green



- It will be installed automatically by pushing Install button.

### Windows XP Auto Installation (When Camera is placed before driver is installed)





- Push Next button in starting screen of New Hardware Search Wizard.
- Click Next to go on to the next step.
- When Box, saying 'New Hardware Device Installation is finished', appears like shown in left screen, push End Button.

#### Manual Installation of Windows 2000

When Camera is placed before driver is installed (automatic installation)





- Push Cancel button in starting screen of New Hardware Search Wizard. Place MultiCam Installation CD and install driver automatically.
- Reboot Windows or place Camera again.
- When Digital signing screen appears, push Yes button.



- Rest of the installation will be don automatically.

When Camera is placed before driver is installed (manual installation)







- Push Next button in starting screen of New Hardware Search Wizard.
- Select appropriate driver search (recommend), and push Next button.
- Select Select Location from Driver File Search, and push Next button.
- When Location screen of Manufacturer's File to copy appears, insert MultiCam Installation CD and push Search button.
- Push searching location to select MultiCam CD, and select Driver folder among searched folders.
- Select Win2000 folder among searched folder, and push Open button.
- When Location screen of Manufacturer's File to copy appears, push Confirm button.

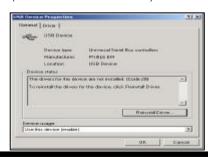




- When driver file search result appears on screen, push Next button.
- When Digital signing screen appears, push Yes button
- When New Hardware Search Wizard End screen appears, push End button. Camera Installation is finished.
  - When Camera is placed and canceled before driver is installed (manual installation)







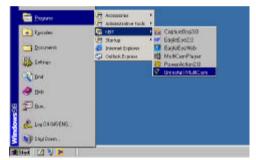


- When pushing Cancel button from New Hardware Search Wizard Start screen, Hardware Separation or Taking out icon will appear on bottom right like shown on screen
- Double-click this icon, and Hardware Separation or Taking out screen will appear.
- If you want to remove wrong device and to start over again, select device(USB Device), and push Stop button.
- If you want automatic installation, push Close button and insert MultiCam Installation CD.
- See the Automatic Installation page front.
- If you want manual installation, push Registered Information from above screen
- Push Driver Reinstallation button from USB Device Registered Information screen.
- Push Next button, when Driver Upgrade Wizard Start screen appears.
- Rest of installation is same as When Camera is placed before driver is installed (manual installation) page front.

#### Uninstall Program and Driver

Uninstall Program
(Using Uninstall Icon)







Following screen will appear, when pushing Start button from Windows ->

Programs -> KBiT -> Uninstall MultiCam icon.

- Select program you want to uninstall.
- When pushing Next button, V marked programs will be uninstalled.
- When driver is uninstalled, open the Prog Manager and remove the KBiT MultiCam belo the image device.

Uninstall Program (Using Program Add/Delete from Control

- Can uninstall from Program Add/Delete from Control Panel.



 Select KBiT MultiCam Software Install and push Add/Delete button. Then proceed like shown above.

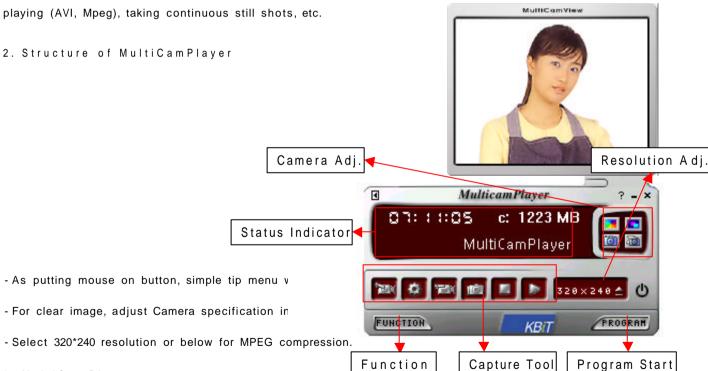
 When driver is uninstalled, open the Program Manager and remove the KBiT MultiCam Camera below the image device.

Windows XP, 2000

### Total Operation Program MultiCamPlayer

1. What is MultiCamPlayer?

MultiCamPlayer is total operation program, which is the foundation of using Camera. Followings are the main functions of MumPlayer. It is a basic program for MultiCam View that shows motion image, recording AVI, converting AVI file into Mpeg file,



3. MultiCamPlayer

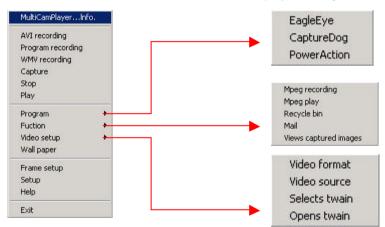
Cam Viewer: It is a window that shows the Camera image in MultiCamPlayer.

Size of View Window is adjusted automatically to the size selected in Video Form 328 x 248 button.



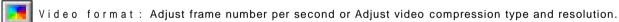


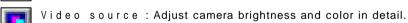
Menu Button: Run various functions and set player configuration.

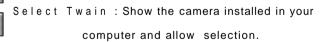




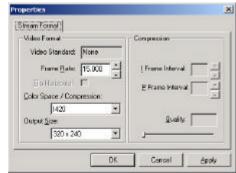
 ${\tt Camera\ setting\ :}\ {\tt Adjust\ camera\ brightness},\ {\tt color},\ {\tt resolution},\ {\tt and\ Twain}.$ 







Open Twain: Operate the camera selected in "Select Twain" and show/save the images.







Record: Save the camera images as AVI format.

AVI is a Windows basic format for MPEG compression or image edition. Specify a suitable filename and click the Save b



AVI recording

It is saved in the path specified in Menu configuration.

Record reservation : Reserve recording time. If the specified time is lapsed, recording is stopped.

WMV record: Save camera images as a WMV format real time. WMV format is saved without compression process and is a required format to create real-time broadcasting in web page.

Capture: Save camera images as stopped images.

Stop : Stop recording.

Play: Show the recorded motion picture.

hange resolution : Modify camera resolution.

Function : Manage saved motion pictures and stopped images.

Save Mpeg: Compress the picture saved as AVI format as Mpeg format.

Mpeg play: Show the compressed Mpeg file.

Mail: Send a saved file by mail.

Trash can: Remove continuously recorded images.

Thumbnail: Show the continuously recorded images for search.

Program: Run various applications.

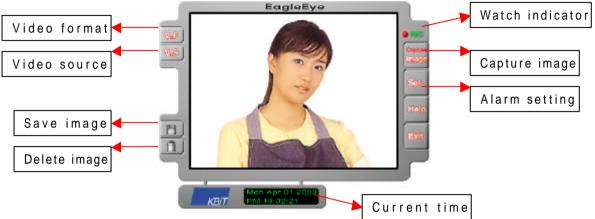
### Security Program, EagleEye

#### 1. What is EagleEye?

EagleEye is security program software for PC users. It detects the motion of otion image in real time and saves it to selected folder automatically, and shows the warning message for intrusion. It searches detected image and prints out the time and date. When not using a computer for certain amount of time, EagleEye can capture the users while you were gone in screen saver.

# KBiI Multi Cam

#### 2. Structure of EagleEye



- 3. Function of EagleEye
  - Video format: Specify video size displayed in screen and resolution to be saved. Higher resolution is, larger image capacity is. More hardware capacity is occupied and speed to import captured image is lowered. (Recommended resolution: 320 x240)
  - Video source: Adjust brightness, color, and display quality of image camera.
  - | Watch switch: Stop or start a watch function.
    - Remove image: Remove all the captured images.
  - Watch indicator : If this indicator is turned on, watch is applied; if any movement is captured, it is saved as an image.

C a p t u r e i m a g e : Save and print the captured image as various formats, and display stopped images continuously. Click this button, the following screen will appear.





- Captured time: Display saved time by month, day, hour, minute, and second.
- Save image: Save the captured screen by various image formats.
- Number of image: Display total number of saved screen.

Set EagleEye : Specify alarm applied if movement of camera is detected.- If screen saver operates, the alarm will not operate operates.



Exit EagleEye : Exit EagleEye.

### Internet Sticker Program, CaptureDog

1. What is CaptureDog?

CaptureDog maximizes the Video Camera even more. Main functions are making picture frame shape sticker, making picture composite sticker using background picture, making picture for identificati on automatically, saving created sticker as file, sending created sticker during chatting or gaming in E-mail directly, etc.



## K B i ■ Multi Cam

3. Function of CaptureDog



Select Camera: Show cameras installed in computer and allows selection.



Exit: Exit CaptureDog and return Windows.



Create a frame-shaped sticker

Create a sticker with various patterns

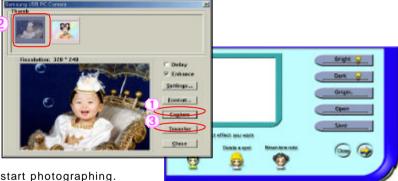
Create a sticker mixed with various backgrounds

Create a picture for identification in various sizes

4. How to Create Picture Sticker (Effect Sticker)

Click t Sticker1

button, camera connect screen is displayed as shown below.



1 Press the button to start photographing.

- 2 Select the photographed picture.
- 3 Click the button to import the desired picture.



Bright: Be brighter each time the button is pressed.

Dark: Be darker each time the button is pressed.

Origin: Restore the picture before adjusting brightness or applying effects.

Open: Open the picture saved in computer.

S a v e: Save the picture adjusting brightness or applying effects in computer.







- 1 Press the button to modify the opened pi
- 2 Give the desired effect to the opened picture.

Click the Save button to save the picture applying effects.

- 3 Click th
- button to proceed to the next step.
- 4 Click those button to exit the current work.





- 1 Select the effect background, a sticker is created automatically as shown in the left figure.
- 2 Blended picture appears each time the background is pressed.
- 3 Press the button to proceed to the next step.
- 4 Press the button to return the previous step image adjust screen.



- 1 Select the desired sticker size
- 2 A completed sticker of the selected size is displayed.
  - 3 Print the completed sticker.
    - Caution: Print paper should be designated as A6.
  - 4 Save the completed sticker as a file.



5 Send the completed sticker by mail.

C a u t i o n : To send e -mail, configuration of Microsoft Outlook Express should be set. See the configuration of Outlook Express.

<sup>6</sup> Click the Close button to exit. To change the background or modify the picture, clic

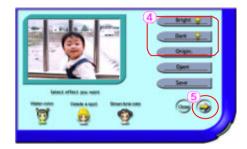
button to return the previous step.

5. How to Create a Sticker (Filter sticker)

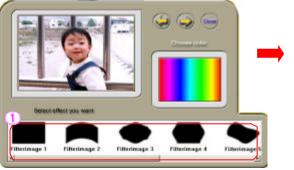
Click t Sticker2

button, camera connect screen appears as shown below.





- 1 Click the button to start photographing.
- 2 Select the photographed picture.
- 3 Click the button to import the picture.
- 4 Click the button to modify the imported picture.
- 5 Click th button to proceed to the next step.





- 1 Select filter, a sticker is created automatically as shown in the left picture.
- <sup>2</sup> Every time filter is pressed, the blended picture appears. <sup>3</sup> Color the button, color is changed automatically.
- 4 Click th button to proceed to the next button. 5 Print, save, and send by e-mail the completed sticker.











### 6. How to Create a Sticker (Background sticker)

Click t Sticker3

button, camera connect screen appears as shown in below.



- 1 Click the button to start photographing.
- 2 Select the photographed picture.
- 3 Click the button to import the picture.
- 4 Click the button to modify the imported picture.
- 5 Click the button to proceed to the next step.



- 1 Click the Backimage button and open the background file in the following figure.
- <sup>2</sup> Click the Top, Bottom, Left, and Right button to adjust the size suitable for background.
- 3 Click the Top, Bottom, Left, and Right button to adjust the picture position suitable for background.

## K B i ■ Multi Cam

4 Click th button to proceed to the next step.



7. How to

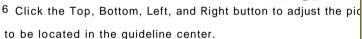
After pushing Photo 1970

button, image of camera will appear.

- 1 Click the button to photograph.
- 2 Select the photographed picture.
- 3 Click the button to import the picture.

If transfer captured picture, following box will appear.

- 4 Click the desired Size button.
- 5 Adjust the picture suitable for guideline si



It is important that picture in gray guideline is same as a pic for identification.

7 If location and size are suitable, clid butt If you will make a complete picture again, cl to complete. button to return home.

8 Click th button to proceed to the next step.





1 Print the completed sticker.

C a u t i o n : Print paper should be designated as A6.

2 To change picture size or modify size and location, click the



button to return the previous step.

### Motion Image Editing Program, PowerAction

#### 1. What is PowerAction?

It converts AVI file into BMP, JPG, etc., and creates AVI type motion image file.

It can compose various kinds of filter, correct, compose and edit.

#### 2. PowerAction



3. File tools



Open AVI: Open the saved clip files.



Save AVI: Save the modified clip file.

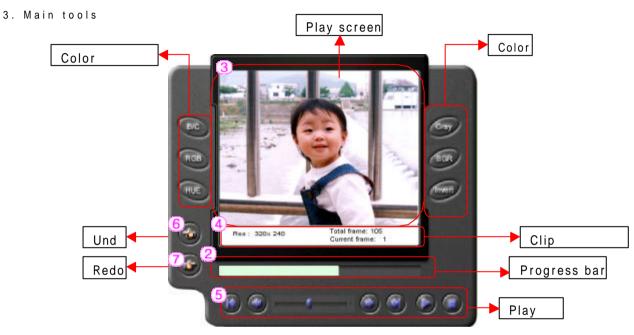
# K B i ■ Multi Cam



Save BMP: Save the current frame as bitmap.



Send by e-mail: Send the saved image file by e-mail.



- 1 Click t Open Avi button in file tools to open an image file.
- 2 Import status is displayed visually and also displayed in applying various effects.
- 3 Images are displayed in play screen. 4 Display resolution, total number of frame and current frame of image file
- 5 Speedy search with play tools or stop and move by one frame can be applied easily.



## K B i ■ Multi Cam

44.00

1.00

1.00

Albei

Default

Cancel

Ok

Move to the first frame

Move the previous frame

Progress display and search slide

Move to the next frame

Move to the last frame

Brightness

Contrast

Gamma

1 Before

Play

Stop

6 Click th

button to return to the previous status before applying effects.

7 Press thus

details.

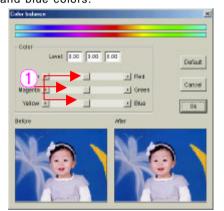
button to redo effects canceled by clicking the do



4. Color Calibration Tools

To calibrate colors of the opened image, the following color calibration tools a BIG Brightness means lightness. In other words, it means the whole bri and shading means the whole contrast of image, i.e. difference between bright dark color. And, Gamma means shading of middle color and is used to activate i

Adjust color mixing of image. Adjust mixing of cyan, magenta, yellow RGB green, and blue colors.





Tone means color type that is expressed as yellow, red, and blue. Chroma means purity of color. Higher chroma is, more clear and clean color is; lower chroma is, more faded and turbid.

- 1 Move control slide with mouse and modify to the optimal status.
- 2 If you enter number value directly, you can modify in detail.
- 3 Click the Default button, it is restored to the initial settings. Compare and modify the left and right figure, you can find the differe





4 Click the OK button, menu to specify range is displayed as follows.
Specify the range to apply changes and click the OK button.

To return to the status before changes, c



button return to initial settings.

#### 5. Color conversion tools

ay Convert frame of the specified range to gray.

Invert frame RGB value of the specified range to BGR value. You can express unique image by Invert colors.

Invert frame color of the specified range. Color is changed as if you see the picture film. This effect is frequently used to make fear mood in film or d

#### 6. Filter tools

e djust arrangement type of pixel and make mosaic or half-tone effects.





- 1 Select form or move change slide to make suitable effects.
- 2 Preview window for effects applied.
- 3 Specify the range to apply effects.

Sharpen Make a frame clear and sharp. It allows the opposite effects with smooth and turbid effects.

Median

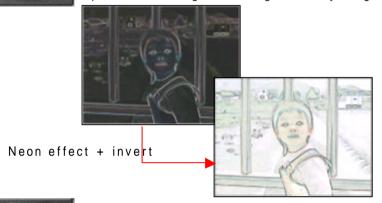
Remove noise and dirt by using colors simplification principle.





Neon

Express like neon signs of the mgm street by using border line (





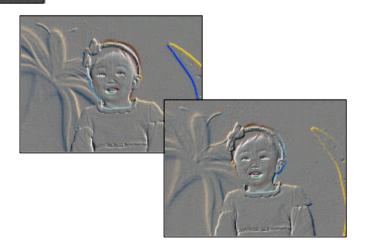
Motion

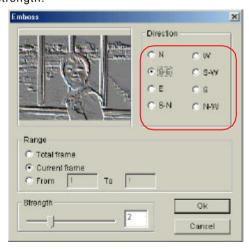
Remove scar or dirt by treating focus of frame faintly. And, it results in

deleting breaking of pixel that is displayed by increasing image size excessively.

**Emboss** 

Give emboss effect to frame. It differs in direction and strength.





# K B i ■ T Multi Cam

Noise

Give tough mood to frame by spraying artificial spots in frame.

Motion

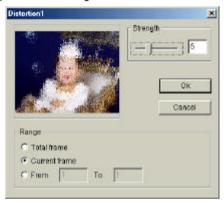
Give blur effect that frame moves to one direction.

Distortion1

Scatter pixel by dispersing pixels vaguely. It makes effects as if you see an image behind opaque glass.

Distortion2

Split frame in a given interval and twist in various angles.

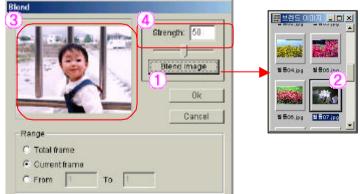




Smooth Make a frame seem to be smooth.

7. Blend tool







- 1 Click the Blend button.
- 2 Specify the folder including background, pictures can be searched.
- 3 If you select the desired picture, you can preview blended picture.
- 4 Make blending be harmonized by moving concentration adjust slide or entering number value.





Select the suitable frame type such as square, circle, oval.





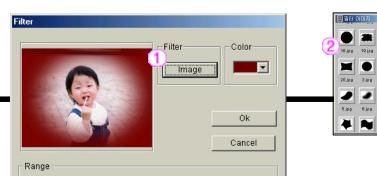
Shadow

Make shadow in frame automatically.





Blend picture with various patterns to make effects as if you photograph by installing filter in camera.









- 1 Click the Filter button.
- 2 Select the desired pattern by search patterns.
- 3 Click the button to select the harmonious color.
- 4 Select all or part of frame as effect range and click the O K button.



Make effects as if frame is split into square tiles.



Express watercolor painting effect in frame.

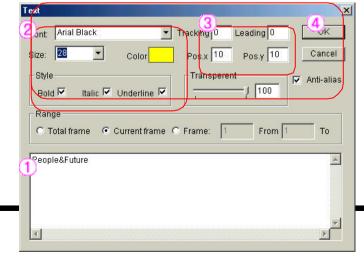


Enter text in frame.





1 Enter text



28



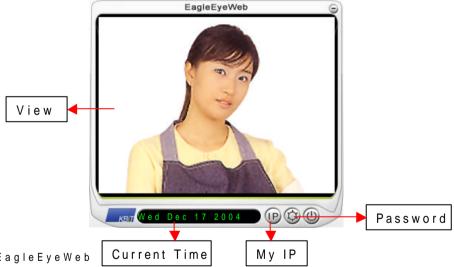
- 2 Specify font, size, and color.
- 3 Enter coordinates that characters are entered.
- 4 Specify effect range and click the O K button.

### • Internet Security Program - EagleEyeWeb

1. What is EagleEyeWeb?

EagleEyeWeb is the internet -based security software for individual PC users. EagleEyeWeb allows the user to monitor around the place where the camera is installed through the Internet Web browser from anywhere in the world where there is Internet access.

2. EagleEyeWeb Components



3. Functions of EagleEyeWeb



Setting password: Sets password for starting EagleEyeWeb, or for remotely monitoring the camera. The default password saved is "1234".

Change the default password to a private password..



My IP Info: Displays the IP configuration of your computer. You can enter into this IP to monitor from the remote place.



End program: Ends EagleEyeWeb.



Hide the screen: Minimize the program.

Entering password / Selecting IP

- You will be asked to enter password when starting EagleEyeWeb as follows.
- If more than two network devices are installed in the system, a window will be prompted to select the stand-by IP before starting

EagleEyeWeb. Select a valid IP to start the program.

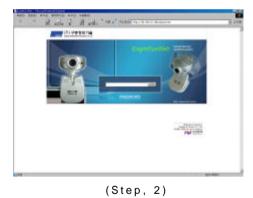




Remote monitoring

As shown in the figure below, EagleEyeWeb allows the user to monitor around the place where the camera is installed by entering IP address of the computer which has the EagleEyeWeb program running from the remote place.

- Step 1: Open an Internet web browser and enter the IP address of the computer which has the EagleEyeWeb program running.
- Step 2: Type in the password, which was set during the EagleEyeWeb installation, and click OK button.
- Step 3: The camera screen displays.





(Step, 3)



### Product Specifications

Classification	Specifications
Image pickup device	1/3" CMOS
Effective Resolution (pixels)	648(H)x488(V))
Lens	f2.6, f=7.0mm
Minimum Illumination	5 lux
Picture angle	58 degree (H)
Output signal	USB format
White balance	Auto
Transmission speed	VGA: 15 frame/sec(software)
Signal processor	DSP(digital signal processor)
Power input	DC 5V, USB Cable
Power consumption	Maximum 1.2W
Dimension	42x65x60(mm)
Weight	Approximately 34g

### • Minimum System Requirements for Installation

Classification	Specifications	
Processor	Minimum Pentium II 300 Mhz	
Cable port	USB Port-Embedded PC	
Memory	64MB (128MB recommended)	
Applicable OS	Windows 98, Windows ME, Windows 2000, Windows XP	



Monitor Resolution	Minimum 1024 X 768
Hard disc	Minimum 200MB(if standard S/W installed)
Installation driver	Install CD-ROM Driver
Requirements for video conference	VDSL(very high-data rate digital subscriber line), Microphone, Speaker,
	Sound blaster compatible Sound Card

<sup>-</sup> For the software upgrade, visit:

#### http://www.kbit.co.kr

### • Things to check first upon detecting problems

Symptoms	Measurements
Transmission is too slow.	- It may be due to the decrease in transferring speed of your subscribing line.  - It may be due to the system's failure to process the data.  - Close programs other than WhilteCam software then try again.
Screen is too dark.	<ul> <li>Illumination degree of the screen can vary depending on amount of light.</li> <li>Try adjusting counter light, white balance, and luminosity on adjustment panel of the camera. (See "User Guide" for details)</li> </ul>
Images are unclear and blurred.	-Try adjusting focus of the camera. Make sure that the lens is kept clean and free of dirt.
When capturing paused images, screen is not normal. (deterioration in image, noise)  Bundle software can not be installed	<ul> <li>-With the frame speed too high, screen image can be deteriorated when capturing paused image. Try adjusting frame speed on the adjustment panel of the camera.</li> <li>-The optimum frame speed for capturing image: 5 frame</li> <li>- Make sure that the OS in use is a later version than Win95 (which this program can not run</li> </ul>
	on). Use Win98 and above.
"Select the video device" message keeps popping up.	- The camera is already being used by another program. Exit all programs other than WhiteCam and try again.  - Camera cannot be run if another program using the camera has been closed abnormally Reset PC and try again.
The error message "Active system error: at least one factor" appears	
PC is down.	<ul> <li>Make sure that USB cable is connected firmly.</li> <li>If the cable is disconnected before the video conference program has been closed, PC may go down. Thus, the cable must not be pulled out before closing the videoconference program properly or during its operation.</li> <li>In case that the cable is disconnected, exit the OS prior to reconnecting the cable. Then, try the program again.</li> </ul>



	<ul> <li>Running several programs at the same time may cause conflicts between software, resulting PC to go down. Reset PC and try again.</li> </ul>
Sound transmission problems occur	- Noises may be generated due to characteristics of installed sound card or speaker.
during videoconference	-Try adjusting the direction of the speaker and microphone.
- Noises ("howling") are too loud to converse - Sound from the counterparts cannot be heard.	-Try adjusting the volume of speaker and microphoneTry adjusting the "Audio adjustment for the communication". (See 'User Guide' for details.)

### • Warranty

Kubong Information Technology co., LTD. guarantees the product according to the customers' statutory rights.

Name of the product	KBiT MultiCam	Model	КВМС
Date of purchase		Manufacturing number	
Shop of purchase		Warranty period	Twelve months from date of purchase

Make sure that you have the form of warranty filled up completely by the dealers or distributors you have purchased the product from and check details of its content. To avail A/S provided by the company, please keep this warranty with "User Guide". The warranty is valid within the Republic of Korea only and not subject to reissue.



### Compensation for Consumer Damages

		Compensation		
Types of customers	' damages	With in the warranty period	After the warranty period expired	
	Critical problems occurred within 10 days from the date of purchase.	Exchange or refund		
Functional or	Critical problems occurred within one month from the date of purchase.	Exchange		
technical damage done during a normal	The same problem occurred thrice.	A/S free of charge	A/S with charge	
operation.	The same problem occurred at least four times.	Exchange or refund	A/S with charge	
·	Irreparable problems.  Irreparable since needed parts are out of stock (within the parts keeping period)	Exchange or refund	Exchange after the fixed fee depreciation	
Functional or technical damage intentionally done by the customer or due to mishandling.	Damage due to customer's mishandling or repairs/modification by unauthorized person  Damage due to abnormality of power in use or connection device defect.  Damage due to insertion of foreign materials into the unit.  Damage due to not following the cautions for safety mentioned in "User Guide"  Damage due to external cause other than self-defect	A/S with charge	A/S with charge	
Others	Damage dud to natural calamity (lightning, fire, s moke pollution, flood etc.)  Life span of consumable parts has worn out	A/S with charge	A/S with charge	

In case that the non-commercial product has been converted and used for the commercial purpose, the warranty period is shorten to half of the original period.

Keeping period of parts is five years after end of product life.

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