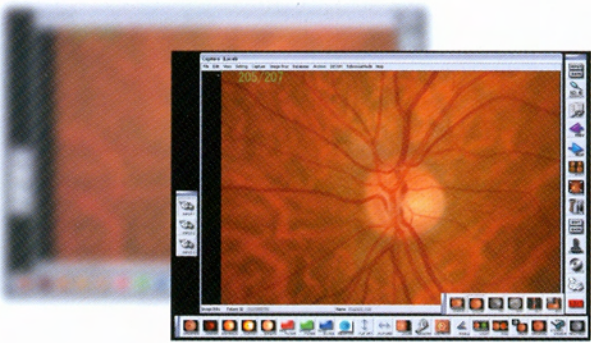## CAPTURING

Flexible and sophisticated, the VK-2 enables capturing of images from variable ophthalmic observation devices, with various applications like Multiple Timers and Link to Perimeter, to adapt any type of record. Supporting high-resolution digital cameras, the results are images taken in the best conditions, which care a lot about details. The VK-2 amazingly simplifies operations based on the principles of automatic switching and 1-click selection.
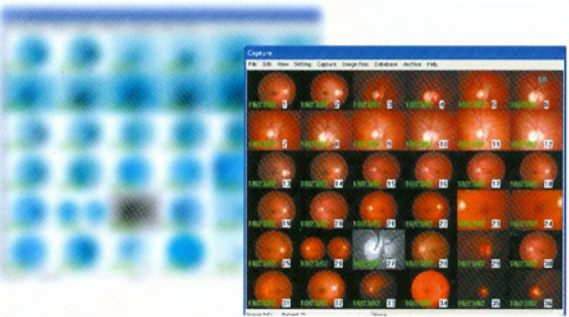
OBSERVING

Once captured, images can be adjusted and observed at will, with a set of functions, compiled in the Image Processing Toolbar on the display. From Sharpen Image to Measure Angle, Loop to Reference Image, the VK-2 strongly supports fast and accurate diagnosis, together with informed consent through easy-understandable explanations in front of patients, witnesses of this systematization of rightness.

EXAMINING

Captured images, now part of the VK-2 database with many others, are easily found and displayed in various forms. According to practitioners' needs, the VK-2 offers a wide selection of displaying criterion. Just showing the necessary information, The VK-2 efficiently supports comfortable examination.
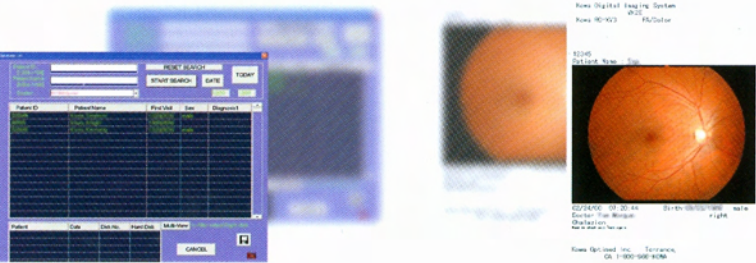
DEVELOPING

The VK-2 avails various functions for developed examination like PDT Function or Stereo Viewer, Montage Function, Magnifying Glass and more, enabling the creation of a powerful database. The VK-2 was designed to strongly support every examining operations, following the concept of "easily done, perfectly done".

SAVING & TRANSMITTING

Saving or adding to/from other folders or external medias, the VK-2 helps handle an unlimited number of images, freely, quickly and easily. Furthermore, printing, e-mailing are also facilitated with images always accompanied with patients' information. The VK-2 makes every operations quick but safe to the very end.

Specifications

VK-2 SOFTWARE APPLICATIONS

Image input	Y/C, VBS/RGB, Composite, USB, IEEE1394
Image processing	· Basic Processing with 1-click (sharpen image, gamma process, enhance image, contrast, brightness, analysis with RGB filter, negative image, flip image, zoom, measure length, measure angle, measure cup/disc ratio, measure angle, loop, undo, original, reference (template) image) · Multiple Images · Open and add additional image file formats JPEG, BMP to VK-2 database
Variable mode sets	· Variable mode set from the Trigger Input · ICG, FA mode 1 second B/W Capture with timer on the display linked to Kowa Fundus Camera
Supported cameras	· 3 CCD RGB color camera (Sony *1 DXC series) · Specific Nikon *2 digital SLR camera · Kowa digital color camera KD-211C/KD-630C (capture speed approximately 1 second) · Kowa digital B/W camera KD-144i
Variable archive methods	· Store the image after image processing · Support archive (CD-R, DVD-R, DVD-RW and removable hard disk), easy archiving · Direct copying of images to external disk drives
Easy operations	· Direct start up · Direct image printout · Support for Twain32 Image Scanner

HARDWARE SYSTEM REQUIREMENTS

CPU	Celeron *3 2GHz or higher
Memory	1Gbytes of RAM required for digital camera (KD-211C, KD-630C (capture speed approximately 1 second), Sony *1 DXC series, Nikon *2 digital SLR camera)
Disk	2 Hard disks (C: drive for system, D: drive for data (image & database)) (Separate System and Data drives to ensure image security in the event of catastrophic operating system failure)
Video card	XGA card, more than 8Mbytes memory (1024×768, 24 or 32 bit)
Power supply	300W or higher required for digital camera capturing
USB Port	One USB-port indispensable to VK-2 system
Fan	12V/0.1A or higher required for digital camera capturing
Monitor	17inch flat screen monitor
Archive drive	DVD-RW, CD-R drive (supported by "Adaptec Direct CD" *4 or packet write software)
OS	Windows® *5XP, Windows Vista™ *6
Open P.C.I. bus slot for:	Video capture board×1, digital capture board for KD-211C (or KD-630C)×2, IEEE 1394 for KD-144i×1

ADDITIONAL ITEMS OR SERVICES REQUIRED TO USE CERTAIN FEATURES

· 100Base-T Network Card (for network connection)
· UPS (Uninterruptible Power Supplies)

*1 Sony is a Trademark of Sony Corporation.
*2 Nikon is a Trademark of Nikon Corporation.
*3 Celeron is a Trademark of Intel Corporation.
*4 Adaptec Direct CD is a Trademark of ADAPTEC INC.
*5 Windows is a Trademark of Microsoft Corporation.
*6 Windows Vista is either a registered Trademark or Trademark of Microsoft Corporation in the United States and/or other countries.

All specifications of both software and hardware are subject to change without prior notice.

Distribution name: KOWA VK-2

Amazingly high-volume and highly diversified medical images are the elements the VK-2, Kowa Ophthalmic Medical Imaging Technology, has chosen to design its masterpiece of high performance digital imaging system.

Simplifying all operations but providing high quality digital images, the VK-2 systematizes the handling of all information for optimal time use, but above all, for the satisfaction of both practitioners and patients. Obtain the best in one touch…the ultimate of technology.
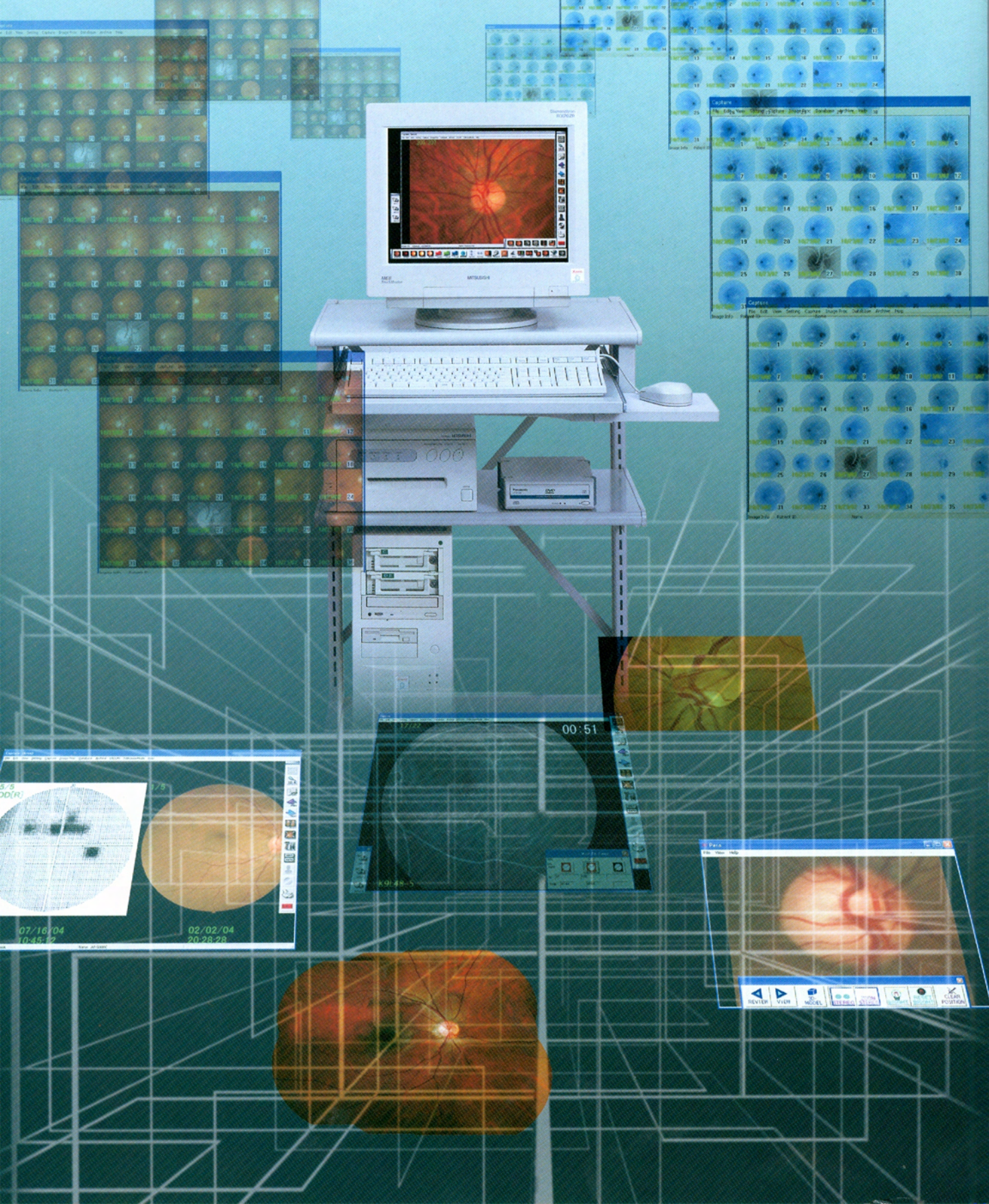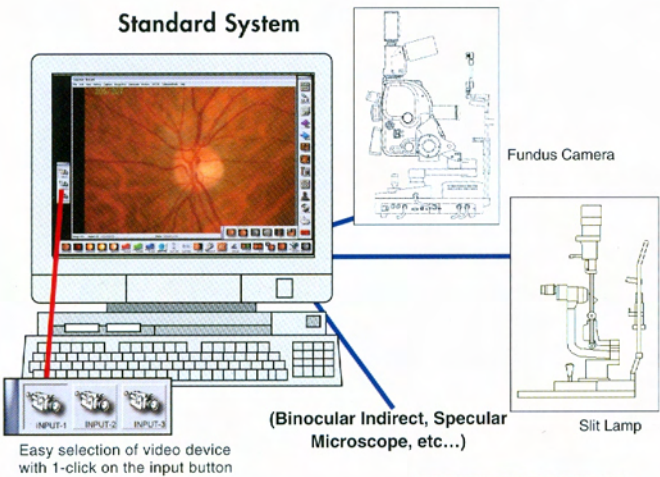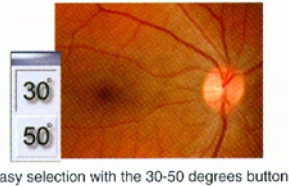
Image Capture
High specifications but simple operations

3 instrument inputs in 1 imaging system

■**Choice of variable inputs**:
Y/C, VBS/RGB, composite or USB, IEEE1394.

■**Up to 3 different digital/video observation devices**
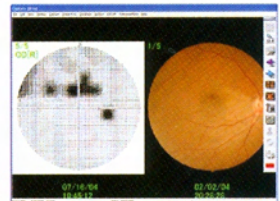1-click switch. ("Portable VK-2" supports USB/IEEE1394 input only.)

Standard System

Fundus Camera

(Binocular Indirect, Specular Microscope, etc...)

Slit Lamp

Easy selection of video device with 1-click on the input button

■**Electronic 30 degrees Image Capturing** (available for VX-10), enabling the saving of the macular's image in 30° size.
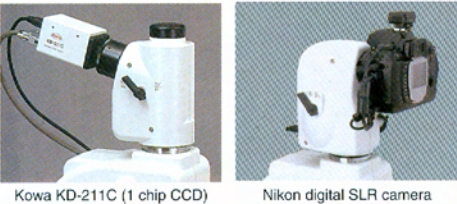
Easy selection with the 30-50 degrees button

Sophisticated Image Capturing

■**Automatic switching of FA and Color**:
in ICG, FA mode, high speed capturing (1 frame/sec, depends on CCD camera), and timer is displayed on the monitor (linked to Kowa Fundus Cameras).

■**Multiple Timers** (in FA mode) selectable for management of several patients' timer counts.

Colors of "Clock" marks change to help you recognize active timer counts.

■**Link to Perimeter**: this Kowa's unique function allows total management of fundus images and perimetry results.

Optional Perimeter Application for AP-5000C

■Stereo Assistant makes stereo images easy to obtain through simple instructions.

■Variable mode set from the Trigger input.

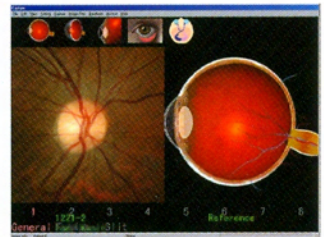## The VK-2 supports the latest high resolution cameras for best detailed images possible

Kowa KD-211C (1 chip CCD)

Nikon digital SLR camera

■2.1 megapixel digital color CCD camera, Kowa "KD-211C"
■2.1 megapixel×3 (total 6.3 megapixel) CCD digital color camera, Kowa "KD-630C"
■1.4 megapixel B/W digital CCD camera, Kowa "KD-144i"
■3 CCD RGB color camera, "Sony*[1] DXC series"
■Specific Nikon*[2] digital SLR camera

Patient Observation
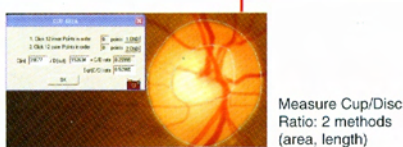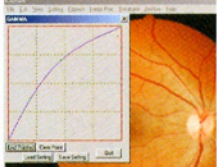**Line-up of the best tools for Informed Consent**

Patient Education

■Image comparisons enhanced with the **Square Function** (2 images) cropping images for better views.

■**Reference(Template) Image**:
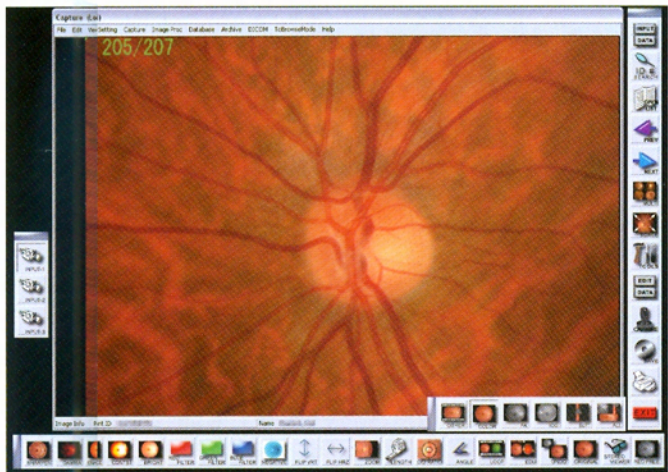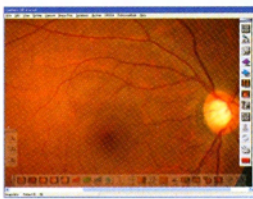Patient images can be compared with stored reference image.

64 reference images can be stored.
(8 reference images per 8 reference categories.)

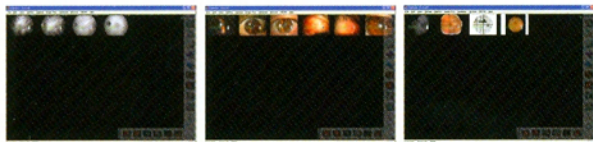## Image Processing according to Diagnostic Needs

■Simple click on Image **Processing Toolbar** for ideal image display (sharpen image, gamma process, enhance image, contrast, brightness, analysis with RGB filter, negative image, flip image, zoom, measure length, measure cup/disc ratio, measure angle, loop, undo, original, reference (template) image).

Gamma Process: change the gamma curve on the image

Measure Cup/Disc Ratio: 2 methods (area, length)

■**Translucent Toolbar**: the toolbar has a level of transparency to make the displayed image visible through it, to help better visibility of the display. The toolbar changes to full opacity (no transparency) when the mouse cursor overlaps (toolbar translucency and orientation are customizable).
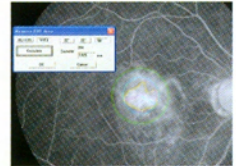
■**Fully equipped for informed consent**

■**Capture Type Toolbar**: easier view with a simple click on the toolbar for multiple display of images of a same capture type among color, FA, ICG, slit and other.

Database system
Designing imaging treasures

Image Processing according to Analysis Needs

■**Multiple Image Display**: easy analysis with 2, 4, 6, 9, 16, 36 images displayed at the same time.

Multiple image display

Display chance to a negative with just 1-click on the "NEGATIVE" button on the toolbar

■**Database Display**: patient's names, ID, information, associated records, current sessions, diagnosis, edit database and more, all can be administered and displayed through the simplest operations, just administered to optimized efficiency.

Display Multiple Patient Images

Extended Functions
Simplicity for perfection

■**PDT area measurement**:

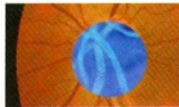Marking of "PDT" (3 methods "DIA", "AREA","AUTO" are selectable)

■**Magnifying Glass**:
the mouse cursor changes into a customizable magnifying lens (when left mouse button is pressed).

Normal lens   Blue filter   Negative filter

■**Stereo Viewer**, featuring Kowa's unique moving 3D.

1-Click simple controls

■**Montage Function**:
this function is enhanced with an advanced algorithm to obtain panorama images that are easy to observe. Automatic positioning with fine rotation adjustment and smoothing function is also available.

■**And more**: merge and subtract, noise reduction, histogram chart, analysis of gray level, auto enhance (multiple display), each enhance function, red free filter processing, edit data, input data, search data.
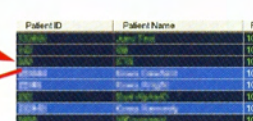
High capacity storage and archive
Unlimited data bank of your own

■CD-R, DVD-R, DVD-RW optical media for easy archive.
■Support Twain32 image scanner.
■Selectively archive enabling savings of selected data to any media.
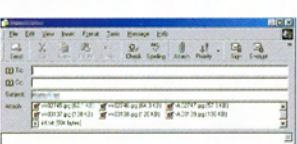
Searching,Selecting,Saving

■Direct copying of images to external disk drive.
■Opening and addition in the VK-2 database of other image files(JPEG, Bmp).

Special Functions
Always identifying every image

■**E-mail function**: quick and easy sending by e-mail (Outlook Express required) of selected images. Furthermore, together with the selected images an "inf.txt" file is automatically attached with the corresponding patient information.

■**Header and Footer for Printing** to facilitate documentary handling.
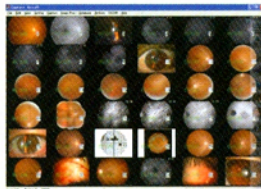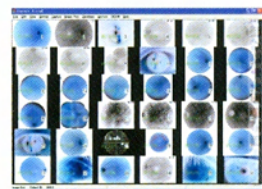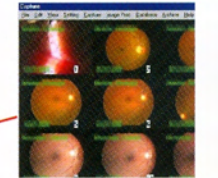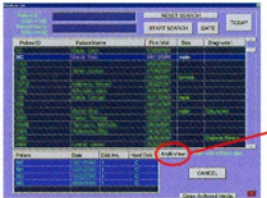
■**Direct image printout.**