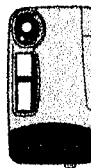
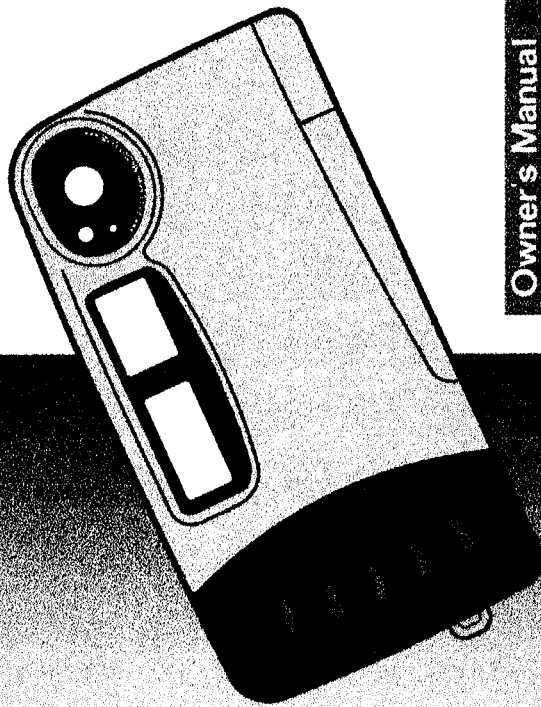


QTK 99-F037
FCC ID: NJB 99620/22

Digital Camera OWNER'S MANUAL



A942620-01

Owner's Manual

Manuel d'utilisation

Benutzer Handbuch

Guida Utente

Manual de Usuario

使用手冊

Warranty Policy

This camera is under warranty for one full year from the date of purchase by the original purchaser. In case of defects in materials or workmanship, we will replace or repair the camera free of charge. This warranty applies to the camera only. This warranty does not include batteries, or other accessories which have not been manufactured by our company. This warranty will not be honored if the camera has been mishandled or tampered with, or altered by anyone other than the manufacturer. Other than for the warranty herein, we are not responsible for loss, damage, or inconvenience of any kind.

A defective camera being returned under warranty must be accompanied by a brief description of the difficulties encountered and also by a proof of purchase with the date of purchase clearly indicated. All related transportation costs and insurances are at the owner's expense. Any alteration of this warranty cannot be made without Protec's written approval.

FCC Notice

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 commercial 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, detectable by turning the equipment in question 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 distance between the equipment and the receiver; Connect the equipment to an outlet on a different circuit than that which the receiver is connected to; Or consult the dealer or an experienced radio/TV technician for help.

NOTE

A shielded-type DC power cable incorporated with a ferrite core is required in order to meet the FCC emission limits and also to prevent interference to the nearby radio and television reception.
Use only shielded I/O cable incorporated with a ferrite core to connect this equipment to host computer and TV set. Shielded A.C. power cord and shielded I/O cables are required in order to meet the FCC emission limits. It is essential that only the supplied power cord and I/O cable(s) be used.



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Getting Started

Congratulations on purchasing your new Digital Camera. This camera is a state-of-the-art camera bringing to you the ease of use of traditional cameras combined with such high-tech functionality as full-color LCD (Liquid Crystal Display) photo previewing, allowing you to immediately see the pictures you have just taken; a built-in, non-expiring flash, up to 2MB bytes or more of digital memory for storing your pictures; and an auto-flash sensor, which automatically detects whether the flash should be engaged or not while taking a photo.

Once you have finished taking your pictures, and have uploaded them to a computer, you can then use image editing software to enhance them before sending them off to print or you can print the pictures you took through the direct printing interface.

What's Inside:

- 1 Digital camera
- Quickstart guide
- Owner's manual
- Serial cable for PC (Optional for Macintosh)
- USB cable for PC
- Driver for Windows in diskette
- Image editing software
- 4 x AA alkaline batteries
- 6.0V AC power adaptor

Optional Items:

- 4MB, 8MB, 16MB, 32MB, 48MB Compact Flash card.
- Mac Kit -Driver for Mac in diskette
- Serial cable for Mac

CD-ROM Contents

- Photo image editing software - allows you to quickly and easily touch up any photo captured with your camera.
- TWAIN Acquire module - lets you download pictures from all TWAIN-compliant devices straight into your computer.

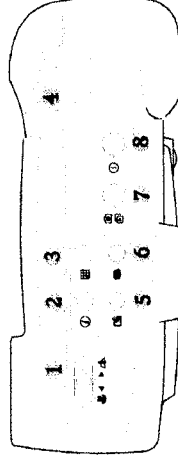
System Requirements (Windows)

- Personal computer with minimum 486, 33MHz processor
- Microsoft Windows operating system (Windows95/98 ready)
- 8MB or more of RAM
- 30MB of hard disk space
- Available serial or USB port and CD-ROM drive
- Color display (800x600 24-bit or higher recommended)

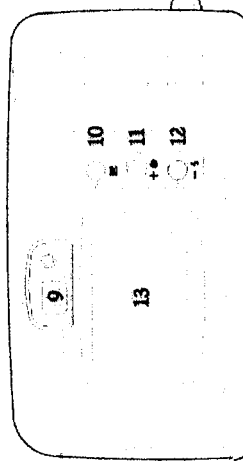
System Requirements (Macintosh)

- Power PC or above
- System 7.5 or higher
- 8MB or more of RAM
- 30MB of hard disk space
- Available serial or USB port and CD-ROM drive
- Color display (800x600 24-bit or higher recommended)

Getting to know the camera



- 1 Macro/Normal Mode switch
- 2 Information Button
- 3 Multiple Display
- 4 Shutter Release
- 5 Erase
- 6 Display
- 7 Record/Play
- 8 Power



- 9 Viewfinder
- 10 Menu
- 11 Forward/Self-Timer
- 12 Backward/Flash
- 13 LCD Display

Using the camera Power Supply

This camera features a two-way power supply that lets you use either batteries (AA-size Alkaline) or a household AC current.

Inserting Batteries

- 1 Place your thumb on the battery door.
- 2 Slide the battery door away from the camera.



Bottom view of the camera



- 3 Insert the batteries as indicated on the inner side of the battery door.

Notes:

- If you are not going to be using the camera for an extended length of time, then you should remove the batteries to prevent leaks or corrosion.
- Never use manganese batteries.
- Never mix old and new batteries.
- Low temperature (under 0°C) may reduce the output efficiency of batteries, thereby shortening the operation time of camera.
- The recommend battery is PANASONIC ALKALINE DURACELL ULTRA or rechargeable battery.

Battery Life Indicator

When the camera has sufficient power, the Power icon on the LCD display of the camera remains dark. When the power is low, the Low Power icon is Flashed to indicate that the batteries are weak and need to be replaced. Also, do not use the Flash or Auto-Flash features while battery power is low. Generally, once the Low Power icon comes on, 10 minutes of operation time is available. (When the batteries are completely dead, the camera will not turn on.)

Flash Memory

The camera features flash memory for storing image information. This memory does not require electrical power to function, so you will not lose any pictures you took when the camera is turned off or low on power. If the batteries go dead, simply insert a new set or connect the AC power supply and you will be able to retrieve and view the previously captured photos.

Extended Flash Memory

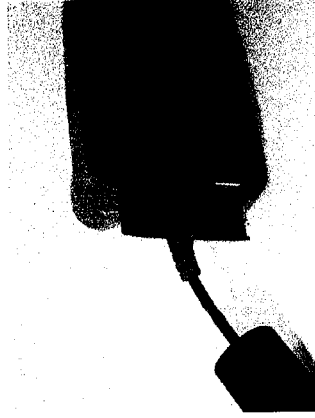
You can extend the capabilities of your camera by adding the Compact Flash Memory card accessory to it. This card is a removable ATA-compatible memory device that gives your camera additional memory. With 2M memory, for example, you can take 32 extra pictures in Normal mode, or 16 pictures in Fine mode. To insert the Compact Flash Memory card, open the card slot on the bottom of the camera and insert the card with the back side facing you and heading inward. Next, close the card slot cover and the camera memory is updated automatically. To remove the card, push the Eject key on the right side of the slot.



Using AC Power

To run the camera on standard AC power, use the 6.0V/2.5AC Adaptor.

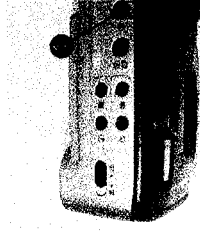
- Always be sure to use the AC adaptor which comes with the camera, or optional from the manufacture. Any other inappropriate adaptor may cause damage to the camera which is not covered under the warranty.
- Grasp the adaptor, not the cord, when unplugging the adaptor from a wall socket
- If the power cord becomes damaged (exposed wires, disconnection, etc.) please purchase a new AC adaptor. Use of a damaged cord may cause fire or electrical shock.
- Switch off the power to the AC adaptor before unplugging it from the wall socket.



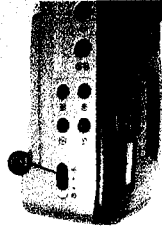
Auto Power Off

Power automatically turns off whenever you do not perform any camera operations for a specific interval of time. You can set the interval from 2 up to 59 minutes.

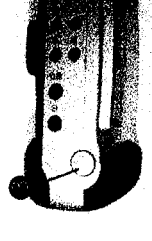
Taking Pictures



- 1 Turn the camera on by pressing the Power button. When the camera is activated, you will see a small LED light on beside the Viewfinder. If you would like to use the LCD display, you can turn it on by pressing the Display button.



- 2 Set the camera to Normal if the object or view is 50cm or more away from the camera, and to Macro if the object or view is between 15 and 30cm away. This is set using the Macro/Normal mode switch.
*Note: Image Storage capacity is as follows:
With 2M memory, in Normal mode - 32 images; in Fine mode - 16 images.*



- 3 Using the LCD display, or the viewfinder, compose your image. When you are ready, press the Shutter Release button.
- 4 The LCD screen pauses and in a few seconds a static copy of the image appears while the camera saves it to memory. Once the LCD resumes previewing, you can take another picture or press the Record/Play button to the PLAY mode to view the image you just recorded.

Using the LCD Display

Using the built-in Liquid Crystal Display (LCD), you can view pictures in a few seconds after capturing them. The following section describes how to use the LCD and its various functions.

Note: You need not activate the LCD to take pictures - however, using it while capturing shortens the lifespan of your batteries.



Note: To remove all icons from the LCD display, press the *Information* button on top of the camera. Pressing it a second time returns all icons to the screen.

Adjusting LCD Brightness

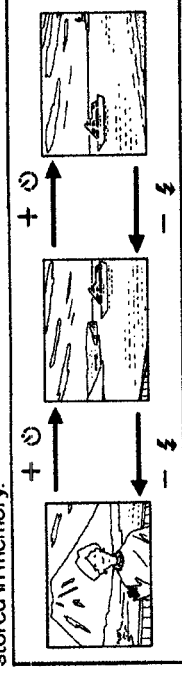
The LCD display comes with the a brightness feature that allows you to change how images are displayed on the LCD screen. To turn the brightness of the LCD either up or down, turn the camera over so that the bottom side is facing up. In the center of the camera's bottom side is a radial dial. Turning the dial with your fingernail or a small coin adjusts the brightness up and down.

Viewing Pictures on the LCD

The Display button turns the LCD display on, allowing you to see each picture as it is taken.

- 1 After turning on the Power, press the Record/ Play button to switch to the Play mode. The LCD display warms up and then displays the last picture taken. If there are no pictures in the camera, then a message displays informing you of this.

- 2 Press the Forward or Backward buttons to scroll through the pictures stored in memory.



- 3 Press the Record/ Play button again to return to Record mode and resume taking pictures.

Viewing Thumbnails

In addition to previewing single frames on the LCD screen, you can also view 9 thumbnail images of the pictures in the storage queue. This gives you the advantage of being able to see at once all the pictures you have already taken rather than having to scroll through them all one by one.

To view image thumbnails:

1. Make sure that you are in Play mode.
2. Next, press the Multiple Display button to enter the Thumbnail mode (if there are more pictures than thumbnails, use the Self/+ or Flash/- to scroll to the next or previous screens.)
3. Press the Multiple Display button again to exit Thumbnail mode.

Menu Mode

To enter the Menu mode, press the Menu button and release it. The LCD image is replaced by the built-in functions menu containing options and features to set the camera status. To use the functions, simply select the one you want to engage with the Self/+ or Flash/- buttons, and then press the Menu button.

The eight functions in Menu mode are:





- **Compensation** - allows you to set the Exposure Value(EV) compensation manually from -1.8 to +1.8 in 0.3 steps. Use Self/+ button to add the value, or Flash/- button to subtract to value, then press Menu button to set the value.
- **WBalance** - different light sources produce light of different colors. White balance allows you to obtain the highest color fidelity possible by taking into account the lighting conditions in which the camera is operating. Five white balance modes are available:
 AUTO - automatically chooses the best white balance for given lighting conditions.
 DAY LIGHT - designed for sunny day photos taking.
 SHADY - designed for photos taking under shadow.
 LAMP - designed for indoor lamp lighting.
 FLUORECENT - designed for indoor Fluorecent lighting.
 Select the desired White Balance option by pressing the Menu button until it appears, and then hit the Self/+ button to set the value.
 Note :The camera resets to Auto (White Balance) if the power is switched off.

- **Auto Play** - defines the interval between images when viewing them on the LCD screen automatically. Press the Menu button to increase the Auto Play interval. Selecting the Self/+ button to start slide show or the Flash/- button to return to the main menu.
- **Transfer** - copies images in camera memory to Compact Flash memory card. After the command is executed the camera will display one of the following messages:
 TOTALLY MOVED - all images files have been successfully moved to the Compact Flash memory card.



PARTIALLY MOVED - only some of the images have been moved to the Compact Flash memory card. This message will appear if there is not sufficient free space on the card for all the images in the camera's memory.

NONE MOVED - none of the image files have been transferred to the Compact Flash memory card. This message will appear if there is no free space on the card, if there is no card installed, or if there is a card error.

- **Auto Off** - allows you to set the interval for auto power off time. Press either the Self/+ or Flash/- button to increase the interval of shut off time. Selecting the Menu button to accept the setting. Note that you can set the interval from 2 to 59 minutes.
- **Quality** - toggles between Normal and Fine mode. All images are captured at 640x480 monitor resolution. With 2MB memory, 32 images will be captured in Normal mode. While 16 images will be captured in Fine mode.
- **Format** - this command is used to manually format the Compact Flash memory card and format internal flash memory also. The camera will prompt you to confirm this operation before formatting the card.

Notes:

1. If an unformatted or incorrectly formatted Compact Flash memory card is installed, the camera will automatically format the card when powered on.
2. The Format command will totally destroy all data stored on the Compact Flash memory card, while the Erase All command will only delete files recognized by the camera as image files of the type that it is capable of producing.
- **Time** - allows you to set the time and date that appear on your pictures. Use the Self/+ or Flash/- button to set the value in the selected field, and the Menu button to select the next field. Scrolling to the end field and selecting the Menu button to accept the setting.



Erasing Pictures from Memory

The Erase button allows you to remove any unwanted pictures from the memory.

- 1 After turning the camera on, press the Record/Play button to enter the PLAY mode.
- 2 To remove a picture, scroll to the picture then press the Erase button . A dialog asking you to confirm the deletion appears on the LCD. Press the Self/+ button for Yes, the Menu button for Quit, and the Flash/- button for ALL. After erasing a picture, exit to the Play mode by pressing the Menu button again.

Defining Picture Quality

Your digital camera can take pictures at two different modes: Normal (compressed) and Fine(less compressed). Both modes take pictures at 640 x 480 monitor resolution. Note, however, that your camera can only store 32 images in Normal mode or 16 images in Fine mode with 2MB built-in flash memory.

To define your picture quality:

- 1 Click the Menu button to display the MAIN MENU options in the LCD display.
- 2 Using the Self/+ or the Flash/- buttons, cycle through the options until you have selected the Quality option.
- 3 Press the Menu button into the Quality sub menu , use the Menu button to change quality setting .Then use the Self/+ button to set , or the Flash/- button to quit with change.



Using the Flash

The digital camera has three different flash modes: AUTO (the default mode); FILL; and OFF. Each of these modes can be accessed via the Flash/- button on the backside of the camera.

-  AUTO - the camera automatically fires the flash when the brightness of the subject or scene is too low.
-  FILL - fires the flash regardless of the brightness levels in the vicinity. However, the strength of the flash varies according to the ambient brightness of your surroundings, so the more light in the area, the lower level of the flash.
-  OFF - the flash disengaged no matter what the ambient brightness of the surroundings is.

Using the Self-Timer

The Self-Timer is handy for creating a delay between the time you press the shutter and the time the picture is taken. You can activate the self-timer by pressing the Self/+ button at anytime in Record mode. Once engaged, each time you press the Shutter Release button on top of the camera there is a 10 second delay; this delay is marked by flashing the Self-Timer LED once per second for seven seconds, then twice per second for the last three seconds.

Memory Full

Once you have taken the number of pictures allowed by the camera , you must erase them before capturing new ones. To save pictures, transfer them from the camera to your computer via the appropriate cable (PC or MAC) and the I/O port on your computer.

When your camera memory is full, the green memory light will flash every one second. Also, the LCD screen displays a STORAGE FULL message.

Connecting to Your Computer

For RS232 interface

- 1 Plug one end of the serial cable into a COM port (on a PC) or the printer or modem port (on a Macintosh). These ports are located at the back of your computer.



- 2 Connect the other end of the serial cable to the camera.
- 3 Turn on your camera.

For USB interface (Optional, for PC only):

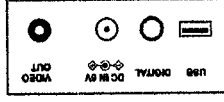
- 1 Plug one end of the USB cable into the USB port.



- 2 Connect the other end of the USB cable to the camera.
- 3 Turn on your camera.

The Digital Interface

The digital camera is capable of two types of output: to video, or to a personal computer. On the left side of the camera are four ports : video output, power supply, digital output , and USB.



The video output connector allows you to transmit stored images (640x480 in size) or live video to a standard television set.

When the LCD monitor is off, the camera cannot output via this port. To transmit stored images to your television or VCR, simply attach one end of a Video line to the video port of the digital camera, and the other end to the Video port on the television or VCR.

To download images to your computer, you need to attach the digital cable to the digital port (or USB port) below the video port, and the other end of the cable to the back of your computer. Once both ends are properly attached, use the software included with this camera to capture the queued images stored within it to your computer's hard disk, where you can later print them out or edit them in imaging software.

The camera's digital output connector can be set to transmit data at varying baud rates, depending upon the capabilities of your computer. If the camera, while attached to your computer, remains inactive for a given length of time, it shuts down automatically.

Installing capture software

Once you have got your camera connected to your computer, the next step is to transfer the pictures contained in the camera memory to your computer's hard disk. However, this cannot be accomplished until your first install the appropriate capture drivers and software.

- 1 Insert the TWAIN driver disc into your floppy disk drive.
- 2 If you are in Windows95/98, select the Run command from the Start menu. When the Run dialog box opens, type **A:\setup** in the entry line and click OK, where A is the drive letter of your floppy disk drive. If you are on a Macintosh, double-click the installer icon.
- 3 The setup program begins - simply follow the on-screen instructions to complete the installation.



Appendix 1 : LCD Icons

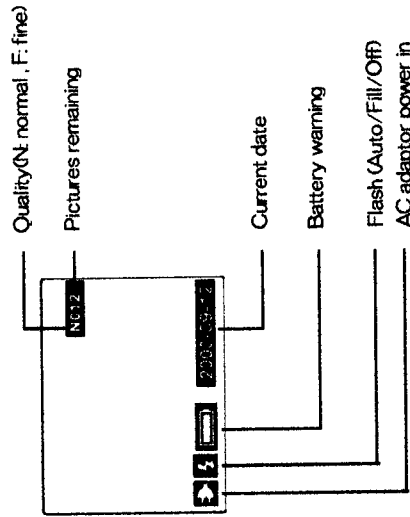
Here's a summary of all the icons found in the LCD screen of the digital camera, and what they mean.

- Fill Flash
- No Flash
- Auto Flash
- Self-Timer on
- Full battery power
- Half battery power
- Low battery power
- Empty battery power

- F Fine Quality mode
- N Normal Quality
- Save to Build-in Memory
- Save to Compact Flash Card
- AC adaptor power in

Appendix 2 : Record Mode Icons

Here's a quick run-down of the icons found in the LCD displayscreen during Recording:



Appendix 3: Digital Camera Specifications

Image Sensor:	1/4" CCD, with 350,000 pixels
LCD Display:	18" color display with 15 image/sec for movie-like display
Image Resolution:	640 x 480 pixels
Color:	24-bit (167 million colors)
Memory:	2MB internal flash memory
Storage:	min. 32 pictures with JPEG data compression in 2MB built-in memory.
Lens:	Normal:0.5 m-infinity.
	Macro:28 cm(20-40cm)
Built-in Flash:	Automatic, fill, off
Shutter Speed:	1/15-1/10000 sec (Auto)
Connectors:	AC adaptor, RS232 serial port, NTSC video output port
	USB port
Weight:	0.67 lbs (with battery)
Dimensions:	(W)1.9" x (D)5.1" x (H)2.7"
Additional:	Compact Flash card slot

* Design and specifications are subject to change without notice.