

Installation Instructions



IMPORTANT SAFEGUARDS

1. Read Instructions - All the safety and operating instructions should be read before the unit is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the unit and in the operating instructions should be adhered to.
4. Follow Instructions - All operating and use instructions should be followed.
5. Cleaning - Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. Attachments - Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. Water and Moisture - Do not use this unit near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; near a swimming pool; in an unprotected outdoor installation; or any area which is classified as a wet location.
8. Accessories - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury to a person and serious damage to the unit. Use only with a stand, tripod, bracket, or mount recommended by the manufacturer or sold with the product. Any mounting of the unit should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.

An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
9. Ventilation - Openings in the enclosure, if any, are provided for ventilation, to ensure reliable operation of the unit, and to protect it from overheating. These openings must not be blocked or covered. This unit should not be placed in a built-in installation unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
10. Power Sources - This unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply you plan to use, consult your appliance dealer or local power company. For units intended to operate from battery power or other sources, refer to the operating instructions.
11. Grounding or Polarization - This unit may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

Alternately, this unit may be equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
12. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.
13. Power Lines - An outdoor system should not be located in the vicinity of overhead power lines or other electric light or power circuits or where it can fall into such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal. U.S.A. models only - refer to the National Electrical Code Article 820 regarding installation of CATV systems.
14. Overloading - Do not overload outlets and extension cords as this can result in a risk of fire or electric shock.
15. Object and Liquid Entry - Never push objects of any kind into this unit through openings, as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.

16. Servicing - Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
17. Damage Requiring Service - Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power supply cord or plug is damaged.
 - b. If liquid has been spilled or objects have fallen into the unit.
 - c. If the unit has been exposed to rain or water.
 - d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
 - e. If the unit has been dropped or the cabinet has been damaged.
 - f. When the unit exhibits a distinct change in performance--this indicates a need for service.
18. Replacement Parts - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
19. Safety Check - Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.
20. Coax Grounding - If an outside cable system is connected to the unit, be sure the cable system is grounded. U.S.A. models only--Section 810 of the National Electrical Code, ANSI/NFPA No.70-1981, provides information with respect to proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
21. Lightning - For added protection of this unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power line surges.

FCC & ICES INFORMATION

(U.S.A. and Canadian Models Only)

WARNING - This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules and ICES-003 of Industry Canada. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and radiates radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Intentional or unintentional changes or modifications not expressly approved by the party responsible for compliance shall not be made. Any such changes or modifications could void the user's authority to operate the equipment.

If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No.004-000-00345-4.

Warning: This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

SAFETY PRECAUTIONS

	CAUTION RISK OF ELECTRIC SHOCK. DO NOT OPEN!	
CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		

This label may appear on the bottom of the unit due to space limitations.



The lightning flash with an arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE UNITS NOT SPECIFICALLY DESIGNED FOR OUTDOOR USE TO RAIN OR MOISTURE.



Attention: Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.



Power Disconnect. Units with or without ON-OFF switches have power supplied to the unit whenever the power cord is inserted into the power source; however, the unit is operational only when the ON-OFF switch is in the ON position. The power cord is the main power disconnect for all units.

SECURITE

	ATTENTION RISQUE D'ÉLECTROCUTION. NE PAS OUVRIR	
DANGER: POUR ÉVITER TOUT RISQUE D'ÉLECTROCUTION, NE PAS OUVRIR LE BOÎTIER. IL N'Y A PAS DE PIÈCES REMPLAÇABLES À L'INTÉRIEUR. POUR TOUT RÉVISION, S'ADRESSER À UN TECHNICIEN SPÉCIALISÉ.		

En raison de limitation de place, cette étiquette peut être placée sur le dessous de l'appareil.



L'éclair fléché dans un triangle équilatéral, avertit l'utilisateur de la présence d'une "tension dangereuse" non isolée à l'intérieur de l'appareil et d'une valeur suffisante pour constituer un risque d'électrocution.



Le point d'exclamation contenu dans un triangle équilatéral, avertit l'utilisateur de la présence, dans la documentation qui accompagne l'appareil, de consignes d'utilisation et de maintenance importantes.

ATTENTION
POUR ÉVITER LE RISQUE D'ÉLECTROCUTION OU D'INCENDIE, NE PAS EXPOSER À LA PLUIE OU À L'HUMIDITÉ UN APPAREIL NON CONÇU POUR UNE UTILISATION EXTÉRIEURE.



Attention: L'installation doit être effectuée uniquement par du personnel de service qualifié conformément à la réglementation du Code Electrique National ou à la réglementation locale.



Disjonction de l'alimentation. Les appareils avec ou sans commutateurs ON-OFF sont alimentés à chaque fois que le cordon d'alimentation est branché à la source d'alimentation; toutefois, les appareils disposant de commutateurs ON-OFF ne fonctionnent que lorsque le commutateur ON-OFF est sur la position ON. Le cordon d'alimentation est la disjonction d'alimentation principale pour tous les appareils.

SICHERHEITSVORKEHRUNGEN



VORSICHT

STROMSCHLAGEGEFAHR!
BITTE NICHT ÖFFNEN!



VORSICHT: UM EINEN ELEKTRISCHEN SCHLAG ZU VERMEIDEN, ABDECKUNG NICHT ENTFERNEN. WARTUNGEN ALLER ART QUALIFIZIERTEM PERSONAL ÜBERLASSEN.

Aus Platzgründen kann diese Warnung auf der Unterseite des Gerätes angebracht sein.



Das Blitzsymbol im gleichseitigen Dreieck soll den Benutzer auf nicht isolierte "Hochspannung" im Gehäuse aufmerksam machen, die eventuell stark genug ist, um einen elektrischen Schlag zu verursachen.



Das Ausrufezeichen im gleichseitigen Dreieck soll den Benutzer auf wichtige Bedienungs- und Wartungsanleitungen in der dem Gerät beigelegten Literatur aufmerksam machen.

**WARNUNG
UM FEUER ODER ELEKTRISCHE SCHLÄGE
ZU VERMEIDEN, SETZEN SIE DAS GERÄT
NIEMALS REGEN ODER FEUCHTIGKEIT AUS.**



Achtung! Die Installation sollte nur von qualifiziertem Kundendienstpersonal gemäß jeweilig zutreffender Elektrovorschriften ausgeführt werden.



Netzanschluß. Geräte mit oder ohne Netzschalter haben Spannung am Gerät anliegen, sobald der Netzstecker in die Steckdose gesteckt wird. Das Gerät ist jedoch nur betriebsbereit, wenn der Netzschalter (EIN/AUS) auf EIN steht. Wenn man das Netzkabel aus der Steckdose zieht, dann ist die Spannungszuführung zum Gerät vollkommen unterbrochen.

PRECAUCIONES DE SEGURIDAD



PRECAUCION

¡PELIGRO DE DESCARGAS
ELECTRICAS, NO ABRIR!



PRECAUCION: PARA REDUCIR EL RIESGO DE CHOQUE ELÉCTRICO, FAVOR NO ABRIR LA CUBIERTA. ESTE EQUIPO NO CONSTA DE PIEZAS O PARTES QUE REQUIEREN SERVICIO O MANTENIMIENTO. PARA REPARACIONES FAVOR REFERIRSE A UN TÉCNICO CALIFICADO.

Debido a limitaciones de espacio, esta etiqueta puede aparecer en la parte inferior de la unidad.



El símbolo representado por un relámpago con punta de flecha dentro de un triángulo equilátero, se muestra con el objetivo de alertar al usuario que existen "voltajes peligrosos" sin aislamiento, dentro de la cubierta de la unidad. Dichos voltajes pueden ser de tal magnitud que constituyen un riesgo de choque eléctrico a personas.



El símbolo de exclamación dentro de un triángulo equilátero, se muestra con el objetivo de alertar al usuario de que instrucciones de operación y mantenimiento importantes acompañan al equipo.

**PELIGRO
PARA EVITAR EL PELIGRO DE INCENDIO Ó
CHOQUE ELÉCTRICO, NO EXPONGA A LA
LLUVIA Ó HUMEDAD, EQUIPOS QUE NO HAN
SIDO DISEÑADOS PARA USO EXTERIOR.**



Atención: La instalación de este equipo debe ser realizada por personal capacitado, solo en acuerdo, y en cumplimiento de normas del "National Electric Code" (Código Eléctrico Nacional) ó las normas del Gobierno Nacional Local.



Para Desconectar la Alimentación: Unidades no equipadas con interruptores ON/OFF, son alimentadas cuando el cable de alimentación es conectado a la corriente eléctrica. Las unidades equipadas con interruptores son alimentadas de igual forma, pero adicionalmente requieren que el interruptor esté posicionado en ON. El cable de alimentación es el medio principal de desconexión del equipo.



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

WARNING: Electrostatic-sensitive device. Use proper CMOS/MOSFET handling precautions to avoid electrostatic discharge.

NOTE: Grounded wrist straps must be worn and proper ESD safety precautions observed when handling the electrostatic-sensitive printed circuit boards.

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For additional information or to speak to a representative,
please contact the Philips Communication, Security & Imaging
location nearest you:

The Americas: 1 800 326 3270
Europe & Middle East: 31 40 278 1222
Asia Pacific Region: 65 350 1859

or visit our Web site at www.philipscsi.com.

SECTION I: INTRODUCTION TO THE **System4® SERVER**

1.1 Guide to This Manual

This manual contains all the information necessary to safely install, configure (program), and operate the *System4* Server. Consult the **Table of Contents** for a detailed list of topics covered. Step-by-step procedures, illustrations, and sample menus guide you through each phase of system setup and configuration.

- **System4 Server Installation** includes instructions for mounting and connecting the *System4* Server components and initializing the configuration software (i.e. running the software for the first time following system installation).
- **System4 Server Configuration** includes basic instructions for working with the configuration software, as well as more detailed instructions that guide you through the menu options, which enable customization of system operation to suit your system application requirements.
- **System4 Server Operation** explains the functions of daily system operation, including viewing and capturing video, setting up motion masks, and using the scheduling feature.
- **System4 Server RemoteView** provides instructions for using the RemoteView software application that allows you to download and view live or recorded video from the *System4* Server while at a remote (PC) location.

This manual also contains detailed technical reference materials, which are located at the back of the manual in the **Appendix**.

1.2 Unpacking

Unpack carefully. This is electronic equipment and should be handled with care to prevent damage to the unit. Check for the following items:

- ✓ *System4* Server PC with keyboard, mouse, 3-1/2 inch floppy drive, CD-ROM drive, and 10/100 BaseT Ethernet card (monitor NOT included)
- ✓ *System4* Multiplexer (model LTC 2682/90)
- ✓ *System4* Server Instruction Manual (this manual)
- ✓ *System4* Multiplexer Instruction Manual
- ✓ *System4* Server Configuration Software*
- ✓ RemoteView Software* on CD-ROM
- ✓ Windows® Operating system on CD-ROM
- ✓ (1) Interface Cable
- ✓ (1) *System4* Console Cable (S1385)
- ✓ (4) AC Power Cables
- ✓ Set of *System4* Multiplexer Rack Mounting Ears

**Software programs are factory-installed on the System4 Server PC. CD-ROMs supplied.*

If any items appear to have been damaged in shipment, replace the item(s) properly in the shipping carton and notify the shipping company. If any items are missing, notify your Philips CSI Sales Representative or Customer Service Representative.

NOTE: The shipping carton is the safest container in which to transport the unit. Save it and all packing materials for future use.

1.3 Understanding the System4 Server

The Philips *System4* Server provides a complete system solution for your security application. The system includes the following components:

- **System4 Server.** PC unit digitally captures, compresses, and stores video supplied by the multiplexer.
- **System4 Multiplexer.** Multiplexes video and provides control functions for up to 16 cameras.
- **System4 Server Configuration Software.** Provides a user-friendly interface for system configuration and operation, including daily scheduling, monitoring, and recording of system camera input.
- **RemoteView Software.** Provides the added advantage of remote viewing of *System4* video (live and recorded) from another PC.

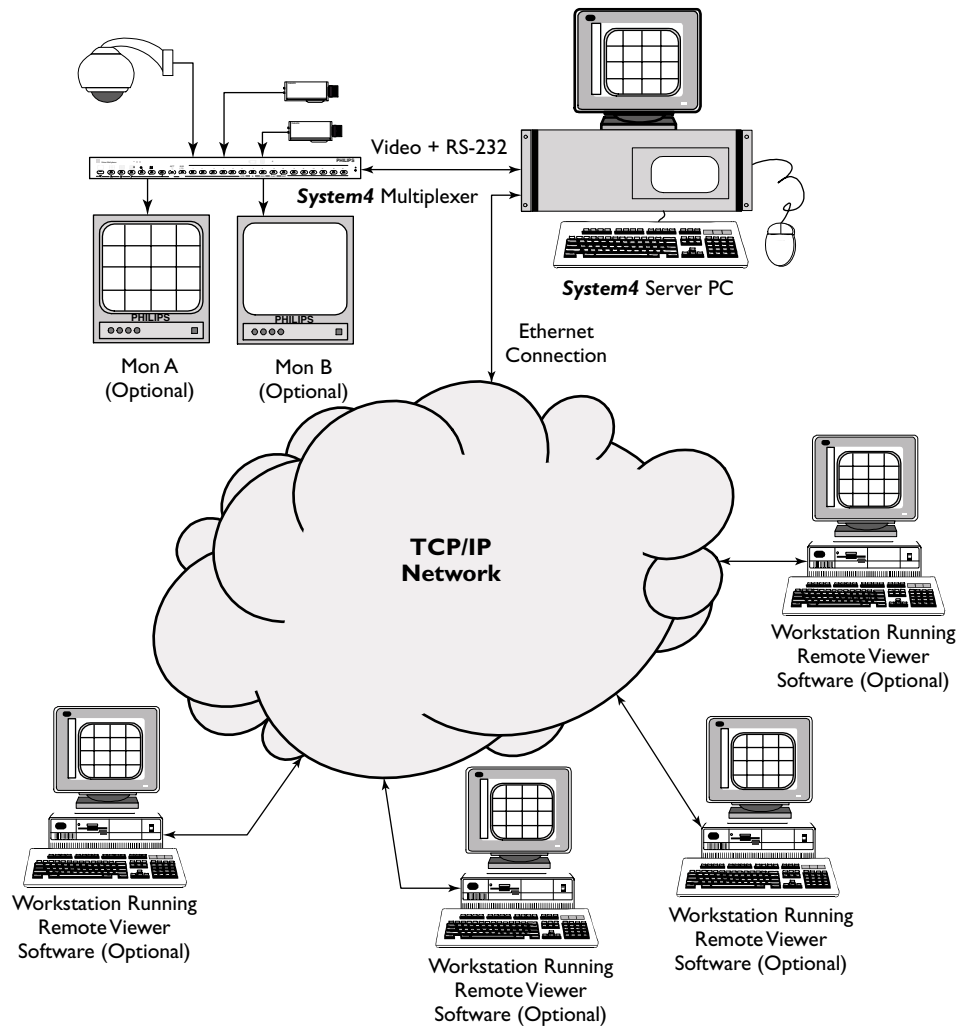


Figure 1 Typical **System4** Server Application Diagram

Philips provides the *System4* Server PC and Multiplexer package in the following configurations (key specifications are outlined for each in the following chart):

Model Number (PC + Multiplexer)	Rated Voltage	PC Power at Rated Voltage¹	PC Hard Drive Capacity
S4SVR	110 to 230 VAC, 50/60 Hz	300 W	150 GB
S4SVRLP	110 to 230 VAC, 50/60 Hz	355 W	240 GB
S4SVREP	110 to 230 VAC, 50/60 Hz	400 W	640 GB

1. Includes power rating of LTC 2682/90 at 30 Watts.

SECTION 2: INSTALLING THE *System4*® SERVER

2.1 Installing the *System4* Server PC Unit

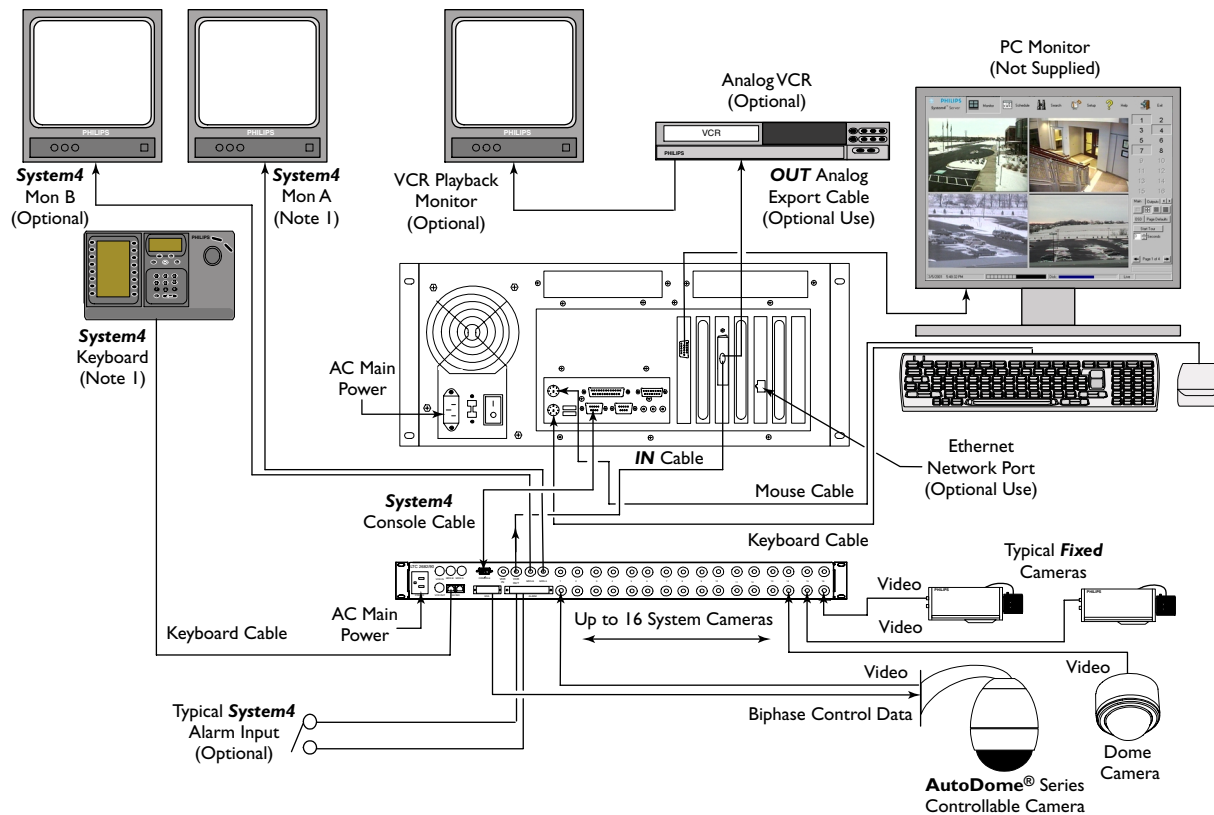
The following information and diagrams guide you through installation of the *System4* Server PC, multiplexer, and peripheral components. The *System4* Server PC is supplied in an enclosure designed to fit a standard EIA 19-inch rack. If applicable, install the PC into the rack using appropriate mounting hardware (not supplied). The PC is also supplied with 2 keys which fit its front panel lock.

The *System4*'s multiplexer is a 16-input digital video multiplexer. When used with the *System4* Server, the multiplexer can output up to 30 unique images of video every second. The multiplexer delivers a time-base corrected signal to the Server PC, which digitizes and stores the images on its internal hard drive.

The *System4*'s multiplexer is supplied in an enclosure suitable for a desktop or rack mount installation. If the unit will be rack mounted, remove the 4 rubber feet on the bottom of the unit, and attach the supplied racking ears to the side of the enclosure. The unit can then be installed in a standard 19-inch EIA rack using appropriate hardware.

Use **Figure 2** to complete the following installation instructions for the *System4* Server PC and multiplexer.

1. Plug the keyboard cable into the keyboard connector and mouse cable into the mouse connector on the rear panel of the *System4* Server PC.
2. Attach the PC monitor (user-supplied) to the monitor connector of the *System4* Server PC.
3. Plug the 25-pin male D-connector end of the *System4* Interface cable into the DB-25 connector on the rear of the *System4* Server PC.
4. Plug the IN connector of the *System4* Server Interface cable to the VCR OUT connector located on the rear of the multiplexer.
5. Connect the OUT connector of the *System4* Server Interface cable to an external video monitor, VCR, or other analog device if you would like to view/record exported *System4* Server video.
6. If images from the *System4* Server will be viewed over a network using the Remote Viewing software, connect a standard 100 BaseT Ethernet cable into the network card (H).
7. Connect the coax cables from the system video cameras to the video input connectors on the rear of the multiplexer.
8. If using video loop-through connections, connect coax cables from the external devices to the appropriate loop-through outputs on the rear of the multiplexer.
9. If the multiplexer will be used in a conventional *stand-alone* manner, you can connect its MON A and MON B outputs to standard video monitors.
10. Connect one end of the 9-pin connector of the *System4* Console Cable to Comm 1 port of the PC. Connect the other end of the cable to the Console port of the multiplexer.
11. If applicable, refer to the manual supplied with the multiplexer to connect any control data and/or alarm inputs/outputs to the multiplexer.
12. Plug the appropriate AC power cords into the power connectors of the *System4* PC, the PC monitor, and the multiplexer. **Verify that the PC voltage selector switch located next to the AC line cord is set to the correct position.**
13. Plug the AC power cords of the PC, PC monitor, and multiplexer into an appropriate electrical outlet (the multiplexer automatically functions when power is provided—there is no power switch).
14. To provide power to the *System4* Server box, use the power switch on the rear panel. To turn on the Server PC, use the power switch on the front panel.



Note 1: These components are required for initial setup, but are optional for system operation.

Figure 2 Connection Details of the **System4** Server PC, Multiplexer, and Accessories

2.2 Initializing the Multiplexer

NOTE: The system will not be able to operate properly unless the next step is completed on the LTC 2682/90 multiplexer.

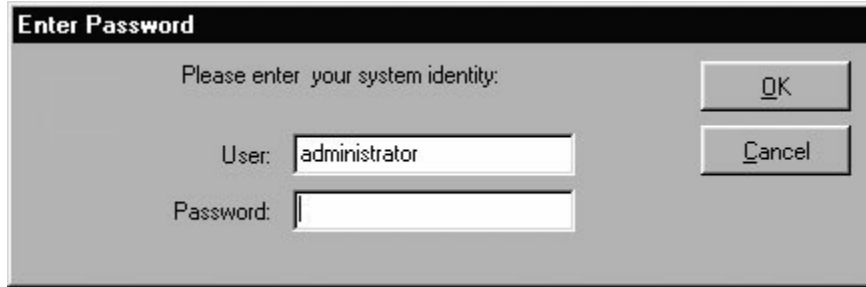
Before the multiplexer can be used with the **System4** Server PC, you must configure it. This is easily done using the LTC 2682/90 multiplexer's (**Version 3.03** or later) on-screen menus (if your multiplexer does not have firmware **Version 3.03** or later, it will need to be upgraded before it can be used with the **System4** Server). With a standard monitor connected to the **MON A** output of the **System4** multiplexer, press **ALT + menu** (i.e., the **ACT** key) to enter the on-screen menu. Once there, use front panel arrow controls to select the **Advanced Menu**. In the Advanced Menu, scroll down the list until you reach the **Remote System4 Setup** option. By default, the setup option will always appear as **No**. Select **Yes**, then confirm your choice. The system will briefly reset, and then it will be ready to accept **System4** Server commands.

2.3 Initializing the Configuration Software

When you turn on the **System4** Server PC for the first time, it will automatically boot into the Windows® desktop and run the configuration software. If the boot-up process stops at the Windows® log-in screen, verify/enter the user name **Administrator**, leave password blank, and click **OK** to continue. From the desktop, you can also start the configuration software program by double clicking the **System4** Server icon.

When the Configuration Software program first begins to run, the **System4 RemoteView** Server program will also automatically start. When this window appears, you can minimize it if you will be using the RemoteView software on a remote PC, or close it if you will not be using remote access.

When you see the Configuration Software's **Enter Password** window as shown below, enter **administrator** for User and **letmein** for Password. The software then scans for connected cameras and opens up to the **Monitor** page.

A screenshot of a Windows-style dialog box titled "Enter Password". The dialog has a light gray background. At the top, it says "Please enter your system identity:". Below this, there are two text input fields. The first is labeled "User:" and contains the text "administrator". The second is labeled "Password:" and is empty. To the right of the input fields are two buttons: "OK" and "Cancel".

NOTE: After initial system startup, be sure to change (customize) your user ID and password immediately. Refer to **Section 3** for complete instructions on how to accomplish this.

CAUTION: Your *System4* Server PC has some of the same capabilities as a regular personal computer. However, it is recommended that you DO NOT use your *System4* Server PC for anything other than operating the *System4* Server Configuration software. Changing software or hardware setups of the operating system could damage the *System4* Server's intended functionality. Refer to the information on **Security Features** in the following section for additional information.

SECTION 3: CONFIGURING THE *System4* SERVER SOFTWARE

3.1 Introduction to the Configuration Software

The *System4* Server Configuration Software provides a user-friendly interface that allows you to quickly and easily monitor system operations and make changes in system functioning. The main configuration screen (shown below) is divided into three areas:

- At the top of the configuration screen is a row of **function buttons** that allow you to access each function so that you can easily set up or change configurations and schedules, perform video searches, or monitor camera inputs.
- The middle section of the configuration screen is reserved for the **operation** of the function selected from the top row of buttons. This section may include view screens, camera buttons, list boxes, and more, depending on the function selected.
- At the bottom of the configuration screen is a **status bar** that displays information about the current date and time, the current status of each camera, disk usage, and whether the system is currently recording.



The Function Buttons

At the top left corner of the configuration main screen are the Philips logo and the six buttons, providing links to the following pages:

- The top left corner where the Philips logo is located is actually a button to access the **Log-on Screen**. This screen is used whenever it is necessary for a different user to log-in to the software.
- The **Monitor page** is the primary way to monitor each connected camera. You can view live and recorded video from user-selectable groups of cameras.
- The **Schedule page** allows you to control when each camera should start and stop recording video. Cameras can easily be set individually or in groups.
- The **Search page** allows you to search for and view recorded video. Just enter a time period and whether you want to search for all video or for events only.

- The **Setup** page is the master page for configuring disk usage procedures, hardware, system users, motion masks, and more.
- The **Help** button allows you to search for help or choose from a menu of help topics.
- The **Exit** button closes the Configuration program.

The Status Bar

The narrow **status** bar at the bottom of the Configuration screen contains the following information:

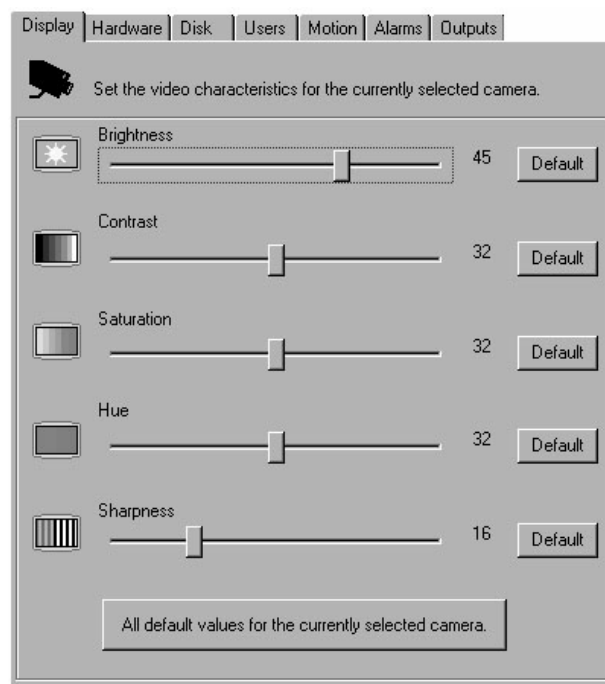
- The current date and time.
- The recording status of up to 16 camera inputs. Each input is represented by a box, with input (1) on the left and the highest-numbered input on the right. If the camera detects a motion or alarm event while in **Motion** or **Alarm** mode, the camera input boxes become a certain color that corresponds with the active recording mode, calling attention to the event.
- The amount of disk space that is full.
- The status of system operation—either **Live** (not recording) or **REC** (recording).

3.2 Setting Up the Configuration Software for System Operation

Many important system functions can be configured through the Configuration main screen **Setup** function button. The **Setup** page (which appears after clicking on the **Setup** button) includes 7 tabs, which are explained in order in this section.

Setup Tab #1: Adjusting the Video Display

To adjust the brightness, contrast, saturation, hue, and sharpness of the displayed video, go to the **Setup** page and choose the **Display** tab.



Working with the Display Tab Screen

1. First, select a camera input (number) button from the bottom of the screen. Then, adjust each setting by moving the box on its slider bar to the right or left.
2. You can return to the default for each setting by clicking the **Default** button beside each slider bar, or you can return to the default for all settings by clicking the **All Default Values for the Currently Selected Camera** button.

Setup Tab #2: Configuring Hardware

There are several ways to configure the system so that it does not fill the available disk space too quickly. The procedures below can be executed from the Setup page **Hardware** tab as long as your are not in the **Record** mode.

- **Compression value.** The default setting compresses video to 15 KBytes per image. You can adjust this to any value from 7 to 40 KBytes. Obviously, setting to a higher value will use disk space up quicker.
- **Frame rate selection.** The default setting records one frame every second. You can adjust the system to record at its maximum potential rate or a wide range of rates—from ten frames per second to one frame every ten seconds. The maximum number will depend on the number of cameras attached to your system.

Camera Name	Frame Rate	Size	Max
Roof Camera View	2 frames per second	30000	No
Camera 2	1 frame per second	30000	No
Front Entrance	1 frame per second	30000	No
Roof AutoDome	1 frame per second	30000	No
Emergency Exit Doors	1 frame per second	30000	No
Roof Temperature	1 frame per second	30000	No
Lobby East Camera	1 frame per second	30000	No
Lobby West Camera	1 frame per second	30000	No
Camera 9	1 frame per second	30000	No
Camera 10	1 frame per second	15000	No
Camera 11	1 frame per second	15000	No

Select None Select All Default Values

☐ Maximize Framerate on Alarm

Frame Size: Lo Med Hi Ex Hi 15000

Framerate: 1 frame per second

Video Format: ☒ NTSC ☐ PAL

Scan Cameras: Channel Configuration

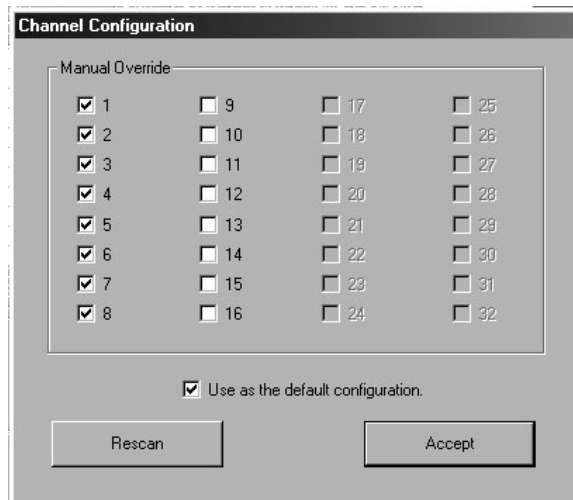
Working with the Hardware Tab Screen

1. Select one or more camera input from the list (or click **Select All** to choose all inputs).
2. Adjust the **frame size** by clicking **Lo** (7KB), **Med** (15KB), **Hi** (30KB), or **Ex Hi** (40KB) or adjusting the slider bar to any intermediate value.
3. Choose a recording rate from the **framerate** drop-down list. The frame size and rate are updated immediately when you select them.
4. To reset an input to the default values, select the input and click **Default Values**.
5. To deselect camera inputs, click **Select None**.

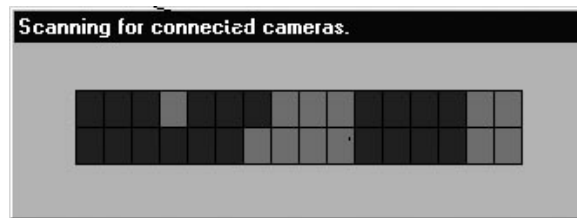
The **Hardware** tab is also where you specify the video format—NTSC or PAL. Generally, countries in the Western Hemisphere (including those in North America and South America and United States territories) use the NTSC standard; countries in the Eastern Hemisphere (including those in Europe, Africa, Australia, and much of Asia) generally use the PAL standard. Notable exceptions are Japan, South Korea, The Philippines, and Taiwan—all of which use the NTSC standard.

Rescanning for Cameras

Any time you connect cameras to the system, you must inform the system configuration software. On the **Hardware** tab on the **Setup** page, click the **Channel Configuration** button. The following screen will appear.



1. When the **Channel Configuration** window appears, select the input number for the new camera and click **Accept**. The camera input is then represented by an active button at the bottom of the screen, even if no camera is actually hooked up to the input.
2. You can also have the software search for the new camera by clicking **Rescan**. The window shown below will appear during the scanning process.
3. When you disconnect a camera, you can either click **Rescan** or manually deselect the camera input from the **Channel Configuration** window.



NOTE: To have the software recognize a specific channel configuration every time you start the application, select the appropriate camera inputs, then choose **Use as the Default Configuration**. Then, the software will skip its scan during startup and activate all camera inputs you selected. To return to having the software scan for cameras during startup, deselect **Use as the Default Configuration**, then click **Accept**.

Naming Cameras

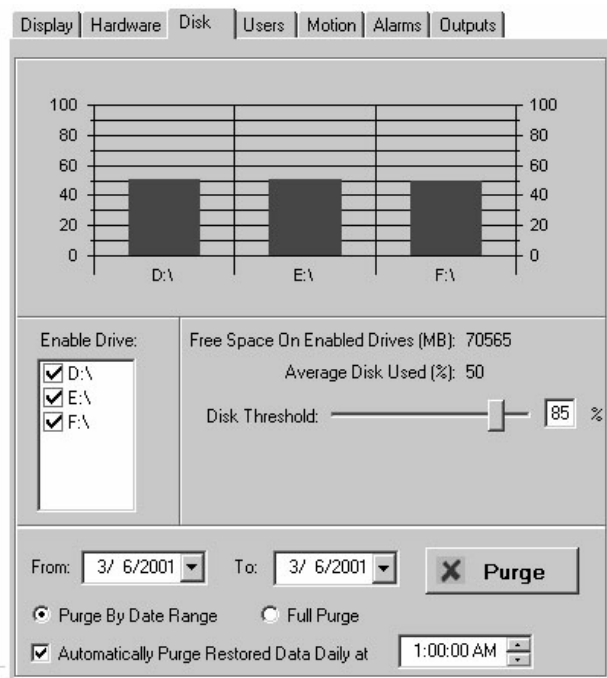
Camera naming is also done in the **Setup** page (it doesn't matter which tab is selected). Under the view screen is the name of the currently selected camera. To change the name, highlight it, type the new name, and click **Apply Name**.



By default, cameras are named **Camera1**, **Camera2**, **Camera3**, and so on (the number refers to the input to which the camera is hooked up). The camera's name is limited to 32 characters, if you decide to change it. However, a relatively long camera name may automatically be abbreviated to fit into certain areas of the **Monitor** and **Schedule** pages.

Setup Tab #3: Configuring Disk Usage

To configure which disk drives the system records to, go to the **Setup** page and click the **Disk** tab.



By default, the software records to all hard drives in the system—*except for the system drive*. On the **Disk** tab, each disk drive is represented by a blue bar, which indicates how much of the disk is full. The system saves a one-minute segment of data to the first available drive, then the next, then the next, and then back to the first drive after all disks have received a segment of data.

You can choose which disk drives the system saves data to by selecting or deselecting any drive from the **Enable Drive** box. Only selected drives are indicated in the bar graph.

The system runs in circular record mode, in which it saves video to disks up to a capacity specified by the user, and then it begins writing over the oldest video on the disk. To adjust how much of the disks can be filled before old video is eliminated, adjust the **Disk Threshold** slider bar on the **Disk** tab.

Below the chart is a section that indicates how much of the enabled disk space is full. In the sample menu shown, three drives are selected. The drives are 70565 MB in size; of that amount, 50 percent is full.

Purging Captured Video

You can also use the **Disk** tab to purge captured video. At the bottom of the **Disk** tab are two drop-down calendars. Enter starting and stopping dates. All video captured on or between these dates will be deleted. Then, click the **Purge** button. You can also purge video from all days by selecting **Full Purge** before you click the **Purge** button. You should see the bar graph change to indicate that a portion of each disk was emptied. Note that purging a large quantity of files may take a considerable amount of time.

Setup Tab #4: Defining System4 Server Users

User IDs and passwords are required whenever you run the *System4* Server software (unless **Auto Run** is enabled). To add users or change their permissions, go to the **Setup** page and click the **Users** tab.

Following are the four types of user permissions available:

- **Administrator** has full access to the configuration software.
- **Supervisor** has full access to the configuration software except for the **Users** tab on the **Setup** page.
- **User** can access only the **Monitor**, **Search**, and **Help** pages. A **User** also cannot exit the configuration software.
- **Disabled** has no access to the configuration software.

To create a user, enter the user's ID in the **User Name** field. Then, enter a password in the **Password** field and confirm it in the **Confirm Password** field. Choose any of the four levels of permissions and click the **Add** button.

To **delete a user**, select the user's ID from the **User Name** drop-down list and click the **Delete** button.

To **update a user's permissions or change a password**, select the user's ID from the **User Name** drop-down list, make the change, and click the **Update** button.

Security Features

The *System4* Server configuration software offers several methods to prevent users from exploring other areas of the system. For example, the **Users** tab contains the following options:

- **Enable Kiosk Mode** covers access to the Windows® Desktop and task bar during system operation. When used with **Restrict Explorer Functionality**, access to the desktop and task bar is completely eliminated while the server is running. If you choose to keep **Enable Kiosk Mode** selected, you have access to the following option:
 - ♦ **On System4 Server Exit** lets you choose to have your system continue in Windows, shut down, or restart when you exit the *System4* Server software. If you choose **Continue** in Windows, you can access other parts of the system after the software is shut down.
- **Restrict Explorer Functionality** disables the Windows task bar and/or the Desktop icons while the software is running. To view specific restriction options, select this check box and click **Restrictions**.

Each of these security options has individual benefits. However, you can guarantee that users will not access other parts of the system only if you choose the highest level of security.

The **highest level of security** requires the following configuration:

- **Kiosk Mode** enabled
- **Shutdown** or **Restart** enabled in the **On System4 Server Software Exit** drop-down list
- **Restrict Explorer Functionality** enabled with all restrictions activated
- Configuration software title placed in the **Startup** folder (it is already there by default)
- **Automatically Run This Schedule On Startup** selected on the **Schedule** page

NOTE: With this level of security, only a user logged in with **Administrator** permissions can access other areas of the system.

The top left corner where the Philips logo is located is actually a button to access a version information screen which also contains a **Log-on** button. If the software is currently restricted based on the user who is currently logged in, an Administrator can press this button to log on and gain full access to the software.

Setup Tab #5: Configuring Motion Detection

There are two important steps in configuring motion detection. First, you can set up a **motion mask** to cause the configuration software to ignore areas of an image where motion events do not need to be recorded. Then, you can adjust how much motion must occur (i.e. **motion sensitivity**) for the system to begin recording a motion event.

Understanding Motion Detection

You can configure the system to recognize various levels and types of motion by going to the **Setup** page and clicking the **Motion** tab. For example, you can adjust the camera's sensitivity to motion, configure the system to ignore subtle changes in light level, or create a motion mask to identify areas of the video display in which motion should not trigger recording. The following sections explain how motion detection works in NTSC (the PAL video standard uses slightly different numbers, as described later in this section).

The Motion Detection Image

Each time the system captures and compresses an image, a smaller black-and-white version of the image is created. This smaller image is used only for motion detection, then discarded; it is not stored separately from the compressed data. All motion detection is done using this smaller image.

Reference Frame

When recording begins from a camera with motion detection active, the first image of video captured becomes the camera's reference frame to which following images are compared. The reference frame is replaced periodically to prevent gradual and inevitable changes, such as light levels during sunrise or sunset, from being detected as motion.

The **Number of Frames Between Reference** setting determines how often the reference frame is updated. A setting of 100, for example, means that every 100th frame becomes the new reference. The 99th frame would be compared to the first frame, whereas the 101st frame would be compared to the 100th frame.

Block Difference

Each smaller image captured along with the compressed frame is made up of 368 blocks arranged 23×16 . Each time a new image is captured, its smaller image is compared block by block with the reference frame for that camera. If the brightness of a block differs from the reference frame by more than the **Sensitivity** value, the block is considered changed.

The **Sensitivity** setting is a percentage times 100. For example, a value of 100 indicates 1 percent, 5000 indicates 50 percent, and so on. A brightness change from black to white would be a change of 10,000, or 100%.

This comparison is performed for all 368 blocks in the frames. The total number of blocks that have changed is counted and used with the **Percentage Area** setting, as described in the following section.

Percentage Area

The final step in motion detection is to compare the number of blocks that have changed (as determined in the previous step) to the threshold computed from the **Percentage Area** setting. If this threshold is reached, motion is detected.

Percentage Area is the percentage of the 368 blocks in the image that need to change for motion to be detected, multiplied by 100. For example, a **Percentage Area** setting of 250 (2.5 percent) means that nine of the blocks (0.025×368) would have to change for motion to be detected. The lowest setting you can use is about 30 (or 0.3 percent), which requires a single block in the image to change from the reference frame for motion to be detected. Setting the Percentage Area smaller than 30 would require zero blocks to change for motion to be detected, which means motion would be detected all the time.

Masking Blocks

Any of the 368 blocks in a frame can be masked. Whenever a block is **masked**, it is completely ignored during the block-by-block comparison. A masked block is never counted as one of the blocks that have changed, even if it changes completely from black to white. If you mask everything in the picture, motion will never be detected no matter what happens.

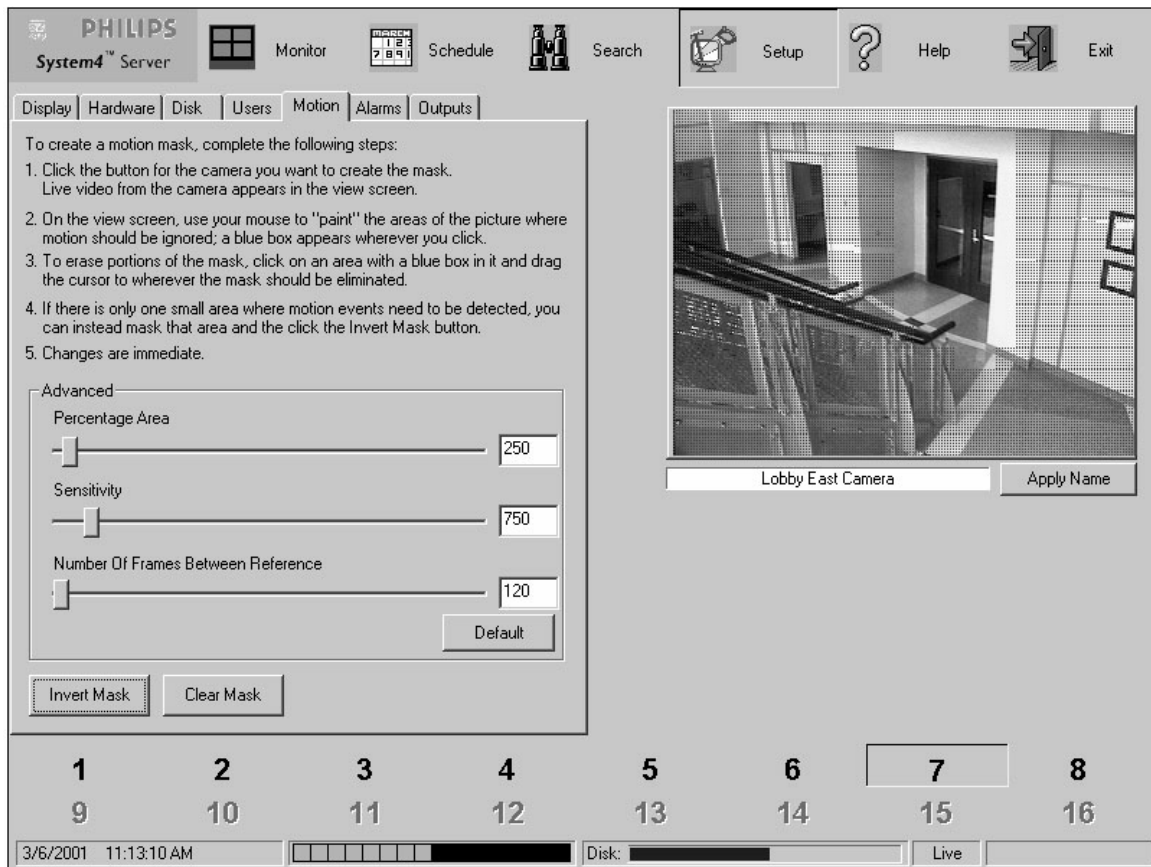
Even if you mask one or more blocks, the Percentage Area setting uses all 368 blocks for its computations. For example, suppose you mask 268 blocks and set Percentage Area to 2000. In this case, 20 percent of all 368 blocks, or 73 blocks, must change for motion to be detected. However, this requires 73 of the 100 unmasked blocks to change for motion to be detected.

PAL Differences

The motion detection process is exactly the same for PAL, except that the sizes are slightly different. In PAL, the original image is 768×576 and the smaller black-and-white image is 23×18 (compared to 23×16 for NTSC). This means there are 414 blocks in the smaller frame (compared to 368 for NTSC).

Creating Motion Masks

A **motion mask** can help you reduce unwanted recording by causing the system to ignore motion events that occur in certain portions of an image. For example, if you have a camera at a front entrance that happens to capture the receptionist's desk, you might not want to record all of the receptionist's movements if they don't present a security risk, because the images would consume valuable disk space for storage. You can easily create a motion mask as large or as small as you want and in a virtually unlimited pattern.



To create a **motion mask**:

1. On the **Setup** page, select the **Motion** tab. Information in this tab is inaccessible while the system is recording.
2. At the bottom of the page, click the button for the camera you want to create the mask for. Live video from the camera appears in the view screen.
3. On the view screen, use your mouse to "paint" the areas of the picture where motion should not be detected; a blue box appears wherever you click.
4. To erase portions of the mask, click on an area with a blue box in it and drag the cursor to wherever the mask should be eliminated.
5. To eliminate a motion mask, click the **Clear Mask** button.

The changes are applied automatically. For the mask to apply to recording, you must record in **Motion** mode; the mask does not affect recording in **Free** mode (refer to the **Schedule** screen for selecting recording modes).

Adjusting Motion Sensitivity

The **Motion** tab on the **Setup** page allows you to configure the system's motion sensitivity. There you can adjust the following three settings:

- **Percentage Area** is the percentage of an image that must differ from the previous image for the system to recognize motion. For example, if you set this to 2000, approximately 20 percent of a captured image must differ from the previous captured image for the system to begin recording.
- **Sensitivity** is the pixel value change required for the system to recognize motion. For example, suppose you set a high **Sensitivity** level. If each pixel of video changes only a little bit (perhaps if it falls into a dim shadow), recording is not triggered.
- **Number of Frames between Reference** allows the system to continuously create a new reference image to compare future images to. For example, if a location being captured is becoming darker (perhaps if the sun is setting), the system can reset its reference image every 50 images so that light-level changes that occur during that time are not compared to drastically different light levels that were present more than 50 images earlier.

Setup Tab #6: Assigning Cameras to Alarms

The **Alarm** tab on the **Setup** page allows you to associate cameras with alarms and set up what should happen when trigger events occur.

The screenshot shows a software window titled "Alarm" with a tabbed interface at the top containing "Display", "Hardware", "Disk", "Users", "Motion", "Alarms", and "Outputs". The "Alarms" tab is selected. Inside the window, there is an "Alarm" dropdown menu currently showing "FrameServer Alarm 1", with "System4 Alarm Alarm 1" listed below it. To the right of this is a "Deactivate" button. Below the alarm selection is the "Assigned Cameras" section, which contains four dropdown menus: "Roof Camera View", "Front Entrance", "Roof AutoDome", and "Emergency Exit Doors". Underneath these is the "Circuit State" section with a checkbox labeled "Normally Closed" (which is unchecked). To the right of this is the "Duration (Seconds)" field, which shows "60" and has up/down arrows. Below the circuit state is a checked checkbox labeled "Always On". At the bottom is the "Alarm Scheduling" section, which includes "Weekdays" and "Weekends" rows. Each row has an "Activate From:" time field (both set to "12:00:00 AM") and a "To:" time field (both set to "11:59:00 PM"), with double arrows between them.

To name an alarm input, select it from the **Alarm** drop-down list. Alarms 1 through 16 correspond to the alarm inputs located on the rear panel of the multiplexer. Alarm numbers below 16 are reserved for a future feature and should be ignored. After you select the alarm input, click on its name in the **Alarm** field and enter a new name. No matter what you name the alarm input, its input number reference will always appear in the box below the **Alarm** field.

To assign cameras to alarms:

1. Choose an alarm from the **Alarm** drop-down list.
2. Choose up to four cameras that should begin recording when the chosen alarm is activated. You can choose each camera from the drop-down lists in the **Assigned Cameras** area. If you want to choose fewer than four cameras, leave the remaining boxes on **Ignore**.
3. If the alarm is normally in a closed state—that is, if the alarm is triggered when the circuit is broken—choose **Normally Closed**. Otherwise, leave this option unchecked.
4. Set the maximum duration that the selected cameras should record video after an alarm trigger. To do this, use the up and down arrows in the **Duration** field (the duration is measured in seconds). When an alarm occurs, the system records video until the alarm is returned to its normal state, or until the maximum duration is reached, whichever occurs first. A duration of 0 causes recording to proceed until the alarm is returned to its normal state.

For example, suppose you set the **Duration** field to 120. If the alarm is triggered for one minute, the system will record video for only that minute. However, if the alarm is triggered for an hour (perhaps if a door or window is left open), the system will record for only the two minutes (120 seconds) and then stop. This feature prevents the system from filling the disk with video long after the actual security breach occurs.

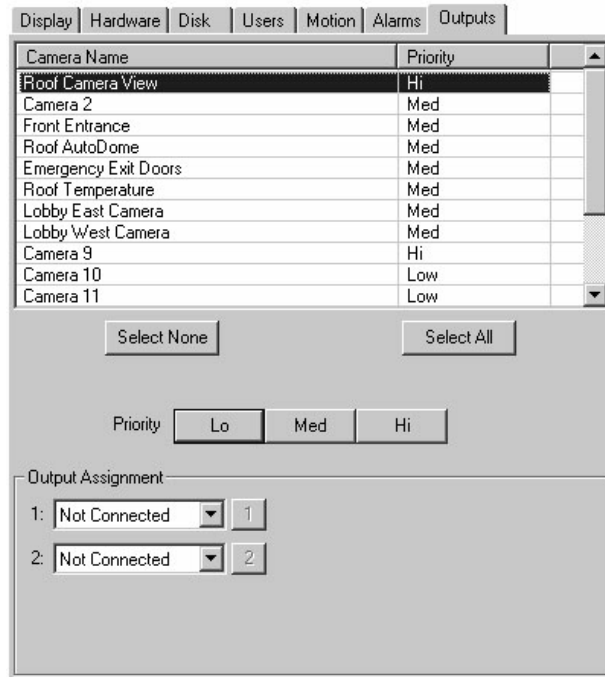
5. When the alarm is configured properly, click the **Activate** button.

Alarm Scheduling

The **Alarms** tab allows special scheduling of alarm recording. If you leave the **Always On** checkbox selected, an alarm on the input will always trigger recording on the specified cameras regardless of the schedule you create on the **Schedule** page. If you deselect **Always On**, you can specify a schedule for when all alarms on the input should trigger recording on the specified cameras. You can set an alarm recording schedule for both weekdays and weekends.

Setup Tab #7: Video Outputs

The **Outputs** tab contains features which have not been implemented in this version of software. Ensure that the **Output Assignment** drop-down boxes are both set to **Not connected** and ignore everything else.



Camera Name	Priority
Roof Camera View	Hi
Camera 2	Med
Front Entrance	Med
Roof AutoDome	Med
Emergency Exit Doors	Med
Roof Temperature	Med
Lobby East Camera	Med
Lobby West Camera	Med
Camera 9	Hi
Camera 10	Low
Camera 11	Low

Select None Select All

Priority Lo Med Hi

Output Assignment

1: Not Connected 1

2: Not Connected 2

SECTION 4: OPERATING THE *System4* SERVER

4.1 Introduction to *System4* Server Operation

Operating functions of the *System4* Server are outlined below as they appear in this section:

- Viewing Live Video
- Record Modes and Record Scheduling
- Searching for and Viewing Recorded Video
- Exporting Images
- Monitoring Disk Usage

Each of these functions is described in detail, with sample menus and screen shots provided for reference.

4.2 Viewing Live Video

The *System4* Server Configuration software automatically opens to the **Monitor** page, your window to the live video displayed by each camera. The **Monitor** page contains one or more video windows, with buttons for individual camera inputs listed along the right side. Buttons for inputs with active camera connections contain a black number; buttons for unused or inactive inputs are grayed out. To display the name of the cameras in the video windows, click **OSD** on the **Main** tab.

While recording, you can view live video in four windows configured 2×2 , in nine windows configured 3×3 , or in 16 windows configured 4×4 . To switch to one of these modes, click the appropriate button in the bottom-right corner of the screen.

If there are more camera inputs than available video windows on the **Monitor** page, camera inputs are organized on multiple pages. For example, in 2×2 mode, four windows are displayed at a time. To see the remaining camera inputs, click the left and right arrows on the **Main** tab. The total number of pages and the current page are displayed between the arrows.

You can also rotate among the available pages by selecting a time interval and clicking **Start Tour**. If you select five seconds, the system displays Page 1 for five seconds, Page 2 for five seconds, and so on until all pages are displayed. Then Page 1 appears again, restarting the cycle. To stop the cycle, click **Stop**.

The configuration software allows you to determine which camera inputs are displayed in the various windows.

Configuring Video Windows

1. Click on the window in which you want to view video from a specific camera input. The window now has a white border.
2. Click on the appropriate camera input button. Video from that input appears in the selected window.
3. Repeat these steps for each camera input, choosing a different window each time.
4. To change the location of a camera input that is already displayed, select the window you want the camera to be displayed in and then select the camera input number. The camera input is removed from the previously selected window and displayed in the new window.
5. To change the camera displayed in a window, select the window and click a new camera input button. The previously selected camera input is replaced by the newly selected camera input.

You can also arrange camera inputs in sequential order by clicking **Page Defaults**. In 2×2 mode, this displays cameras 1–4 on the first page, cameras 5–8 on the second page, and so on until all available camera inputs are displayed.

Cameras can be arranged in any combination. The camera arrangement selected in one window configuration (2×2 , 3×3 , and such) has no effect on the camera arrangement selected in the other modes.

Outputs Tab

This feature has not been implemented in this version of software, so this tab and associated functions can be ignored.

4.3 System4 Server Recording and Scheduling

There are three types of recording modes. On the **Schedule** page, each mode is associated with a color to help you set up and visualize the schedule. Following are descriptions of the three types of recording modes (and their associated colors):

- **Alarm (red)** records video only if an alarm is triggered during the time period you specify on the **Schedule** page. The maximum duration of the camera's activation can be set on the **Alarms** tab on the **Setup** page.
- **Motion (blue)** records video only if motion is detected during the time period you specify on the **Schedule** page. You can configure the system to detect only the most noticeable activity or any slight movements. This sensitivity can be adjusted on the **Setup** page.
- **Free (green)** records video for the entire length of time you specify on the **Schedule** page.

Setting a Recording Schedule

To schedule the system to automatically begin recording at regular or custom times, go to the **Schedule** page. There you can set up a recording schedule for weekdays, weekends, or any unusual days (such as holidays) that may not fall under either of those schedules. All the cameras can record on the same schedule, or each camera can be scheduled separately.

PHILIPS System4™ Server

Monitor Schedule Search Setup Help Exit

March 2001 March 2001

Sun	Mon	Tue	Wed	Thu	Fri	Sat
25	26	27	28	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
1	2	3	4	5	6	7

◀ Today ▶

Select Mode

- ☒ Motion
- ☐ Alarm
- ☐ Free

Schedule Mode

Everyday Default

Apply

Clear Schedule

All Custom Schedules

Clear

Set All Cameras

Record

☐ Automatically run this schedule on startup

Everyday Schedule

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Camera 2

Front Entrance

Roof AutoDetect

Emergency

Roof Temperature

Lobby East

Lobby West

Camera 9

Camera 10

3/6/2001 11:43:27 AM Disk: Live

At the bottom of the **Schedule** page are stacked timelines, with camera input 1 on top. To view the schedule bars for additional cameras (if available), use the vertical scroll bar. The timelines indicate the recording modes scheduled for each camera on the day indicated in the calendar. Please note that the schedule bars are measured in 24-hour format, as follows:

Midnight	Hour 0
6 a.m.	Hour 6
Noon	Hour 12
6 p.m.	Hour 18
Midnight of the next day	Hour 24

Manually drawing boxes on the timelines is one way to set a schedule. This procedure is described in the next section, followed by instructions for quickly setting **simple**, **default**, and **custom** schedules.

Drawing Schedule Boxes

To draw a **schedule** box, complete the following steps on the **Schedule** page:

1. Find your starting time on the timeline and move straight down to the **schedule** bar of the appropriate camera.
2. Click and drag until the box that appears extends to the desired stopping time. By default, the box turns green (indicating the **Free** recording mode).
3. To adjust the starting and stopping times, hover the cursor over the left or right wall of the schedule box you created. When the cursor becomes a left/right arrow, click and drag to the left or right until the box is lined up with the desired time. To move the entire box left or right, hover over the middle of the schedule box and drag to the left or right.
4. To change the recording mode, right-click on the schedule box you created. This displays a menu containing four choices: **Motion**, **Alarm**, **Free Run**, and **Delete** (completely deletes the schedule box).

The following sections describe how to quickly set up simple and default schedules.

Quick Setup for Simple Schedules

The three color-coded buttons (**Motion**, **Alarm**, and **Free**) in the **Select Mode** area allow you to quickly set up all cameras to record in the same mode. To do this, click on the appropriate button and then click **Set All Cameras**. If you select the **Motion** button, all the schedule bars turn blue; if you select **Alarm**, all the bars turn red; and so on.

Even when using the quick setup, you can individually adjust the boxes after you create them by clicking and dragging their walls; you can also change the recording mode for each box by right-clicking and selecting a new mode from the pop-up menu. When you are finished creating the schedule, simply click **Apply** and then the **Record** button to activate it.

This is a quick and easy way to set a simple schedule. Complex schedules are easier to create by drawing individual boxes, as described in the previous section.

Setting Weekday, Weekend, and Everyday Defaults

The configuration software allows you to easily create one schedule for all weekdays, all weekends, or all days of the week, as illustrated in the following step-by-step instructions (if you will create or have already created schedules for special days, be sure to read the following section, **Setting Custom Schedules**).

To create a **weekday** default schedule:

1. On the **Schedule** page tab, click the calendar on any weekday.
2. At the bottom of the page, create schedule boxes (as described in the previous sections) to illustrate your default weekday schedule.
3. In the **Schedule Mode** section, choose **Weekday Default** from the drop-down list.
4. Click **Apply**.

All weekdays *that haven't yet been scheduled or have been scheduled as an everyday default* should now have the schedule you just created. Try clicking on another weekday. Unless it's already been given a nondefault schedule, it should reflect the new weekday schedule.

To create a **weekend** default schedule:

1. On the **Schedule** page, click the calendar on any weekend day.
2. At the bottom of the page, create schedule boxes to illustrate your default weekend schedule.
3. In the **Schedule Mode** section, choose **Weekend Default** from the drop-down list.
4. Click **Apply**.

All weekend days *that haven't yet been scheduled or have been scheduled as an everyday default* should now have the schedule you just created. Try clicking on another weekend day. Unless it's already been given a nondefault schedule, it should reflect the new weekend schedule.

To create an **everyday** default schedule:

1. On the **Schedule** page, click the calendar on any day.
2. At the bottom of the page, create schedule boxes to illustrate your default schedule.
3. In the **Schedule Mode** section, choose **Everyday Default** from the drop-down list.
4. Click **Apply**.

All days *that haven't yet been scheduled or have been scheduled as another default* should now have the schedule you just created. Try clicking on another day. Unless it's already been given a nondefault schedule, it should reflect the new default schedule.

Setting Custom Schedules

It is simple to set schedules for special days (such as holidays) even if you will or have set a default for weekdays and weekends. To set a **custom** schedule, perform the following steps:

1. On the **Schedule** page, click on the day you want to set the schedule for. If the day falls on a month other than the one shown in the calendar, use the drop-down lists to select a new month and/or year (or use the **Today** button and the arrows to navigate the calendar).
2. Create schedule boxes to illustrate the custom schedule.
3. In the **Schedule Mode** section, choose **Custom** from the drop-down list and click **Apply**. Now, setting a default elsewhere will not affect this schedule.

If you want holidays to follow a default schedule, you can copy and paste as described in the next section.

Copying a Schedule

If you want to copy a certain day's schedule to another day, perform the following steps:

1. Click on the day that is set to the desired schedule.
2. Place the cursor anywhere on the calendar and right-click.
3. From the menu that appears, choose **Copy**.
4. Click on the day that you want to have the same schedule.
5. Place the cursor anywhere on the calendar and right-click.
6. From the menu that appears, choose **Paste**.
7. Click **Apply**.

This feature is useful if you want to copy a weekend or holiday schedule to another holiday. However, if you copy a default schedule to a day, it is still considered a custom schedule—meaning that its schedule will not be changed if the default is changed.

Changing All Custom Schedules to Default Schedules

If you want to change all custom schedules to follow a default schedule, perform the following steps:

1. In the **Clear Schedule** area, select **All Custom Schedules** from the drop-down list.
2. Click **Clear**.

Now, all weekdays follow the weekday default, and all weekend days follow the weekend default. Also, changing the default schedule will override the schedule for these changed days.

Clearing Schedules

In addition to changing schedules, you can also clear certain schedules using the **Clear Schedule** area of the **Schedule** page. The **Clear Schedule** area contains three choices:

- **Current Day Only** completely clears the displayed schedule. The displayed schedule remains or becomes a custom schedule.
- **All Custom Schedules** causes all custom schedules to become the appropriate default schedule for that type of day (weekday, weekend, or everyday).
- **Entire Schedule** completely clears all default and custom schedules.

To activate one of these options, select it from the drop-down list and click **Clear**. In a special situation in which you need to make only one custom schedule follow a default schedule, display that day, choose **Current Day Only**, copy the appropriate default schedule from another day, and paste it to the newly cleared schedule.

Example—Setting a Typical Schedule:

Suppose that your office follows a schedule of 6 a.m. to 6 p.m., Monday through Friday, and you want to capture motion events during office hours and alarm events during off hours. On weekends and certain holidays, the office is closed, and you want to capture alarm events those entire days.

To create this schedule, you would perform the following steps:

Part I—Setting the weekday default:

1. Go to the **Schedule** page.
2. If you have created any custom schedules that you no longer need, go to the **Clear Schedule** area, select **All Custom Schedules**, and click **Clear**.
3. Click on any weekday in the calendar.
4. Draw schedule boxes to reflect the weekday schedule.
5. In the **Schedule Mode** section, choose **Weekday Default** from the drop-down list. Then click **Apply**.

Part II—Setting the weekend default:

1. Click on any weekend day in the calendar.
2. Click the **Alarm** button in the **Select Mode** area and then click **Set All Cameras**. This quickly sets all cameras to the **Alarm** mode for the entire day.
3. In the **Schedule Mode** section, choose **Weekend Default** from the drop-down list.
4. Click **Apply**.

Part III—Setting holiday schedules:

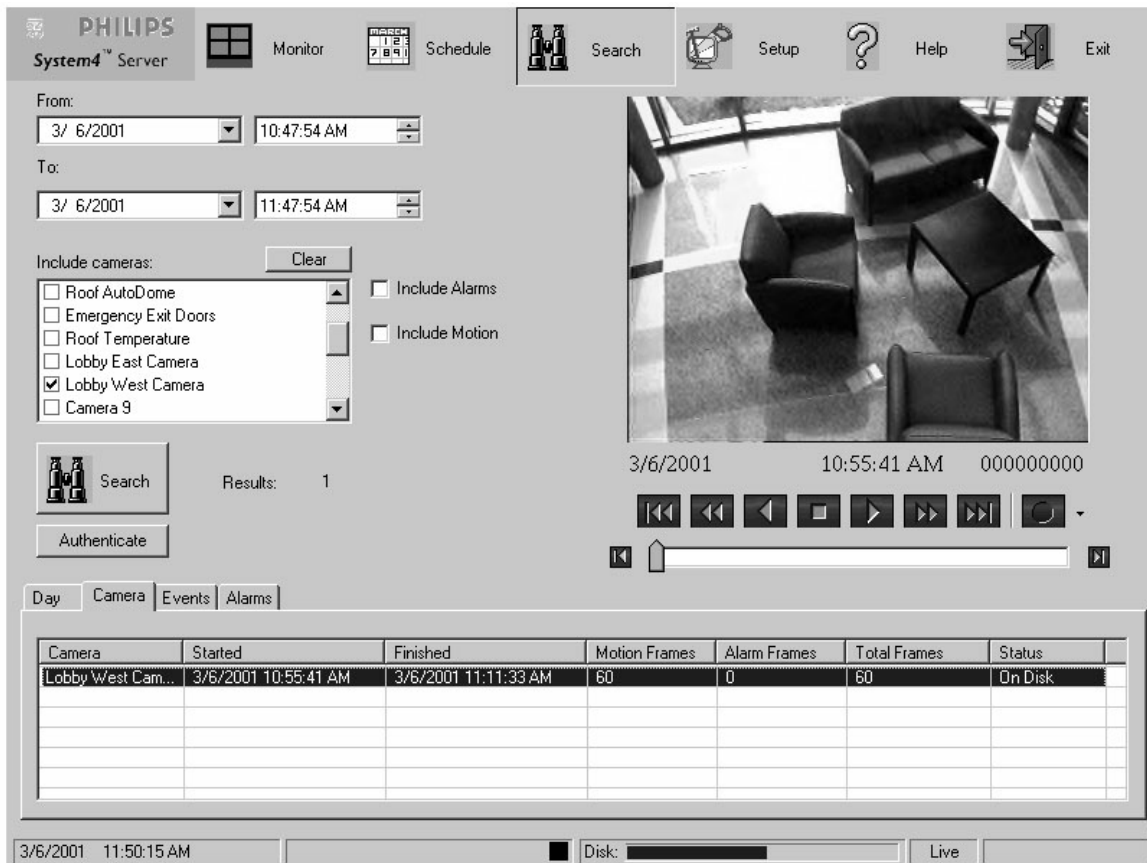
1. Click on a weekend. Then, right-click on the calendar and select **Copy**.
2. Click on a holiday that should follow the weekend schedule.
3. Right-click on the calendar and select **Paste**.
4. In the **Schedule Mode** section, choose **Custom** from the drop-down list.
5. Click **Apply**. Repeat **Part III** for all holidays.

Although it follows the weekend default, the holiday is now a custom schedule. If you later change the default weekend schedule, *the holiday's schedule will not change*. In that case, you must again copy and paste the new weekend default to the holiday.

After you have set up the **weekday**, **weekend**, and **holiday** schedules, click **Record**.

4.4 Searching for and Viewing Recorded Video

The *System4* Server Configuration software provides a search function to allow you to find recorded video. To search for video, you must enter a time period (starting time and stopping time) and the type of video you are looking for (motion events, alarm events, or all video).



Performing a Search

1. Click the **Search** function button to go to the **Search** page.
2. In the **From:** field, enter the starting date (month/day/year) of your search period in the first field by clicking the numbers and typing your date. You can also use the down arrow to call up a calendar of the current month and then click a date or use the side arrows to choose a different month.
3. In the other field in the **From:** field, select a starting time (hour:minute:second:am/pm). You can click the numbers and type in your entries, or you can use the arrows provided to change the numbers incrementally.
4. Repeat steps 2 and 3 in the **To:** field to enter the stopping date and time for your search period.
5. Click the **Motion** or **Alarm** boxes if you want to search only for video captured in **Motion** mode, **Alarm** mode, or both. If you leave these boxes blank, the system will search for all types of video.
6. In the **Include Cameras** list, click all the cameras whose video you want to search. If you leave all inputs blank (or click the **Clear** button to make all of them blank again), the system will search for video from all cameras.
7. Click the **Search** button.

The search results are then listed at the bottom of the screen, organized on the following tabs:

- **Day** displays a single result for each camera for each day of the search period. If the search period was two days long for 16 cameras, 32 results are listed (assuming all cameras recorded video both days).
- **Camera** displays a single result for each camera. Each result represents a video segment containing all video captured by an individual camera input during the search period.
- **Events** displays a single result for each one-minute period that contained a motion or alarm event.
- **Alarms** displays a result for each camera that recorded each alarm event. Results contain the alarm name, the camera name, the type of alarm (hardware or software), and the times the alarm was activated and deactivated.

Except on the **Alarms** tabs, the information displayed on all tabs includes the camera name, the date and time of the start and finish of the video segment, the number of motion and alarm images, the total number of images captured, and the location of the video (on disk or removable media). Click on a column title to sort search results based on that column's information.

Viewing Search Results

After you have located the video you want to view, you can play it back on the **Search** page with full VCR control.

1. Double-click the name (or other information) of the video segment you want to view. A frame of the selected video appears in the view screen, and the VCR controls (rewind, play, pause, frame-by-frame advance, and so on) are activated below the view screen.
2. Use the VCR controls to view the segment of the video that you want to see. Below the view screen is a clock that indicates the time that the video was captured. When viewing entire segments of **Free** mode video, this clock runs uninterrupted until the video segment is completed. When viewing motion or alarm events only, the clock skips ahead in step with the video. When playing back alarm events, the actual time during which the alarm occurred is indicated on the counter by the color blue. Other video that may have been captured during each one-minute segment of video is indicated on the counter by the color white.

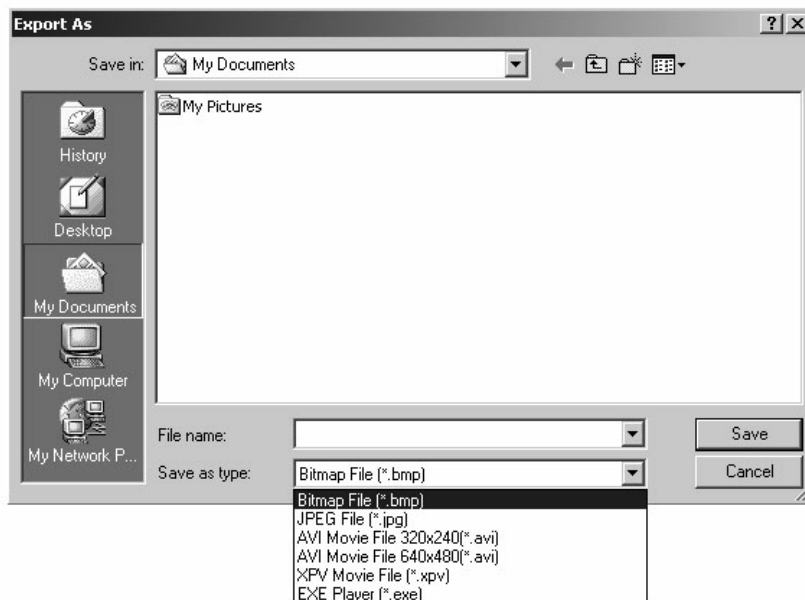
The video that appears in the view screen window is also being sent out the analog video export output (i.e., the BNC cable connection from the *System4* Server Interface cable). If a conventional security VCR or other analog video recording device is connected to this output, the video can be recorded on it.

Video Authentication

The **Authenticate** button on the **Search** page allows you to verify that a video file has not been changed or tampered with in any way. To authenticate a video segment, perform a search, select the appropriate search result, then click the **Authenticate** button. A progress bar is then displayed until the whole segment has been examined. A message box then appears, indicating whether the authentication succeeded or failed.

4.5 Exporting Captured Images and Video

The system also allows you to export captured still images and video to other locations. To do this, double-click the search result that contains the image or video you want to export and then click the **Export** button (the blue circle to the right of the VCR controls). This displays an **Export As** window (see below) that allows you to save a single image as a bitmap or JPEG or the entire video segment as a Windows AVI file (320 × 240 or 640 × 480), XPV file (which you can play back using supplied XPVPlayer, which is installed on the system by default), or EXE file (a completely self-contained file that you can play on any computer).



To view additional export options, click on the down arrow next to the **Export** button. This opens a pop-up menu with the following options:

- **Copy to Clipboard** saves the displayed still image to the Windows clipboard. You can then paste the image in another imaging application.
- **Mark Selection** marks only a portion of the displayed video file for export. Place the playback indicator at the beginning of the segment of video you want to export, and then choose **Mark Selection**. When the indicator turns red, drag it forward or backward to the end of the segment. Then, click the **Export** button to save the marked portion of the video file.
- **Full Screen** displays the current video at its largest size. You still have access to **VCR** controls and **Export** button, but the **Search** capabilities are hidden. If you export or copy a still image in **Full Screen** mode, the image is saved in the full screen size. To return to the normal display, click **Full Screen Off**.

4.6 Viewing Disk Usage

There are two ways to view the amount of available disk space that has been used to store captured video:

- **Look at the Disk bar on the right side of the status bar.** The amount of disk space which has been used for recording is indicated by the length of the blue bar. Since the **Disk** bar also reflects the threshold you set on the **Disk** tab, there may actually be disk space available, but it is not available for recording purposes.
- **Go to the Setup page and click the Disk tab.** A bar graph indicates how much of each disk is full. If the blue bars do not extend up to the 100% mark, there is disk space available but it would not be used for recording purposes.

SECTION 5: RemoteView SOFTWARE

5.1 Introduction to RemoteView

RemoteView allows you to view recorded and live video from the *System4* Server on any remote computer via a network or regular phone line. The remote computer does not need to have the *System4* Server software or any special hardware installed. All it needs is a connection to the *System4* Server box and the **RemoteView** software. RemoteView downloads live and recorded video segments from the server so that you can view and even save them on the remote PC.

The *System4* Server comes completely configured for RemoteView, with the **RemoteView** Server software already installed. However, to use the remote access, you must complete the following steps:

- **Connect the remote PC.** You must obtain IP addresses for the remote PC and the *System4* Server and set up the remote PC for networking. If the server is on a local network, the system administrator or Internet service provider (ISP) can assign IP addresses. If you will dial directly into the server, follow the directions in **Step 3** of the **Connecting the Remote PC and Server** section.
- **Install the software.** The **RemoteView** Server is already installed on the *System4* Server, but you must install RemoteView on the remote PC. To do this, insert the *System4* Server CD and choose the **RemoteView** option (if the CD does not auto run, manually run **SETUP.EXE** from the **RemoteView** folder on the *System4* Server CD).

NOTE: If you are unfamiliar with computer networking, it is recommended that you let a trained information systems (IS) manager connect and configure the remote PC and server.

Connecting the Remote PC and Server

The procedure for configuring a remote PC depends on the desired type of connection. You can either dial directly into the server through a modem, or connect over a network. You must first install a modem or a 100 BaseT ethernet card into the remote PC by following the manufacturer's instructions. After that, you must physically connect the *System4* Server to the network or phone lines (the *System4* Server PC is supplied with a 100 BaseT ethernet card, but not a modem). Then, you can proceed with the following configuration steps on the remote PC:

1. Install Dial-up Networking (for direct dial only).
2. Install TCP/IP.
3. Obtain IP addresses and connect to the server.

Consult with your IS manager for exact instructions based on the operating system used on the remote PC.

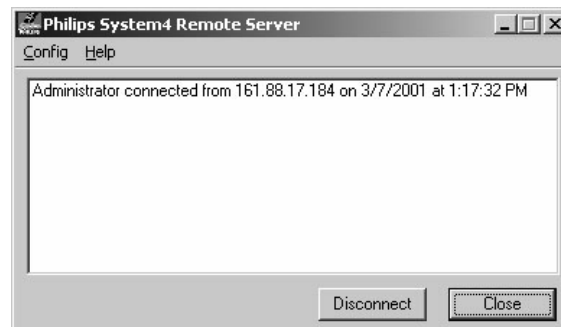
Installing and Running the Software

The **RemoteView** Server is automatically included in the *System4* Server installation. To install RemoteView on the remote PC, insert the *System4* Server CD and choose **RemoteView** when presented with an installation option (if the disk doesn't auto run, manually run **SETUP.EXE** from the **RemoteView** folder on the *System4* Server CD).

Setting User ID's and Passwords

User IDs and passwords for accessing the *System4* Server through RemoteView must be set on the *System4* Server. To set or change a user ID or password, complete the following steps:

1. Open the **RemoteView** Server on the *System4* Server (click on the *System4* Remote Server icon in the system tray bar). The screen shown below will appear.



2. From the **Config** menu, select **Users**. The **Add/Remove Users** window appears.
3. To add a user and password, enter the information in the **User** and **Password** fields, confirm the password in the **Confirm** field, and click **Add/Update**.
4. To update a user's password, click on the user ID in the left window, type and confirm the new password, and click **Add/Update**.
5. To delete an existing user ID and password, select the user ID in the left window and click **Remove**.

Now, all valid users can connect with the server from a remote PC through **RemoteView**. The *System4* Remote Server screen will display information for all remote users that have an active connection. For example, the screen shown prior indicates that an Administrator from a remote PC with an IP address of 161.88.17.184 is currently connected to the *System4* Server PC.

Limiting Download Rates

Sometimes, limiting the download rate is as important as speeding it up. For example, if you are using RemoteView on a busy network, you may not want video downloads to use up too much of the available bandwidth. For this reason, the **RemoteView** Server allows you to set limits on the number of bytes that you can download during a given time period.

To adjust the maximum data transmission rate, complete the following steps:

1. In the **RemoteView** Server, choose **Data Rate** from the **Config** menu. The **Data Speed Configuration** window appears.
2. Select the **Enable Data Rate Control** check box.
3. Enter the number of bytes per second that the connection is allowed to transmit.

Video is then transmitted at the fastest possible rate allowed for the connection.

5.2 Using RemoteView

To run the **RemoteView** Server, click **Start/Programs/First Line/RemoteView Server**.

The **RemoteView** screen is similar to the **Search** page of the *System4* Server configuration software. It includes areas for entering search parameters, playing and viewing video segments, viewing search results, and exporting video and still images. Note that the date and time indicated below the server field are based on the clock built into the server, not the remote PC.

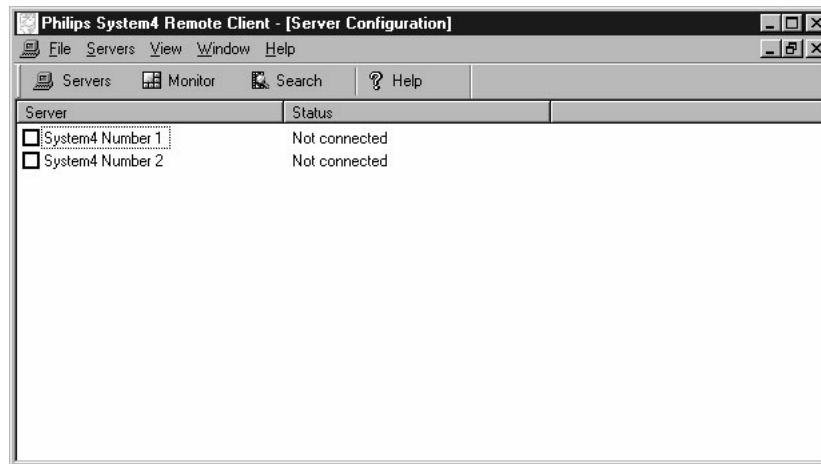
RemoteView consists of the following three primary windows:

- **Servers** lists all the servers RemoteView is configured to connect with.
- **Monitor** displays live video from selected cameras and servers.
- **Search** searches for recorded video from selected cameras and servers.

These pages are described in more detail in the following sections.

The Servers Page

The **Servers** page is a list of all servers RemoteView is configured to connect with. To access the **Servers** page, click the **Servers** button on the toolbar.



To add a server to the **Servers** list:

1. Select **Add** from the **Servers** menu.
2. In the **Server Configuration** window, enter a name and IP address for the server and the username and password that was configured on the server using the **RemoteView** Server. To determine the IP address of the server, contact your IS manager.
3. Select a default **Scale** level (see the **Monitor** section for a full discussion of the **Scale** level).
4. Click **OK** to add the server to the **Servers** column.

To establish a network connection with the server, click the square next to its name in the **Servers** column. If a connection is successfully established, the status of the server is listed as **Connected**. If a connection cannot be made, the reason is listed in the **Status** column. To disconnect from the server, click its square again.

The Monitor Page

The **Monitor** page allows you to view live video from any of the servers you are currently connected to. To access the **Monitor** page, click the **Monitor** button on the toolbar. The **Monitor** page contains the following sections:

- A toolbar with a choice of 4 video window configurations.
- A tree that lists all cameras on all servers you are currently connected to.
- Video windows organized in the configuration selected from the toolbar.



To determine which cameras are displayed in each window configuration:

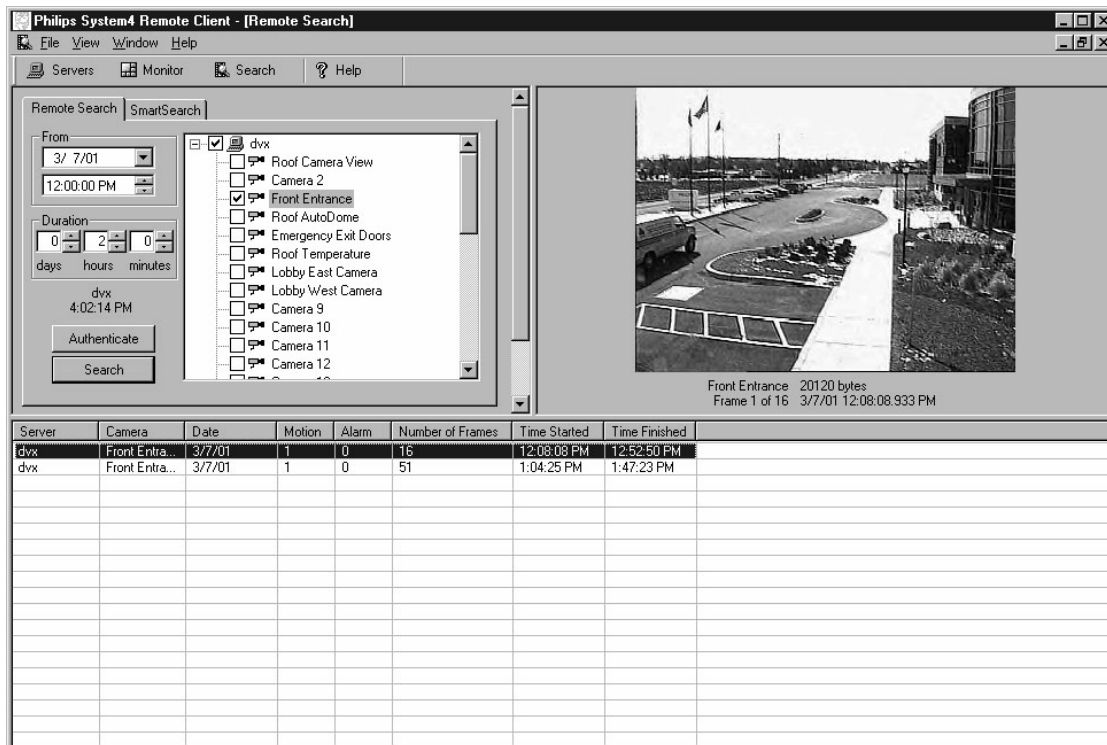
1. Select a video window configuration from the right hand toolbar.
2. Expand the camera tree by clicking the **plus** next to each server name. This lists all cameras available on each server.
3. Click on a camera name and drag it into one of the video windows. Repeat until the desired cameras are properly placed in each video window.
4. To copy one displayed camera to another video window, select **Drag Mode** from the **Config** menu and select **Copy**. Then drag the displayed camera to the other window.

The **Monitor** page also includes the following features:

- The **Video Scale** option in the **Config** menu sets the quality of the video captured on each camera (see the **Scale Levels** note for more information). Selecting lower settings provides higher quality images. If you change the **Video Scale** from the **Config** menu, all cameras are changed. If you change the **Video Scale** by right-clicking on a video window, only the camera displayed in that window is changed. If you swap video to another window, its scale level is maintained unless overridden by the window's scale (see the next item).
- The **Window Scale** option in the **Config** menu sets the quality of the video captured in each window (see the **Scale Levels** note for more information). Selecting lower settings provides higher quality images. If you change the **Window Scale** from the **Config** menu, all cameras are changed. If you change the **Window Scale** by right-clicking on a video window, only that window's scale level is changed.
- To display the camera name and time on a video window, right-click the window and select **Overlay** (or select **Overlay** and **On** from the **View** menu).
- The **colored boxes** that occasionally surround the video windows indicate that all video is being recorded continuously (green), that motion is currently being recorded (blue), or that an alarm event is currently being recorded (alarm).
- Right-clicking a window also displays the **Dbl Click Target** option. If you choose this option, the window you clicked will display video from any window you double-click. This is convenient in window configurations that contain both small and large windows. For example, you can select **Dbl Click Target** on a large window and then double-click a small window to show its camera on the larger window. You can repeat this action on the large window until you deselect **Dbl Click Target** or select that option for a different window.
- The **playback bar** function is not implemented at this time.
- The **Stop** button on the window configuration toolbar freezes live video in all windows. To unfreeze the video, click the **Stop** button again.
- There are three **Drag Modes**, or ways to move video, on the **Monitor** page. The following drag modes are available on the **Config** menu:
 - ♦ **Swap**. If you drag video from one window into a second window, the video from the second window is then displayed in the first window.
 - ♦ **Copy**. If you drag video from one window into a second window, that video is displayed in both windows.
 - ♦ **Move**. If you drag video from one window into a second window, the first window becomes blank.

The Search Page

The **Search** page allows you to search for recorded video from selected cameras and servers. To access the **Search** page, click the **Search** button on the toolbar.



To **search** for recorded video:

1. In the first field in the **From** area, enter the starting date (month/day/year) of your search period in the first field by clicking the numbers and typing your date. You can also use the down arrow to open a calendar of the current month; select the date from the current month or use the arrows at the top of the calendar to choose a date from a different month.
2. In the other field in the **From** area, select a starting time (hour:minute:second:am/pm). You can click the numbers and type in your entries, or you can use the arrows to change the numbers incrementally.
3. In the **Duration** area, enter the length of the search period in the **Days**, **Hours**, and **Minutes** boxes.
4. In the **camera tree**, select all the cameras whose video output you want to search. If all cameras are left blank, **RemoteView** will search all of them.
5. Click **Search**. When the search is complete, information for each search record is displayed at the bottom of the screen.

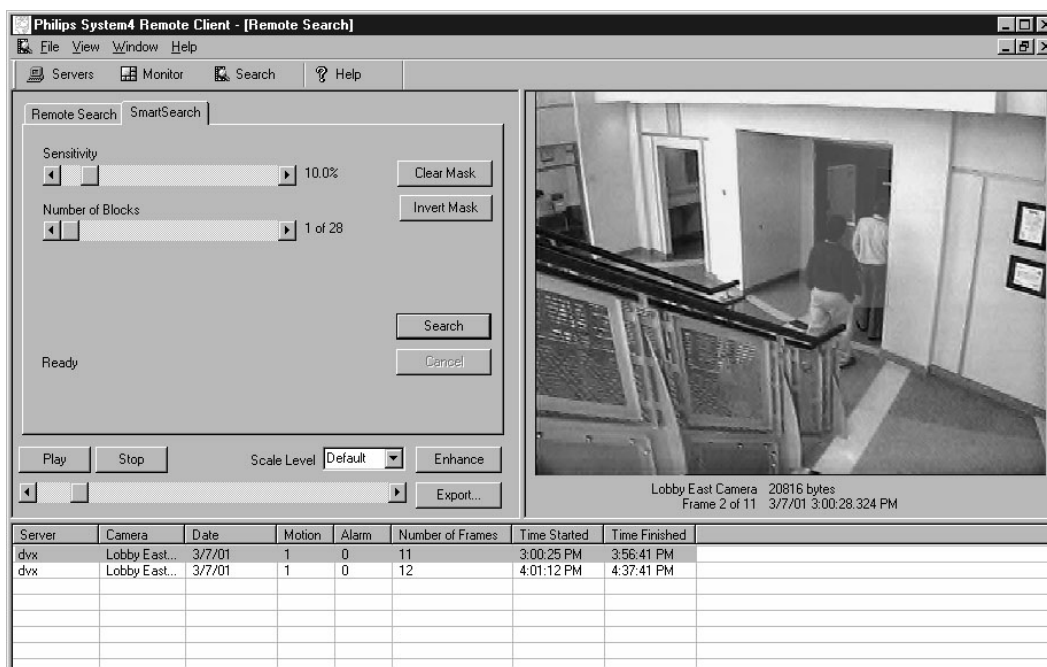
Now, the video files are available to the remote PC for viewing and exporting. They are sorted by camera name and listed along with the recording date, whether any motion or alarm events occurred (0 means no, 1 means yes), the number of images captured in the video segment, and the starting and stopping times of the segment. To sort the records by size, starting time, and so on, click the appropriate column title.

To **view** the video files located in the search:

1. Click on the information for the search record that you want to view; single-clicking displays the first frame, whereas double-clicking plays the video. Below the view screen is information about the image currently displayed, including the name of the camera that captured it, its size (in bytes), its number in the sequence of images, and the date and time the image was captured.
2. You can move the video forward and backward more quickly by dragging the box on the slider bar right or left (it may be necessary to move the scroll bar down or reduce the height of the search results window before the slider bar is visible). You can also click the arrows on the slider bar to view the video image-by-image, or click and hold to watch continuous video. Click **Stop** to freeze the video and **Play** to restart the video.
3. To verify that the video has not been changed in any way, click **Authenticate**. Any images that have been tampered with are located and displayed.

Using SmartSearch

SmartSearch is a useful tool that allows you greater control of the playback of a video segment. **SmartSearch** finds only those portions of a video segment that meet certain user-defined motion criteria. For example, you can highlight specific areas of a camera view and then quickly jump to all motion events that occur in those areas during a video segment. This is helpful if you want to filter video differently than you do using the *System4* Server masking utility, for example.



To perform a **SmartSearch**, complete the following steps:

1. After performing a search in the **First Line RemoteView** window, go to the **SmartSearch** tab.
2. Click on a search record so that its first frame appears in the view screen.
3. In the view screen, use the cursor to "paint blocks" over the areas in which motion events should be played back. All other areas will be ignored in the **SmartSearch**. To remove a block, click it once more, and then drag the cursor over any other blocks you want to remove. To remove all the blocks, click **Clear Mask**.
4. Note the **Number of Blocks** slider bar. Its indicator changes to show the number of blocks you painted in the view screen. Now, you can adjust the slider to determine how many of the painted blocks must change from one frame to the next for that frame to be displayed during playback. For example, if you painted 20 blocks and adjusted the slider to 10 of 20, half of the painted region would have to change for a frame to be played back.
5. Adjust the **Sensitivity** slider to indicate how much of a block must change from one frame to the next for it to be considered in the **Number of Blocks** equation. For example, if you chose a sensitivity of 30%, only 30 percent of a block would have to change for it to be considered part of a motion event. Thus, if you adjusted the **Number of Blocks** slider to 10 of 20, at least 30 percent of at least 10 of the 20 blocks would have to change for a frame to be displayed during playback.
6. Click **Search**. The first frame in which the defined number of blocks change the minimum amount is displayed. If you begin a **SmartSearch** in the middle of the video segment, the **SmartSearch** finds the next valid motion event; it doesn't begin the search at the beginning of the segment.

After you find a valid motion event, continue playing the video from that point or click **Search** again to jump to the next frame that meets the defined parameters.

Exporting Individual Images

To export **recorded video images** to other locations on your system, complete the following steps:

1. Click on the search result that contains the image you want to export so that it is displayed in the view screen.
2. Play back the video segment until you locate the image you want to export.
3. Click **Export**. The **Save As** window appears.
4. Make sure **Bitmap (*.bmp)** is selected in the **Save As Type** field. Choose a location and type a **File Name**. Click **Save** when you are finished.

The image is now saved in the location you specified. You can also copy a file to the clipboard by choosing **Copy** from the **Edit** menu.

Exporting Video Segments

To export **video segments** to other locations on your system, complete the following steps:

1. Make sure the proper scale level is selected before you export the video. When you export video, it is saved in the scale level currently chosen for the video, and you will not be able to enhance it.
2. Click on the search result you want to export so that it is displayed in the view screen.
3. Click **Export**. The **Save As** window appears.
4. Select a video type—XPress file (*.xpv) or Windows AVI file (*.avi)—in the **Save As Type** field. Choose a location, type a filename, and click **Save**.
5. If you choose **AVI**, you must enter a video compression codec and quality. **Full Frames** saves uncompressed images; other codec options must match the codec installed on your system. For each codec option, you can click on **Configure...** to access compression options specific to that codec.

The video segment is now saved in the location you specified.

APPENIDIX A: TECHNICAL REFERENCE MATERIALS

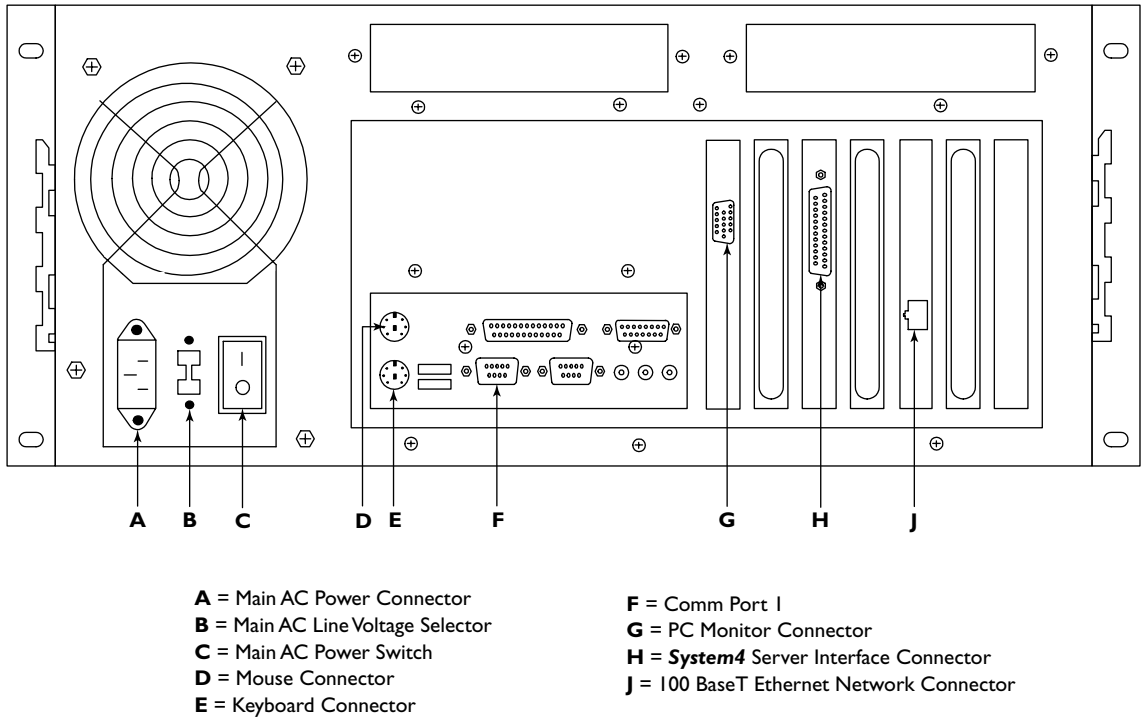


Figure A1 **System4** Server PC Rear Panel Details

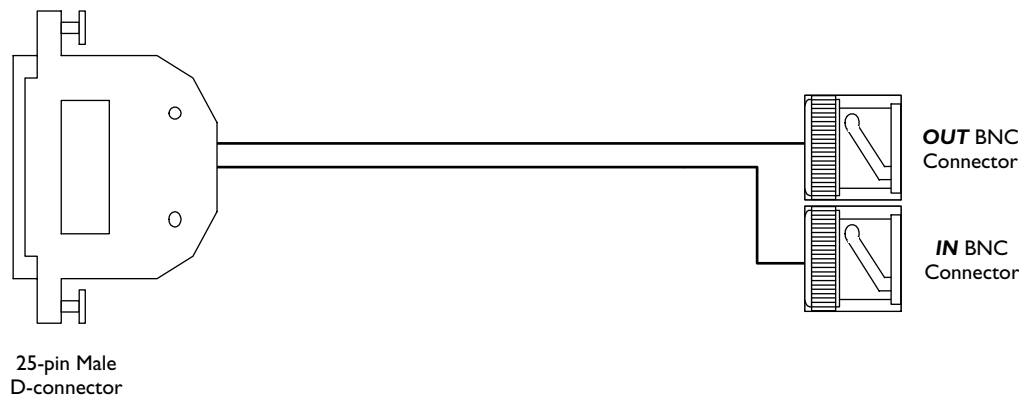


Figure A2 **System4** Server Interface Cable Specifications

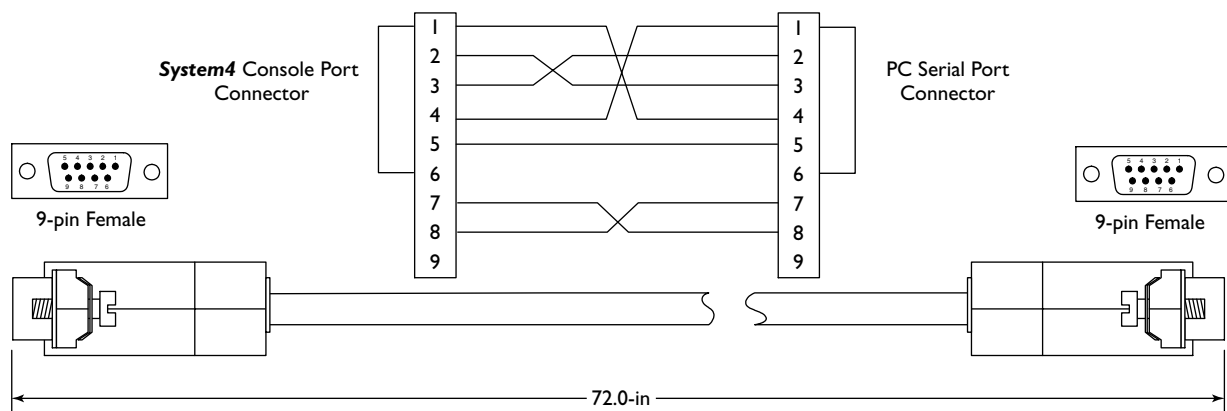


Figure A3 **System4** Console Cable Detail (Part Number SI385)

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