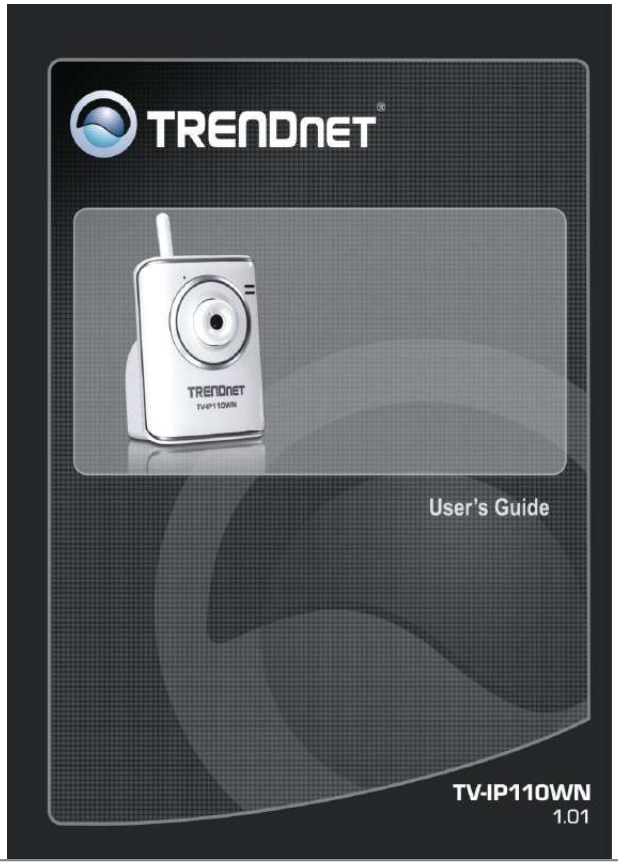

Manual abstract:

@@You can use this camera at home, at work, at any where you want. Accessing the Camera lets you start using your camera without problem. The camera can be set up easily and work within your network environment instantly. Configuring the Camera guides you through the configuration of the camera using the web browser on your PC. SecurViewTM Pro shows you the detail instructions on operating SecurViewTM Pro software. How to Access the Camera Behind a Router provides the instruction how to setup your DDNS. Appendix provides the specification of the camera and some useful information for using your camera. Chapter 2 Chapter 3 Chapter 4 Chapter 5 Chapter 6 Chapter 7 NOTE: The illustrations and configuration values in this guide are for reference only. The actual settings will depend on your practical application of the camera. -1- Contents PREFACE .

109 -3- CHAPTER 1 INTRODUCTION TO YOUR CAMERA 1.1 Checking the Package Contents Check the items contained in the package carefully. You should have the following: 1 x TV-IP110WN 1 x CD-ROM (Utility & User's Guide) 1 x Multi-Language Quick Installation Guide 1 x External antenna 1 x 5V 2.5A power adapter 1 x Network Cable 1 x Camera Stand NOTE: If there is any item damage or missing, please contact your local authorized dealer for replacement. -4- 1.2 Getting to Know Your Camera -5- - Power LED: A steady orange light indicates the camera is powered on. Link LED: A flash green light indicates the camera's network connection correctly. Lens: Adjust the focus by rotate outside of the Lens. WPS button: A quick connection button to your

encrypted wireless network Detachable Antenna: Adjust the antenna position to get the maximum signal. Camera Stand Connector: Connects the camera with the camera stand.

Power Connector: Connects the power adapter in order to supply the power to the camera. LAN Port: Connects one end of the Network cable to LAN port and connect the other end cable to your network Reset Button: Press the reset button once to reset the current setting. Press the reset button continuously for 5 seconds to restore the camera to factory default setting. - - - - - - - -6- 1.3 Features and Benefits Surveillance Supported The camera supports "nightshot mode" to deliver clearer images in the dark environment.

Enable motion detection and setup automated email alerts and upload the still image into FTP. Remote Control Supported By using a standard Web browser or the included SecurView Pro software application, the administrator can easily change the configuration of the camera via Intranet or Internet. In addition, the camera can be upgraded remotely when a new firmware is available. The users are also allowed to monitor the image and take snapshots via the network. Multiple Platforms Supported The camera supports multiple network protocols, including TCP/IP, SMTP e-mail, HTTP, and other Internet related protocols. Therefore, you can use the camera in a mixed operating system environment, such as Windows Vista and Windows 7. Multiple Applications Supported Through the remote access technology, you can use the cameras to monitor various objects and places for your own purposes. For example, babies at home, patients in the hospital, offices and banks, and more. The camera can capture both still images and video clips, so that you can keep the archives and restore them at any time. WPS Supported WPS (Wi-Fi Protected Setup) standard is a new solution that simplifies the process of configuring Wi-Fi security settings, allowing you to establish a secure wireless network by simply pressing a button. Note: Support SSL with complimentary software -7- 1.4 System Requirement Networking LAN: 10Base-T Ethernet or 100Base-TX Fast Ethernet, Auto-MDIX WLAN: Based on IEEE 802.11n technology, IEEE 802.11g/b Accessing the Camera using Web Browser Platform: Microsoft® Windows® 7/Vista/XP CPU: Intel Pentium III 800MHz or above RAM: 512MB Resolution: 800x600 or above User Interface: Microsoft® Internet Explorer 6.0 or above Accessing the Camera using SecurView Pro Platform: Microsoft® Windows® 7/Vista/XP Hardware Requirement: 1 ~ 8 cameras: Intel Core 2 Duo; 2GB RAM 9 ~ 32 cameras: Intel Core 2 Quad; 4GB RAM NOTE: It is higher recommended that using a high performance computer to monitor multiple cameras.*

-8- CHAPTER 2 HARDWARE INSTALLATION 2.1 Installing the Camera Stand The camera comes with a camera stand, which uses a swivel ball screw head to lock to the camera's screw hole. When the camera stand is attached, you can place the camera anywhere by mounting the camera through the three screw holes located in the base of the camera stand. The Camera Stand -9- 2.2 Connecting the Camera to LAN Use the provided Ethernet cable to connect the camera to your local area network (LAN). When you connect the power adapter, the camera is powered on automatically. You can verify the power status from the Power LED (amber) on the front panel of the camera. Once connected, the Link LED starts flashing green light and the camera is on standby and ready for use now. If you use a wireless network in your application environment, you need to attach the included detachable antenna to the camera. If your wireless network has set encryption, you can use WPS button or configure the wireless connection via a LAN connection.

*NOTE: Please configure the wireless setting via the wire connection. - 10 - 2.3 Applications of the Camera The camera can be applied in multiple applications, including: Monitor local and remote places and objects via Internet or Intranet Capture still images and video clips remotely Upload images or send email messages with the still images attached The following diagram explains one of the typical applications for your camera and provides a basic example for installing the camera. * - 11 - CHAPTER 3 ACCESSING THE CAMERA 3.1 Using IP Setup The camera comes with a conveniently utility, IP Setup, which is included in the Installation CD-ROM, allowing you to search the camera on your network easily.*

1. Insert the Installation CD-ROM into your computer's CD-ROM drive to initiate the Auto-Run program. - 12 - 2. Click the IP Setup from the Auto-Run menu screen. Then IP Setup Wizard will appear.

Click "Next" when the Welcome to the IPSetup Setup Wizard appears. 3. Click "Browse" to choose the desired destination location. By default, the destination location is C:\Program Files\TRENDnet\IPSetup. Then Click "Next". - 13 - 4. Click "Next" to confirm the IPSetup software to be installed to the computer. 5. When the Installation Complete window appears, click "Finish". - 14 - 6.

After installing the IPSetup utility, the application is automatically installed to your computer, and creates a folder in "Start \Program\TRENDnet\IPSetup". Click Start > Programs > TRENDnet > IPSetup, and then click IPSetup 7. 8. The IPSetup window will appear. It will search the Camera within the same network. Camera Display Area - 15 - - Camera Display Area: It shows the connected camera(s) within the same network. By default, the IP setting on the Camera is set up DHCP. If you have DHCP server, the camera will automatic get the IP address from DHCP server. If you do not have DHCP server on your network, it will show the default IP as 192.168.

10.30. Double click the IP address; it will link to Camera's Web Configuration page. - Change IP: Click this button to bring up the following window. It allows you to change the IP Address.

You can select either Static IP or click DHCP. Then, enter the Administrator ID & password. By default ID/password is: admin. When complete, click "Change". - Search: Click this button to search the connected camera in the same network.

" Exit: Click this button to exit the program. - 16 - 3.2 Accessing to the Camera 1. Open the Web browser on your computer (example showed in the User's Guide is based on the Internet Explorer) Type the Camera IP address that DHCP server assigned in the web browser URL (e.g. 192.168.10.30) and then press [Enter]. 2.

3. When the login window appears, enter the default User name (admin) and password (admin) and press OK to access to the main screen of the camera's Web Configuration. NOTE: If you are initially access to the camera, you will be asked to install a new plug-in for the camera. Permission request depends on the Internet security settings of your computer. Click Yes to proceed. - 17 - After you login into the Web Configuration of the camera, the main page will appear as below: Camera Information Zoom In Live View/ Setup Function Live View Image The m the settings; or click Cancel to end the wizard and discard the changes. - 26 - 4.3 Basic Setup The Basic menu contains three sub-menus that provide the system settings for the camera, such as the Camera Name, Location, Date & Time, and User management. - 27 - Basic >> System Basic - Camera Name: Enter a descriptive name for the camera. - Location: Enter a descriptive name for the location used by the camera.

Indication LED This item allows you to set the LED illumination as desired. There are two options: Normal and OFF. Basic >> Date & Time - 28 - Date & Time - TimeZone: Select the proper time zone for the region from the pulldown menu. - Synchronize with PC: Select this option and the date & time settings of the camera will be synchronized with the connected computer. - Synchronize with NTP Server: Select this option and the time will be synchronized with the NTP Server.

You need to enter the IP address of the server and select the update interval in the following two boxes. - Manual: Select this option to set the date and time manually. Basic >> User Administrator To prevent unauthorized access to the camera's Web Configuration, you are strongly recommend to change the default administrator password. Type the administrator password twice to set and confirm the password. - 29 - General User - User Name: Enter the user's name you want to add to use the camera.

- Password: Enter the password for the new user. When you are finished, click Add/Modify to add the new user to the camera. To modify the user's information, select the one you want to modify from User List and click Add/Modify. - User List: Display the existing users of the camera. To delete a user, select the one you want to delete and click Delete. Guest - User Name: Enter the guest's name you want to add to use the camera. - Password: Enter the password for the new guest. - User List: Display the existing guests of the camera. To delete a user, select the one you want to delete and click Delete. Direct Video Stream Authentication: - Enabled = Direct link to the video stream prompts for authentication.

- Disable = Direct link to video does not prompt for authentication for ease of use when implementing or embedding the video stream into a custom application or webpage. Examples of the Direct Link to video: MJPEG Mode http://camera_ip_address:port number/jpgview.htm NOTE: The "General User" can access the camera and control the Function buttons of the camera's Web Configuration; the "Guest' can only view the live view image from the main page of the Web Configuration while accessing the camera. Only the "Administrator" is allowed to configure the camera through the Web Configuration. - 30 - 4.4 Network Settings The Network menu contains three sub-menus that provide the network settings for the camera, such as the IP Setting, DDNS Setting, IP Filter, and wireless network. - 31 - Network >> Network IP Setting This item allows you to select the IP address mode and set up the related configuration. - DHCP: The default IP Setting mode was set as DHCP. Select this option when your network uses the DHCP server. When the camera starts up, it will be assigned an IP address from the DHCP server automatically.

- Static IP: Select this option to assign the IP address for the camera directly. You can use IPSetup to obtain the related setting values. IP By the default setting, your camera IP address is - 32 - assigned from your DHCP server. If you do not have a DHCP server in your network, the IP address will be assigned to 192.168.

10.30. Subnet Mask Default Gateway Primary/ Secondary DNS Enter the Subnet Mask of the camera. The default setting is 255.255.

255.0. Enter the Default Gateway of the camera. DNS (Domain Name System) translates domain names into IP addresses. Enter the Primary DNS and Secondary DNS that are provided by ISP. - PPPoE: Select this option when you use a direct connection via the ADSL modem. You should have a PPPoE account from your Internet service provider. Enter the User Name and Password. The camera will get an IP address from the ISP as starting up. NOTE Once the camera get an IP address from the ISP as starting up, it automatically sends a notification email to you.

Therefore, when you select PPPoE as your connecting type, you have to set up the email or DDNS configuration in advance. DDNS Setting With the Dynamic DNS feature, you can assign a fixed host and domain name to a dynamic Internet IP address. Please refer to Chapter 6 for detail instruction. UPnP The camera supports UPnP (Universal Plug and Play), which is a set of computer network protocols that enable the device-to-device interoperability. In addition, it supports port auto mapping function so that you can access the camera if it is behind an NAT router or firewall. Select the Enable option to enable this feature. Ports Number - HTTP Port: The default HTTP port is 80. NOTE: If the camera is behind an NAT router of firewall, the port number is suggested in the range between 1024 to 65535. - 33 - Network >> IP Filter The IP Filter setting allows the administrator of the camera to limit the users within a certain range of IP addresses to access the camera. Start/End IP Address Assign a range of IP addresses that are not allowed to access the camera by entering the Start IP address and End IP address.

When you are finished, click Add to save the range setting. You can repeat the action to assign multiple ranges for the camera. For example, when you enter 192.168.10.

50 in Start IP Address and 192.168.10.80 in End IP Address, the user whose IP address located within 192.168.

10.50 ~ 192.168.10.80 will not be allowed to access the camera. Deny IP List The list displays the range setting(s) of IP addresses that are not allowed to access the camera. To clear the setting, select a range of IP addresses from the list and click Delete. - 34 - Network >> Wireless Setting Wireless The camera supports WLAN while you use the wireless network. Select the Enable option to enable this feature. - Network ID (SSID}: The default SSID setting is "TRENDnet".

To connect the camera to a specified access point, set a SSID for the camera to correspond with the access point's ESS-ID. To connect the camera to an Ad-Hoc wireless workgroup, set the same wireless channel and SSID to match with the computer's configuration. - 35 - Click Site Survey to display the available wireless networks, so that you can easily connect to one of the listed wireless networks. - Wireless Mode: Select the type of wireless communication for the camera: Infrastructure or Ad-Hoc. - Channel: Select the appropriate channel from the list. - Authentication: Select the authentication method to secure the camera from being used by unauthorized user: Open, Shared-key, WPA-PSK, and WPA2-PSK. The following table explains the four options: Open Shared-key WPA-PSK/ WPA2-PSK The default setting of Authentication mode, which communicates the key across the network. Allow communication only with other devices with identical WEP settings. WPA-PSK/WPA2-PSK is specially designed for the users who do not have access to network authentication servers. The user has to manually enter the starting password in their access point or gateway, as well as in each PC on the wireless network.

- 36 - If you select Open or Shared-key as the Authentication mode, you need to complete the following settings: Encryption: Select the WEP option to enable the data encryption feature to secure the camera within the wireless network. Format: Once you enable the Encryption feature, you need to determine the encryption format by selecting ASCII or HEX. ASCII format causes each character you type to be interpreted as an eightbit value. Hex format causes each pair of characters you type to be interpreted as an eight-bit value in hexadecimal (base 16) notation. Key Length: Select the WEP key length you use: 64 bits or 128 bits.

WEP Key 1/2/3/4: Enter the WEP key(s) in the following boxes. If you select WPA-PSK or WPA2-PSK as the Authentication mode, you need to complete the following settings: Encryption: Select TKIP or AES. TKIP (Temporal Key Integrity Protocol) changes the temporal key every 10,000 packets to insure much greater security than the standard WEP security. AES (Advanced Encryption Standard) is used to ensure the highest degree of security and authenticity for digital information. Pre-Shared Key: This is used to identify each other in the network.

Enter the name in the box, and this name must match the Pre-shared key value in the remote device. - 37 - Network >> Wireless >> WPS Setting WPS (Wi-Fi Protected Setup) sets a new standard of Wi-Fi security, providing a simplified secure network setup solution for the end users. Once the required settings have been completed, your wireless network can be protected by simply pressing the WPS button on the camera. PROTECTED SETUP Press the Reset to Unconfigured button to reset the WPS configuration of the camera. WPS - PIN Mode: The PIN (Personal Information Number) mode builds the connection by entering the PIN Code directly. Once you enter the PIN Code of the camera on the router (or access point) that supports WPS, you can directly build a WPS connection between the camera and the device by simply pressing its WPS button. - 38 - - PBC Mode: The PBC (Push Button Configuration) mode builds the connection by scanning the devices in the wireless network. Once you press the camera's WPS button, it starts to scan the WPS devices in the wireless network, and then you can build the WPS connection by clicking the Connect button. Device Status Display the WPS configuration of the camera. The Power LED indicates the WPS connection status by: - blinking 3 times when the connection is built successfully.

- repeating 3 times of short-short-long blink when the connection is failed. TIP - 39 - 4.5 Setting up Video The Video contains three sub-menus that provide the video and settings for the camera. - 40 - Video >> Camera Image Setting - Brightness: Adjust the brightness level from 0 ~ 100. - Contrast: Adjust the contrast level from 0 ~ 100. - Saturation: Adjust the colors level from 0 ~ 100. Click Default to restore the default settings of the three options above. - Mirror: Select the Horizontal option to mirror the image horizontally. Select the Vertical option to mirror the image vertically. - Light Frequency: Select the proper frequency according to the camera's location: 50Hz, 60Hz, or Outdoor.

Overlay Setting - Includes Date & Time: Select this option to display the date & time stamp on the live view image. - Enable Opaque: Select this option to set a black background to the displayed date & time stamp. - 41 - MJPEG - Video Resolution: Select the desired video resolution from the three formats: VGA, QVGA and QQVGA. The higher setting (VGA) obtains better video quality while it uses more resource within your network. - Video Quality: Select the desired image quality from five levels: Lowest, Low, Medium, High, and Highest.

- Frame Rate: Select a proper setting depending on your network status. NOTEThe camera supports MJPEG compression.

MJPEG capture the images in JPEG format, which require higher bandwidth to view smooth video. The administrator can control the bandwidth of each connection well through the setting options above. - 42 - 4.

6 Event Server Configuration The Event Server menu contains three sub-menus that allow you to send notification to NVR, upload images to FTP or send images to emails. When you complete the required settings of HTTP, FTP or Email, click Test to verify the configuration. Once the camera connects to the server successfully, click Apply. - 43 - Event Server Setting>> HTTP HTTP Notify For Motion Trigger Send the query parameter via an HTTP notification when an event is triggered. - Host: Enter the IP of the HTTP server - Port: Enter the Port number of the HTTP server - User Name: Enter the username of the HTTP server - Password: Enter the password of the HTTP server - Query: Enter the query parameter for the request if necessary Example: Host: 192.168.10.1 Port: 80 Query: xxx.cgi?name1=value1&name2=value2 Ex: cgi/event.cgi?status=#s&time=#t&model=modelname Result: http://192.

168.10.1:80/cgi/event.cgi?status=#s&time=#t&model=m odelname - 44 - Event Server Setting>> FTP FTP - Host Address: Enter the IP address of the target FTP server. - Port Number: Enter the port number used for the FTP server. - User Name: Enter the user name to login into the FTP server. - Password: Enter the password to login into the FTP server. - Directory Path: Enter the destination folder for uploading the images. For example, /Test. - Passive Mode: Select the Enable option to enable passive mode.

- 45 - Event Server Setting >> Email Email - SMTP Server Address: Enter the mail server address. For example, mymail.com. - Sender Email Address: Enter the email address of the user who will send the email. For example, John@mymail.

com. - Sender User Name: Enter the user name to login the mail server. - Sender Password: Enter the password to login the mail server. - Receiver #1 Email Address: Enter the first email address of the user who will receive the email. - Receiver #2 Email Address: Enter the second email address of the user who will receive the email.

- 46 - 4.7 Motion Detect The Motion Detect menu contains the command and option that allow you to enable and set up the motion detection feature of the camera. The camera provides two detecting areas. To enable the detecting area, select Window 1 or 2 from the pull-down list, and then select Enable. When the detecting area is enabled, you can use the mouse to move the detecting area and change the area coverage. - 47 - - Name: Assign a name to the detecting area. - Threshold: Move the slide bar to adjust the level for detecting motion to record video. Click Save once done the setting. - 48 - 4.8 Event Config The Event Config menu contains four sub-menus that provide the commands to configure event profiles.

Event Configuration >> General Setting - 49 - - Snapshot/Recording Filename Prefix: You can assign a given prefix to each new captured file. Otherwise, leave this option blank to use the default setting. Event Configuration >> Arrange Schedule Profile This sub-menu displays the scheduled profile(s). To customize the profile, click Add and then enter a descriptive name for the profile in the prompt dialog window. After entering the profile name, click OK and the profile is added to the Schedule Profiles list. Click the profile name again to display the schedule profile page. To delete the profile, select the profile in the list and click Delete. - 50 - - Profile Name: Display the profile name that you select in the Schedule Profiles list. - Weekdays: Select the weekday(s) that you want to separately assign in the schedule profile. The weekday that has been assigned will be displayed with green color.

- Time List: Display the time period that you have assigned within the selected weekday. To assign the same time period to every weekday, click Add this to all weekdays; click Delete this from all weekdays to remove the selected time period from every weekday. Click Delete to remove the selected time period. - Start/End Time: Enter the start and end time and then click Add to assign a time period within in the selected weekday. - 51 - Event Configuration >> Motion Detect Trigger Select the Enable option to enable the trigger function of the camera, so that you can send captured images within the detecting area to the FTP server and email receiver.

You have to configure corresponding settings, such as FTP server and email server, to enable this feature. - Schedule Profile: Select a schedule profile from the pull-down list. - Action: Select the destination that the captured images will be sent to: HTTP Notify, Send Email, or FTP Upload. - 52 - Event Configuration >> Schedule Trigger You can separately configure the schedule for trigger function of the camera by Email or FTP. Select the Enable option on each item, and then select a Schedule Profile from the pull-down list and set the Interval time.

- 53 - 4.9 Tools The Tools menu provides the commands that allow you to restart or reset the camera. You can also backup and restore your configuration, and upgrade the firmware for the camera. - 54 - Factory Reset Click Reset to restore all factory default settings for the camera. System Reboot Click Reboot to restart the camera just like turning the device off and on. The camera configuration will be retained after rebooting. Configuration You can save your camera configuration as a backup file on your computer. Whenever you want to resume the original settings, you can restore them by retrieving the backup file. - Backup: Click Get the backup file to save the current configuration of the camera. - Restore: Click Browse to locate the backup file and then click Restore.

Update Firmware This item displays the current firmware version. You can upgrade the firmware for your camera once you obtained a latest version of firmware. - Select the firmware: Click Browse to locate the backup file (xxx.pck) and then click Update. Factory reset and IP Setup are required after firmware update. NOTE: Make sure to keep the camera connected to the power source during the process of upgrading firmware. Otherwise, the camera might be damaged because of failure of upgrading firmware. - 55 - 4.10 Information The Information menu displays the current configuration and events log of the camera. Device Info Display the Basic, Video, Network, and Wireless settings of the camera.

System Log The Logs table displays the events log recorded by the system. - 56 - CHAPTER 5 SECURVIEWTM PRO SOFTWARE This chapter describes detailed instructions on using SecurView Pro, a customized software application with a user-friendly interface that allows you to access your cameras. The Software can monitor and record up to 36 cameras. It also let you change some basic settings of the camera, such as schedule profiles and motion detecting areas.

The SecurView Pro also supports audio or Pan/Tilt function.
*It is recommended to use a high performance computer if you want to connect multiple cameras simultaneously. Platform: Microsoft® Windows® 7/Vista/XP Hard Disk: 80GB or above Resolution: 1024x768 or above Hardware Requirement 1 ~ 8 cameras: Intel Core 2 Duo; 2GB RAM 9 ~ 32 cameras: Intel Core 2 Quad; 4GB RAM * For Windows Vista users: please go to User Accounts and Family Safety > User Accounts > Turn User Account Control on or off, then uncheck the checkbox of "Use User Account Control (UAC) to help protect your computer". Restart your computer to validate the setting. For additional information of User Account Control, please go to http://www.microsoft.*
*com/windows/products/windowsvista/features/details/u seraccountcontrol.mspx * For Windows 7 users, please go to Control Panel > User Accounts > Change User Account Control Setting to lower your notify setting. For additional information of User Account Control, please go to http://windows.microsoft.com/en-us/windows7/products/features/useraccount-control - 57 - 5.1 Installation 1. 2. Insert the Installation CD-ROM into your computer's CD-ROM drive to initiate the Auto-Run program. Click the SecurView Pro from the Auto-Run menu screen. NOTE: To use SecurView Pro, you must have Microsoft .*

NET Framework 2.0 installed in the computer. The setup wizard will detect it and, if the program is not installed yet, it will ask you to install it during the process of installing SecurViewTM Pro. NOTE: Microsoft Windows Installer 3.0 or above is a required component to install SecurView Pro. For more information of the required component during installation, please visit the Microsoft support Website. - 58 - 3. Then SecurView Pro Setup Wizard will appear. Click "Install". 4.
Wait until the program finish the installation. By default, the destination location is C:\Program Files\TRENDnet\SecurView Pro. - 59 - 5. Click "Finish" to finish the installation. 6.
After installing the SecurView Pro, the application is automatically installed to your computer, and creates a folder in " Start \Program\TRENDnet\SecurView Pro ". - 60 - 5.2 Using SecurViewTM Pro 5.2.1 Launch the Program To start SecurView Pro, click Start > All Programs > TRENDnet >SecurView Pro > SecurView Pro.
You can also start the program by double-click the SecurView Pro icon on your desktop. On the login window, enter the User name/Password and click OK to login. The default User name/Password is admin/admin. If you wish to save the login information, please select Auto Login. - 61 - 5.2.2 Main Window and Features When you start and login to SecurView Pro, the Main window will display as below: The Main window provides you with the information on operating the system, as well as the control panel such as the Quick Launch buttons, and so on. NOTE For best result, it is higher recommended to configure resolution setting to 1024 x 768 or higher; otherwise, it cannot be displayed on the screen when launching the program. Live View Window displays the live video of the connected camera(s). - 62 - Quick Launch Buttons are located below the Live View Window, providing you with the following quick-launch functions: Button Function Logout : To log out the SecurView Pro program Close: To close the SecurView Pro program Restore Recording Type: Restore all recording type to current camera's setting All Continuous Recording: Continuous recording on all cameras Stop All Recording: Stop recording on all cameras View Setting: To configure eMap settings eMap View: To view current maps Camera Status: Display cameras status Playback: Playback recorded files Schedule: Display Schedule Configuration window Event Server: Setup a SMTP server Address Book: Add/Remove email address for event notification Event Trigger: Setup event trigger configuration Device Setting : Set up the camera Recording Setting: Set up the recording path Account information: Setup administrator password Version: Display software version System Setting: Software settings - 63 - Camera View Mode buttons in this area allow you to switch the camera view mode.

Buttons Functions Display the connected camera(s) in a single camera view mode. Display the connected camera(s) in a quad view mode. Display the connected camera(s) in a 3 x 3 grid view mode. Display the connected camera(s) in a 13-camera view mode using a split window. The first camera is displayed as the major view. Display the connected camera(s) in a 17-camera view mode using a split window. The first camera is displayed as the major view. Display the connected camera(s) in a N x N grid view mode, supporting up to 36 cameras. Display the live view of the selected camera in full screen mode. Click ESC on the keyboard to return to Main window.
@@Click once to start and click again to stop. @@@@@@@@Click to enable/disable the speaker function of the connected camera. This option is available only in single camera view mode. Listen On/Off. @@This option is available only in single camera view mode.
@@@@@@Navigation Buttons (Left/Right/Up/Down/Home). @@@@@@Click Patrol to start patrolling through the preset positions once.
@@@@@@@@@@@@These four recording types will appear. @@You can setup the schedule by click Add Schedule here. Click on New to create a new schedule and select the time to record.
@@Motion detection recording required to setup a motion detection area. @@@@Digital Input: Recording triggered when there I/O port is triggered. - 71 - After all recording methods are configured, click Save to apply the settings. 7. Camera list will appear with recording type notification. - 72 - 8. Once you added all the cameras, click the close button "x" on the Device Setting windows to return to the main windows. The cameras will display here. NOTE Divx/Xvid codec is required for viewing the image of camera. If the image cannot be displayed in the Live View/Preview window normally, click the following path to download and install the required component: http://download.

divx.com/divx/DivXInstaller.exe - 73 - Edit / Delete a Camera 1. To edit a camera: From the Device Setting window, highlight the camera you would like to edit then click on Modify button. 2. To delete a camera: select the desired one and then click Remove. Click Yes to confirm. - 74 - View Camera Image Since you have added camera(s) to the system, the image of the selected camera(s) will be displayed on the Live View Window automatically. You can view a maximum of 36 cameras simultaneously. Additionally, you can select one-camera or other view mode to display the video from the Camera View Mode buttons.
For example, if you use only one camera, select single camera view mode ( ), and the Live View Window will display the view as below. You can select the other modes according to your need.

The Information icon ( ) on the top-right corner of the window provides you with the options to connect/disconnect the camera, select a camera to be displayed in the window, capture a still image of the camera live video, or switch to eMap mode. Click the Information icon to pop up the shortcut menu and select the desired option. - 75 - Playback the Recorded Files 1.
Click the button to display the Playback window. 2. On the Playback window, select the camera and setup the begin/end date and begin/end time, then click Search. The search result will be displayed in the Record File list. - 76 - 3.
To playback the video clip, select the desired file and click Play. - 77 - 5.2.4 eMap Setup & Camera Status Manage eMap Click the button and select View Setting to manage eMap. eMap refers to the geography and device scope in the SecurView Pro, which visually presents the devices in your security system. It uses a background of the area (e.g. a picture or a map) as the interface for monitoring. To add an eMap 1. On the View Setting window, click New.

- 78 - 2. Enter an eMap name. 3. Click Browse to select a Picture File from your computer. Picture will display in the Preview window. - 79 - 4. Click Save and click OK to apply the settings. 5. Click Camera Location to assign the camera location. - 80 - 6.
The following screen appears. 7. Select the camera from the list and then click the position on the map. The camera icon will be displayed on map. - 81 - 8. Click Save when complete. To modify/remove an eMap 1. To edit the eMap: In the eMap List, select the map name from eMap list, and click Modify. The map's information will display on the preview windows. After changes the setting information, click Save to save the setting.
- 82 - 2. To delete the eMap: In the eMap List, select the desired one and click Remove. The selected map will be removed from the list. View eMap a. Click the button and select eMap View. - 83 - b. Select the map from the eMap Name list. Camera Status Click the camera icon , the camera Live Monitor window will display live image on that camera. - 84 - 5.2.

5 System Info Account Click the System button and select Account to change the administrator password of the system. Enter the Current password, and then enter the new password twice (in the Type new password and Retype password boxes). Then click Save. - 85 - Version Click the System button and select Version to view the current firmware version of the system. System Setting Click the System button and select System Setting. Auto Scan period can be set from 30 seconds to 100 seconds. - 86 - 5.2.6 Event Settings Setting up Event Server Click the button and select Event Server to configure the SMTP settings for email notification use. Select the Enable SMTP option and configure the following information correctly to start the email feature.
- 87 - SMTP Server Address: Enter the mail server address. For example, mymail.com or smtp.gmail.com or smtp.
live.com Sender Email Address: Enter the email address of the user who will send the email. For example, John@mailserver.com. Authentication Mode: Select None or SMTP according to the mail server configuration.
Sender User Name: Enter the user name to login the mail server. Sender Password: Enter the password to login the mail server. Port Number: Enter the port number used for the email server. SSL: If the mail server requires an encrypted connection, you should check the SSL option. For example, gmail users, please select this option. When completed, click Save and then select OK. The system will automatically start the Event Service. TIP The status of Event Service is indicated by the icon in the system bar. - 88 - Sending Notification to the User Click the button and select Address Book to assign the user to the Address Book of the camera. The user will receive a realtime notification from the system while triggering out.

1. 2. 3. On the Address Book window, click New. In the Address Book Information field, enter the Name and Email of the user. When completed, click Save. The user will be displayed in the Address Book List. - 89 - 4. To edit the user: In the Address Book List, select the desired user and click Modify. The user's information will be displayed, where you can change the user's information and then click Save when completed.
To delete the user: In the Address Book List, select the desired user and click Remove. The selected user will be removed from the list. 5. Configuring Event Trigger Click the button and select Event Trigger to configure the trigger out function of the camera. - 90 - 1.
2. On the Event Trigger window, select the desired camera from the Camera List. Do one of the following: SMTP: Select this option and enter the Subject and Message, the system will send an email message to the selected user(s) in the Address Book List. Play Sound: Select this option select a sound file from the computer, so that the system will alarm by the sound while triggering out. eMap Popup: Select this option and select the eMap profile from the pull-down menu.
The camera view of the eMap will be displayed while triggering out. 5.2.7 Close Program When you have finished operating, click the button and select Logout to logout the system or Close to exit the program. - 91 - CHAPTER 6 How to access the camera behind a Router You can either setup the Dynamic DNS connection via camera itself or your home router. An account from any of the listed DDNS providers is required prior to this operation. Configure DDNS on your Camera 1. Go to Camera's DDNS Setting page, click Enable to activate the feature. Then select a DDNS provider from the list. 2.

Enter your DDNS's the Host Name, User Name and Password. - 92 - 3. In the Port Number section, assign an HTTP port of the camera. The default HTTP Port on the camera is 80. The example shows above is using port number 9000. Open another web browser and go to your Router's Web Configuration page. (In the example, TRENDnet's TEW-651BR Wireless N router is used) 4. 5. Go to Virtual Server section and create a new entry. Enable: Click Enable Name: Enter the application name (eg.*
*CameraName) Protocol: Select TCP - 93 - Private Port: The HTTP port that you assign on your Camera. Public Port: The port used on remote side to access to your Camera. LAN Server: The local IP address of your Camera. Then click Add to add the application. * Please refer to your router's user's manual for detail Virtual Server setting.*
Some router might use Port Forwarding or Special applications for this function. The setup steps should be very similar. - 94 - 6. Open another web browser and enter your DDNS domain and camera's port number. http://yourDomainName:PortNumber 7.
Camera's login page will appear. Configure DDNS on your router 1.

Go to Camera's DDNS Ports Number section, assign a HTTP port for your camera and click Apply. 2. Login to your router's web configuration page. - 95 - 3. Find the Dynamic DNS configuration section. 4. Enable DDNS, fill out the following information and then click Apply. - 96 - 5.

Go to Virtual Server section and create a new entry. Enable: Click Enable Name: Enter the application name (eg. Camera Name) Protocol: Select TCP Private Port: The HTTP port that you assign on your Camera. Public Port: The port used on remote side to access to your Camera. LAN Server: The local IP address of your Camera. Click Add to add the application. * Please refer to your router's user's manual for detail Virtual Server setting. Some router might use Port Forwarding or Special applications for this function. The setup steps should be very similar. 6.*
Open another web browser and enter your DDNS domain and camera's port number. http://yourDomainName:PortNumber 7. The camera login page will appear. - 97 - CHAPTER 7 APPENDIX A.1 Specification Image Sensor Sensor Resolution 1/4" color CMOS 640x480 Video CompressionMJPEG Video resolution VGA/QVGA/QQVGA; up to 30fps System Hardware Processor RAM ROM Power Communication LAN WLAN Protocol support ARM9 base 32MB SDRAM 4MB NOR Flash DC 5V 10/100Mbps Fast Ethernet, auto-sensed, Auto-MDIX Based on IEEE 802.
11n technology, IEEE 802.11g/b TCP/IP, UDP, ICMP, DHCP, NTP, DNS, DDNS, SMTP, FTP, HTTP, PPPoE, UPnP User Interface LAN Antenna One RJ-45 port One external antenna - 98 - WPS Reset LEDs Software OS Support Browser Software One WPS button One Reset button Power LED (amber); Link LED (green) Windows 7/Vista/XP Internet Explorer 6.0 or above SecurView Pro for playback/recording/ configuration features Operating Environment Temperature - Operation: 0C ~ 45C - Storage: -15C ~ 60C Humidity Max. 85% non-condensing EMI FCC Class B, CE Class B - 99 - A.2 Glossary of Terms NUMBERS 10BASE-T 100BASE-TX 10BASE-T is Ethernet over UTP Category III, IV, or V unshielded twisted-pair media.
The two-pair twisted-media implementation of 100BASE-T is called 100BASE-TX. A ADPCM Adaptive Differential Pulse Code Modulation, a new technology improved from PCM, which encodes analog sounds to digital form. AMR (Adaptive Multi-Rate) is an audio data compression scheme optimized for speech coding, which is adopted as the standard speech codec by 3GPP. Applets are small Java programs that can be embedded in an HTML page. The rule at the moment is that an applet can only make an Internet connection to the computer form that the applet was sent. American Standard Code For Information Interchange, it is the standard method for encoding characters as 8-bit sequences of binary numbers, allowing a maximum of 256 characters. Address Resolution Protocol. ARP is a protocol that resides at the TCP/IP Internet layer that delivers data on the same network by translating an IP address to a physical address. Audio Video Interleave, it is a Windows platform audio and video file type, a common format for small movies and videos. AMR Applet ASCII ARP AVI B BOOTP Bootstrap Protocol is an Internet protocol that can automatically configure a network device in a diskless workstation to give its own IP address.

C - 100 - Communication Communication has four components: sender, receiver, message, and medium. In networks, devices and application tasks and processes communicate messages to each other over media. They represent the sender and receivers. The data they send is the message. The cabling or transmission method they use is the medium. In networking, two devices establish a connection to communicate with each other. Connection D DHCP Developed by Microsoft, DHCP (Dynamic Host Configuration Protocol) is a protocol for assigning dynamic IP addresses to devices on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network. In some systems, the device's IP address can even change while it is still connected. It also supports a mix of static and dynamic IP addresses.
This simplifies the task for network administrators because the software keeps track of IP addresses rather than requiring an administrator to manage the task. A new computer can be added to a network without the hassle of manually assigning it a unique IP address. DHCP allows the specification for the service provided by a router, gateway, or other network device that automatically assigns an IP address to any device that requests one. Domain Name System is an Internet service that translates domain names into IP addresses. Since domain names are alphabetic, they're easier to remember.
The Internet however, is really based on IP addresses every time you use a domain name the DNS will translate the name into the corresponding IP address. For example, the domain name www.network_camera.com might translate to 192.167.
222.8. DNS E Enterprise network An enterprise network consists of collections of networks connected to each other over a geographically dispersed area. The enterprise network serves the needs of a widely - 101 - distributed company and operates the company's missioncritical applications. Ethernet The most popular LAN communication technology. There are a variety of types of Ethernet, including 10Mbps (traditional Ethernet), 100Mbps (Fast Ethernet), and 1,000Mbps (Gigabit Ethernet). Most Ethernet networks use Category 5 cabling to carry information, in the form of electrical signals, between devices. Ethernet is an implementation of CSMA/CD that operates in a bus or star topology. F Fast Ethernet Firewall Fast Ethernet, also called 100BASE-T, operates at 10 or 100Mbps per second over UTP, STP, or fiber-optic media. Firewall is considered the first line of defense in protecting private information.

For better security, data can be encrypted. A system designed to prevent unauthorized access to or from a private network. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially Intranets all messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria. G Gateway Group A gateway links computers that use different data formats together. Groups consist of several user machines that have similar characteristics such as being in the same department. Short for hexadecimal refers to the base-16 number system, which consists of 16 unique symbols: the numbers 0 to 9 and the letters A to F. For example, the decimal number 15 is represented as F in the hexadecimal numbering system. The hexadecimal system is useful because it can represent every byte (8 bits) as two consecutive hexadecimal digits. It is easier for humans to read hexadecimal numbers than binary H HEX - 102 - numbers.

I Intranet This is a private network, inside an organization or company that uses the same software you will find on the public Internet. The only difference is that an Intranet is used for internal usage only. The Internet is a globally linked system of computers that are logically connected based on the Internet Protocol (IP). The Internet provides different ways to access private and public information worldwide. To participate in Internet communications and on Internet Protocol-based networks, a node must have an Internet address that identifies it to the other nodes. All Internet addresses are IP addresses Internet Protocol is the standard that describes the layout of the basic unit of information on the Internet (the packet) and also details the numerical addressing format used to route the information.

Your Internet service provider controls the IP address of any device it connects to the Internet. The IP addresses in your network must conform to IP addressing rules. In smaller LANs, most people will allow the DHCP function of a router or gateway to assign the IP addresses on internal networks. IP address is a 32-binary digit number that identifies each sender or receiver of information that is sent in packets across the Internet. For example 80. 80.80.69 is an IP address. When you "call" that number, using any connection methods, you get connected to the computer that "owns" that IP address. ISP (Internet Service Provider) is a company that maintains a network that is linked to the Internet by way of a dedicated communication line. An ISP offers the use of its dedicated communication lines to companies or individuals who can't afford the high monthly cost for a direct connection. Internet Internet address IP IP address ISP J JAVA Java is a programming language that is specially designed for - 103 - writing programs that can be safely downloaded to your computer through the Internet without the fear of viruses. It is an object-oriented multi-thread programming best for creating applets and applications for the Internet, Intranet and other complex, distributed network. L LAN Local Area Network a computer network that spans a relatively small area sharing common resources. Most LANs are confined to a single building or group of buildings.

M MJPEG MJPEG (Motion JPEG) composes a moving image by storing each frame of a moving picture sequence in JPEG compression, and then decompressing and displaying each frame at rapid speed to show the moving picture. MPEG4 is designed to enable transmission and reception of high-quality audio and video over the Internet and nextgeneration mobile telephones. MPEG4 N NAT Network Address Translator generally applied by a router that makes many different IP addresses on an internal network appear to the Internet as a single address. For routing messages properly within your network, each device requires a unique IP address. But the addresses may not be valid outside your network. NAT solves the problem. When devices within your network request information from the Internet, the requests are forwarded to the Internet under the router's IP address. NAT distributes the responses to the proper IP addresses within your network. A network consists of a collection of two or more devices, people, or components that communicate with each other over physical or virtual media. The most common types of Network - 104 - network are: LAN (local area network): Computers are in close distance to one another.

They are usually in the same office space, room, or building. WAN (wide area network): The computers are in different geographic locations and are connected by telephone lines or radio waves. NWay Protocol A network protocol that can automatically negotiate the highest possible transmission speed between two devices. P PCM PING PCM (Pulse Code Modulation) is a technique for converting analog audio signals into digital form for transmission. Packet Internet Groper, a utility used to determine whether a specific IP address is accessible.

It functions by sending a packet to the specified address and waits for a reply. It is primarily used to troubleshoot Internet connections. Point-to-Point Protocol over Ethernet. PPPoE is a specification for connecting the users on an Ethernet to the Internet through a common broadband medium, such as DSL or cable modem. All the users over the Ethernet share a common connection.

Communication on the network is governed by sets of rules called protocols. Protocols provide the guidelines devices use to communicate with each other, and thus they have different functions. Some protocols are responsible for formatting and presenting and presenting data that will be transferred from file server memory to the file server's net work adapter Others are responsible for filtering information between networks and forwarding data to its destination. Still other protocols dictate how data is transferred across the medium, and how servers respond to workstation requests and vice versa. Common network protocols responsible for the presentation and formatting of data for a network operating system are the Internetwork Packet Exchange (IPX) protocol or the Internet Protocol (IP). Protocols that dictate the format of data for transferors the medium include token-passing and PPPoE Protocol - 105 - Carrier Sense Multiple Access with Collision Detection (CSMA/CD), implemented as token-ring, ARCNET, FDDI, or Ethernet. The Router Information Protocol (RIP),a part of the Transmission Control Protocol/Internet Protocol (TCP/IP) suite, forwards packets from one network to another using the same network protocol. R RJ-45 Router RTP RJ-45 connector is used for Ethernet cable connections. A router is the network software or hardware entity charged with routing packets between networks. RTP (Real-time Transport Protocol) is a data transfer protocol defined to deliver live media to the clients at the same time, which defines the transmission of video and audio files in real time for Internet applications.

RTSP (Real-time Streaming Protocol) is the standard used to transmit stored media to the client(s) at the same time, which provides client controls for random access to the content stream. RTSP S Server SIP It is a simple computer that provides resources, such as files or other information. SIP (Session Initiated Protocol) is a standard protocol that delivers the real-time communication for Voice over IP (VoIP), which establishes sessions for features such as audio and video conferencing. The Simple Mail Transfer Protocol is used for Internet mail. Simple Network Management Protocol. SNMP was designed to provide a common foundation for managing network devices. In LANs, a station consists of a device that can communicate data on the network. In FDDI, a station includes both physical nodes and addressable logical devices. Workstations, singleattach stations, dual-attach stations, and concentrators are SMTP SNMP Station - 106 - FDDI stations.

Subnet mask In TCP/IP, the bits used to create the subnet are called the subnet mask.

T (TCP/IP) Transmission Control Protocol/Internet Protocol is a widely used transport protocol that connects diverse computers of various transmission methods. It was developed y the Department of Defense to connect different computer types and led to the development of the Internet. A transceiver joins two network segments together. Transceivers can also be used to join a segment that uses one medium to a segment that uses a different medium. On a 10BASE-5 network, the transceiver connects the network adapter or other network device to the medium.

Transceivers also can be used on 10BASE-2 or 10BASE-T networks to attach devices with AUI ports. Transceiver U UDP User Name Utility UTP The User Datagram Protocol is a connectionless protocol that resides above IP in the TCP/IP suite The USERNAME is the unique name assigned to each person who has access to the LAN. It is a program that performs a specific task. Unshielded twisted-pair. UTP is a form of cable used by all access methods.

It consists of several pairs of wires enclosed in an unshielded sheath. W WAN Wide-Area Network. A wide-area network consists of groups of interconnected computers that are separated by a wide distance and communicate with each other via common carrier telecommunication techniques. WEP is widely used as the basic security protocol in Wi-Fi networks, which secures data transmissions using 64-bit or WEP - 107 - 128-bit encryption. Windows WPA Windows is a graphical user interface for workstations that use DOS. WPA (Wi-Fi Protected Access) is used to improve the security of Wi-Fi networks, replacing the current WEP standard. It uses its own encryption, Temporal Key Integrity Protocol (TKIP), to secure data during transmission. Wi-Fi Protected Access 2, the latest security specification that provides greater data protection and network access control for Wi-Fi networks. WPA2 uses the government-grade AES encryption algorithm and IEEE 802.1X-based authentication, which are required to secure large corporate networks.

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