

VPOON

Network DVR System

Your best choice for digital video recording and remote surveillance

VP-404R(H)/4048R(H)

Hardware User Manual

(Version:V1.4.3)



Preface

Notice

The information in this manual was current when published. The manufacturer reserves the right to revise and improve its products. All specifications are therefore subject to change without notice.

Note: Formosa21 will not be obligated to the responsibility outside the scope of VPON DVR.

Trademarks

VPON ® is a registered trademark of Formosa 21 Inc.

Microsoft, Windows, Internet Explorer ® are registered trademarks of Microsoft Corporation. Netscape, Navigator, Communicator ® are registered trademarks of Netscape Corporation. Other brand and product names referred to in this manual are trademarks or registered trademarks of their respective holders.

Trademarked names are used throughout this manual. Rather than place a symbol at each occurrence, trademarked names are designated with initial capitalization. Inclusion or exclusion is not a judgment on the validity or legal status of the term.

Warning

To reduce risk of electric shock, do not remove cover. No user service-able parts inside. Refer servicing to qualified service personnel.

Do not expose this appliance to rain or moisture.

Do not install this product in hazardous areas where highly combustible or explosive products are stored or used.

Severe impact or vibration may cause malfunction.

Do not move this product when VPON is working.

Position it in an open space with flat surface, and also maintain at least 15 cm between the left and right sides of the body and the wall.

The lightning flash/arrowhead symbol, within and equilateral triangle, alerts the user to the presence of a shock hazard within the product's enclosure.

CE 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.

FCC Warning

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



GUARANTEE

Every care has been taken in the preparation of this manual; if you detect any inaccuracies or omissions, please inform FORMOSA21, INC. in Taiwan or your local distributor. FORMOSA21 cannot held responsible for any technical or typographical errors and reserves the right to make changes to the products and manuals without your prior notice. FORMOSA21 makes no warranty of any kind with regard to the material contained within this document, including, but not limited, the implied warranties of merchantability and fitness for a particular purpose. FORMOSA21 shall not be liable nor responsible for incidental or consequential damages in connection with the furnishing, performance or use of this material.

Important information

Before proceeding, please read and observe all instructions and warnings contained in this manual. Retain this manual with the original bill of sale for future reference and, if necessary, warranty service.

When unpacking your VPON unit, check for missing or damaged items. If any item is missing, or if damage is evident, **DO NOT INSTALL OR OPERATE THIS PRODUCT.** Contact your dealer or us for assistance.

Contents

1. Overview	
1.1 Introduction-----	1
1.2 Features-----	1
1.3 System requirements-----	2
1.4 Product specifications-----	3
1.5 Front panels -----	3
1.5.1 Back panels -----	4
1.6 About the GUI-----	4
1.6.1 The local GUI-----	4
1.6.2 The network GUI-----	5
2. Getting Started	
2.1 Running modes-----	6
2.2 Install the Hard Disk Inside the DVR System-----	7
Appendix	
Appendix A: Operation via local keyboard -----	I
Appendix B: IrDA mode (IR Remote Control) -----	II
Appendix C: Guide to revise firmware of VPON -----	IV
Appendix D: View video by PDA or Cell phone -----	IV
Appendix E: NET I/O(optional) -----	V
Appendix F: Troubleshooting-----	VI

Chapter 1. Overview

1.1 Introduction

The VP-404R(H) / VP-4048R(H) Network DVR System is a high performance industrial level digital video recorder built-in a mini web server with real-time video capturing capability for remote viewing. Video can also be displayed on a local VGA monitor. The video is grabbed and compressed for faster transmission to your PC through 10/100Mbps Ethernet. Up to 8 video input and one audio input. It can record / playback / back-up / browse video simultaneously and users can choose saving recorded data to removable hard disk or backup to CD-RW.

Up to 8 cameras can be connected to a single VP-404R(H) / VP-4048R(H) unit. Full motion video with audio over Internet or intranet is supported. Video output can be viewed using a standard PC and web browser with custom plug-in software. Camera pan, tilt, zoom, and focus functions can be controlled over the network, and the unit can be configured to react a particular way to when certain events occur. An IR remote control unit is included to make setup and operation as trouble free as possible.

This manual will guide you through the features and functions of the VP-404R(H) / VP-4048R(H) Network Digital Video Recorder (DVR) system. Read this section to get an overview of the product.

1.2 Features

Video & audio live surveillance

- Up to 30fps on each camera for local monitoring
- Two-way audio transmission
- Control well known brand PTZ Cameras.
- Different PTZ devices can work on same serial bus.
- System log and Operation log support.
- Record / display / playback simultaneously.
- Remove live monitoring and playback from PC browser
- High video quality and low data rate.
- Multiple video compression engines: MPEG4, H.263, JPEG, M-JPEG

Recording & Playback

- Water mark to prevent fraud image modification
- Adjustable recording rates and resolution for each camera
- Motion detection / Alarm trigger / Cyclic / Schedule / Pre-alarm and weight recording support
- Brightness and color adjustment during playback
- Thumbnail browsing support
- Searching by time, day, motion or events.
- SCSI/USB/IDE RAID and NAS storage system support

Alarm function

- System audio alarm warns when alarm is triggered
- System automatically displays corresponding enlarged image when alarm is triggered
- Snapshot images through E-mail or FTP server when alarm is triggered.
- Embedded GPI/O for alarm control

Network

- Browser-based, no remote viewing software needed.
- Access prohibition for pre-defined hosts through IP network
- Dynamic IP support for Internet access
- Direct Dial-up available and Low-bandwidth support

Easy to use

- Plug and recording, non-Windows embedded Linux system
- Easy configuration via local keyboard, IR Control, Home Page or Mouse
- Standard web browser as the client application

Customization

- Supports HTML file upload for home page customization
- Supports FTP Server upload for customization
- Support backup configuration file
- Support POS integration

1.3 System requirements**Cameras**

- Composite CCD, V8, or camcorder
- NTSC or PAL standard

Network equipment

- RJ-45 Ethernet port and connection to Internet or intranet (network mode)
- Public or private IP address (Network mode and Internet access)
- VGA monitor for local display

PC for configuration for remote viewing

- Pentium IV 1.7GHz CPU or better
- 256MB RAM or more
- AGP VGA card
- Microsoft Windows XP/2000/ME/98 operating system
- Standard Internet browser such as Internet Explorer

1.4 Product Specifications

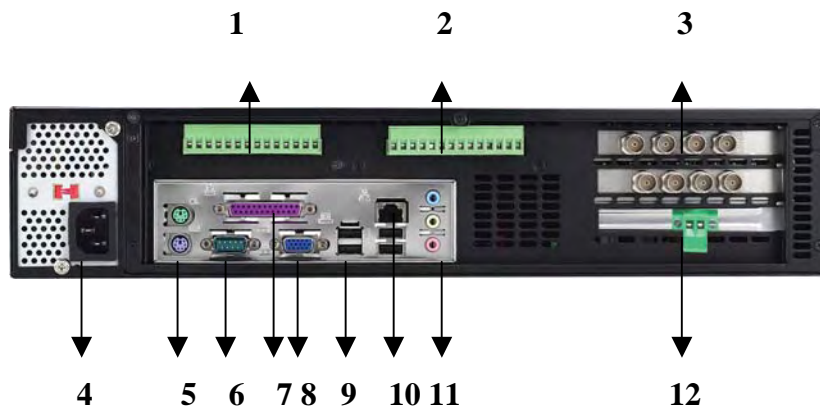
Model	VP-404R / VP-4048R	VP-404RH / VP-4048RH
Video Standard	Support NTSC / PAL Composite video, BNC Connector	
Video Input	4 or 8	
Audio Input	1	
VGA Output	24 bit true color	
HDD Mobile Rack	-	1
IR Remote control	Built-in IR receiver	
CD-RW	1	-
Internal HDD (optional)	2	
Sensor Input Relay Output	4/4 or 8 / 8	
Video Compression	Support MPEG4, H.263, M-JPEG, JPEG standards	
Image Size	320x240 / 640x480	
Maximum Record / Frame Rate	240fps(320x240)	
Maximum Live Display Frame Rate	240fps(NTSC), 200fps (PAL) Max.30fps for each channel	
Browser Compatibility	Win 98 / 2000 / XP running MS IE 6.0 or above	
Communication Protocol	Support TCP/IP, DHCP, NTP, HTTP, FTP	
Power Supply	115V / 230V, 250W	
Size	426 mm x 426mm x 89.5 mm	

1.5 Front panel



1	Reset switch	2	Power switch
3	HDD light and Power light	4	Cooling fans
5	Lock	6	Removable hard disks or CD-RW

1.5.1 Back panel



1	GPIO port	2	GPIO port
3	Video in ports (composite)	4	Power input
5	Keyboard and mouse ports (PS/2)	6	COM port (RS-232)
7	Printer port	8	VGA output
9	USB2.0 ports	10	LAN port
11	Audio input / Speaker output	12	RS485 COM port

1.6 About the GUI

The VP-404R(H) / VP-4048R(H) can be configured and operated using either the local GUI, or over a network.

1.6.1 The local GUI



1.6.2 The network GUI



Chapter 2. Getting Started

Read this section to get your VP-404R(H) / VP-4048R(H) up and running. This section assumes that the VP-404R(H) / VP-4048R(H) is already connected and cameras are attached. For more information, see the user manual supplied with the unit. Live footage can be viewed either on the local screen connected to the VP-404R(H) / VP-4048R(H) or over a network if a connection exists.

2.1 Running modes

Images can be viewed on the screen attached to the VP-404R(H) / VP-4048R(H). You can control the number of images displayed on the screen and configure the VP-404R(H) / VP-4048R(H) using either mouse control, or IR remote controller.

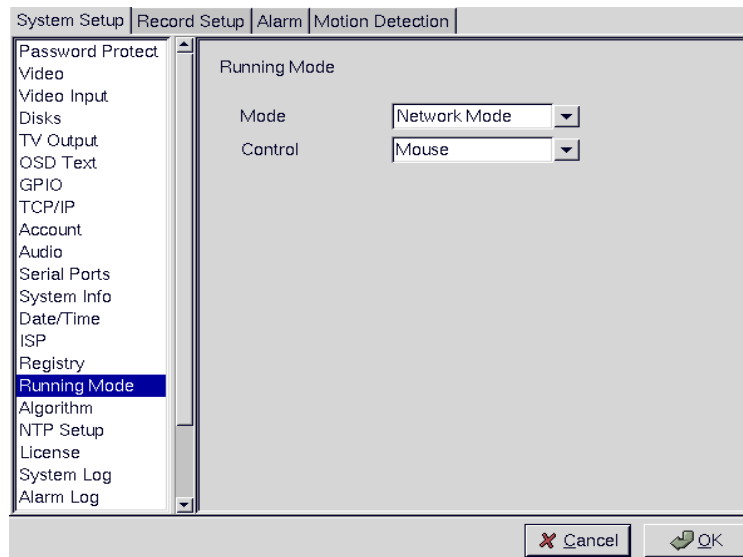
Note: The default startup mode for the VP-404R(H) / VP-4048R(H) is mouse control mode. This can be changed by setting the Running Mode option as described later in this section.

Depending on how the VP-404R(H) / VP-4048R(H) is configured, you will see images from the attached cameras on the screen. If the VP-404R(H) / VP-4048R(H) is in **mouse** running mode, a graphical user interface (GUI) with clickable buttons will be displayed on screen as shown below. In this running mode, the IR remote control will not function. When the VP-404R(H) / VP-4048R(H) is in **IR remote control** running mode, no GUI is displayed, only videos from the connected cameras.



Follow these instructions to switch from mouse running mode to IR remote control running mode.

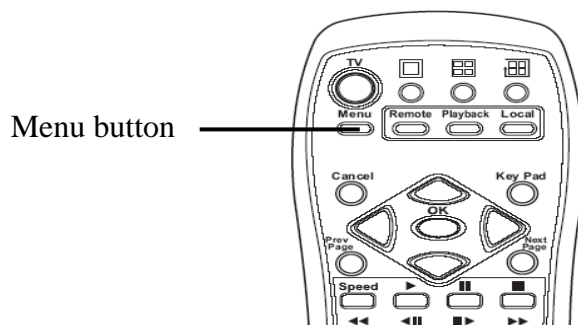
1. Click the **SET UP** button on the GUI to display the setup menu.
2. From the list on the left of the screen, click the **Running Mode** heading to display the running mode menu.



3. From the **Control** dropdown box, choose **IR Control**.
4. **From the Mode** dropdown box, choose either **ISP mode** if you are connected using an ISP type connection, or **Network Mode**, if you are connected to a network.
5. Click **OK**.
6. The system will automatically reboot in IR remote control mode.

Follow these instructions to switch from IR remote control running mode to mouse running mode.

1. Press the **Menu** button on the remote control to display the setup menu on screen.



2. Use the up and down arrow buttons to highlight the **Running Mode** option and press the **OK** button to confirm your choice. The running mode menu will be displayed on screen.



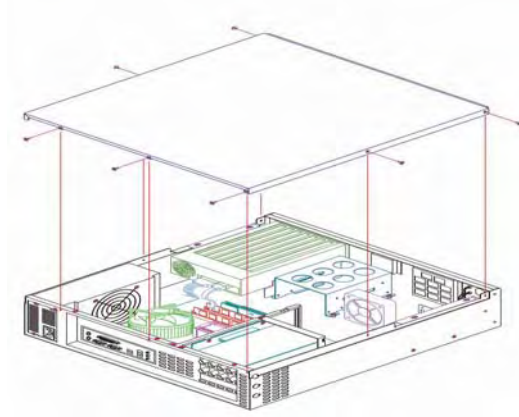
3. Use the up and down arrow buttons to highlight the **Control – IR Control** field.
4. Use the left and right arrow buttons to toggle between **Control – IR** and **Control – mouse**.
5. Press the **OK** button when the control field is set to mouse.
6. The unit will reboot when the **OK** button is pressed. It will restart in mouse running mode.

2.2 Install the Hard Disk Inside the DVR System

Install the hard disk(s). You can install up to 3 SATA hard disks to VP-404R(H) / VP-4048R(H) according to your demands. When you only install ONE hard disk, you can install it either inside the DVR system or in the removable hard disk drawer. Follow the steps to install the hard disk.

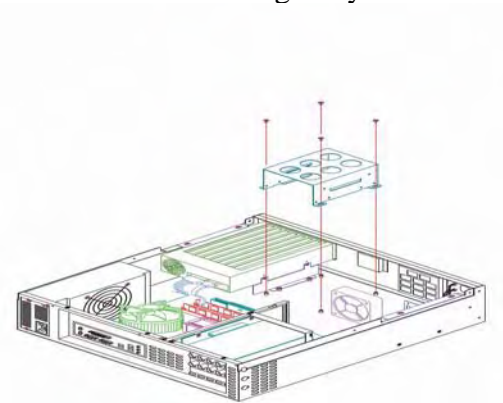
Installation procedure:

Step 1: Loosen the seven M3x6 screws. Then push the cover backward and pull it upward to remove it.



Step 2: Loosen four M3x6 screws on the hard disk rack.

Note: The hard disk rack is tightened on the machine originally.



Step 3: Tighten the four 6#32x6 screws at both sides of the hard disk rack.

Note 1: User can installed up to two hard disks into hard disk rack.

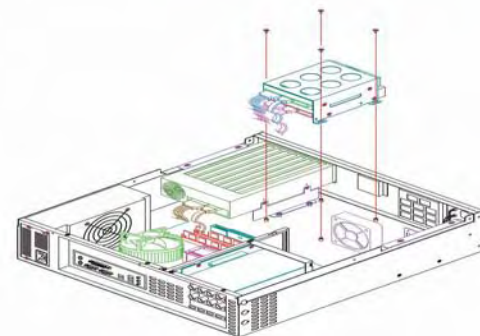
Note 2 : Each hard disk has four screws ◦



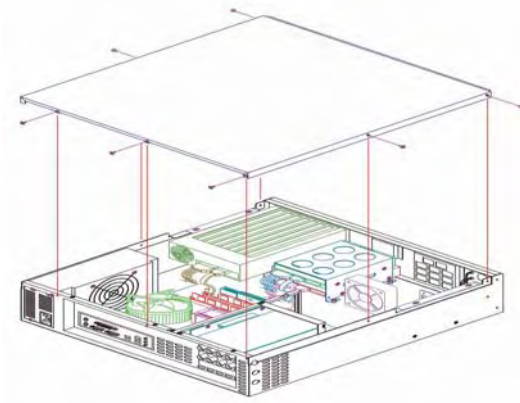
Step 4: Connect the IDE gray cable and power line cable from the motherboard to hard disk.



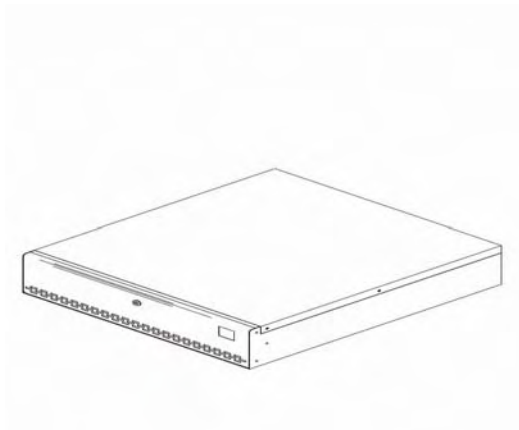
Step 5: Use four M3x6 screws to lock the hard disk rack on the bottom of the machine.



Step 6: After finishing all installation, then close the cover and use seven M3x6 screws to tighten it.

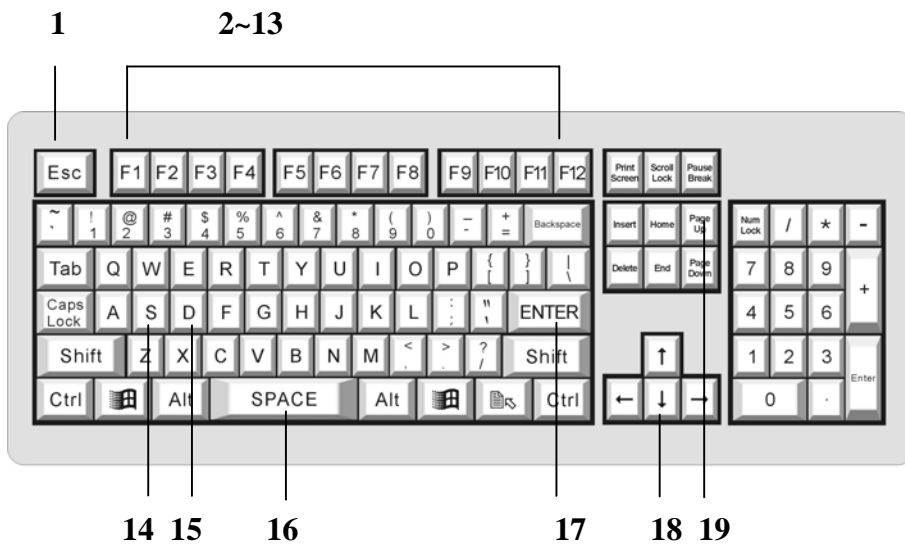


Step 7: Completes the hard disks installation.



Appendix A: Operation via local keyboard

To get VP-404R(H) / VP-4048R(H) up and running via local keyboard, a keyboard is required. The interface of VP-404R(H) / VP-4048R(H) operation is as following figure.



1. Esc: Cancel

Provide cancel and close function. When pressing “Esc”, it will close current setting menu and returns to the previous level.

2. F1: Menu

Provide main menu display function. When users press “F1”, it will display the main menu on the screen, and press “Left/ Right/ Up/ Down” button to select, and then press “Enter” for confirmation.

3. F2: Playback

Press “F2” to enter playback list, and press “Up/ Down” button to select the recorded file, and then press “Enter” or “F5” to play the video.

4. F3: Local (view live image immediately)

When pressing “F3”, users can view the live image immediately.

5. F4: Screen

Press “F4” to switch display setting from **Single, Quad, 8 splits and 16 splits**. Press “Up/ Down” button to select, and then press “Enter” to make sure the selection.

6. F5: ▶ (Play)

When pressing “F5”, the recorded data will start to play. Users also can press “F5” to skip the crash video and play next time period continuously.

7. F6: ■■ (Pause)

When pressing “F6”, users can pause the playing video.

8. F7: ■ (Stop)

When pressing “F7”, users can stop the playing video.

9. F8: Speed (switch playing speed)

When pressing “F8”, users can switch the playing speed.

10. F9: ◀◀ (Seek Backward)

When pressing “F9”, users can backward seek the video.

11. F10: ◀■ (Step Backward)

When pressing “F10”, users can backward the video frame step-by-step.

12. F11: ■ ■ ► (Step Forward)

When pressing “F11”, users can forward the video frame step-by-step.

13. F12: ►► (Forward)

When pressing “F12”, users can forward seek the video.

14. S: Speed (same as “F8”)

The function is the same as “F8”.

15. D: Display

When pressing “D” in playback mode, users can view the status of video, GPI, Motion Detection, progress in bar chart at the bottom of the screen.

16. Space: Step Backward/ Step Forward

When playback the video, users can press space bar to step backward or step forward seek the video.

17. Enter: Play/ Pause/ OK

This button is used to store the setting values in the setting menu. Besides, when playback the video, users can press “Enter” to continue or pause the playing.

18. Up/ Down/ Left/ Right Button

When pressing these buttons, users can control the directions of cameras or adjust the parameters of the setting menu.

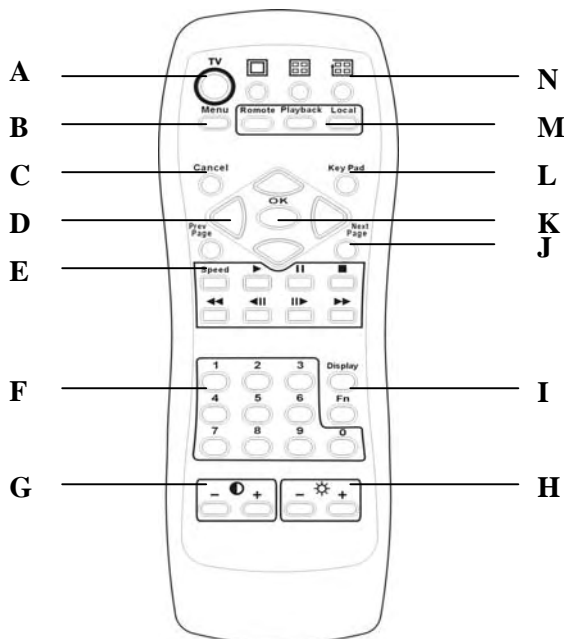
19. Page Up/ Page Down: Previous Page and Next Page

In the setting menu, users can press “Page Up/ Page Down” to change the setting menu page.

Note: About the detail operation of VP-404R(H) / VP-4048R(H), please refer to VPON series support CD with the standard package.

Appendix B: IrDA mode (IR Remote Control)

Users can operate VPON via IR remote control or local keyboard. There will be a OSD screen on the VGA monitor. Before operating VPON via IR remote control, please make sure that VPON has connected to the VGA monitor via VGA Out connector.



- A. TV button**
Exchange video monitoring from VGA to TV. Press the TV button until hear " bee bee "sound after few minutes DVR will auto-reboot to change to TV monitoring. (This function is not supported)
- B. Menu button**
Displays the main menu.
- C. Cancel button**
Closes the menu and returns to the previous screen.
- D. Up/Down/Left/Right button**
Controls direction.
- E. Speed/Play/Pause/Stop/Rewind/Seek Backward/Seek Forward/Fast Forward**
Used only for playing back video recorded by VPON.
- F. Number keys**
Used to input number selections.
- G. Contrast Setting button**
Creates contrast colors on screen.
- H. Color Setting button**
Controls darkness and lightness of video images.
- I. Display button**
Switches display status.
- J. Prev/Next Page button**
Moves from current screen to the next or previous screens.
- K. OK button**
Sets the settings.
- L. Keypad button**
Brings on screen the keypad function.
- M. Mode Switch button**
Remote, **Playback**, and **Local** buttons allow users to switch the display status. **Remote** is not used on the VPON series. **Playback** plays back the recorded files. **Local** allows users to view the live image immediately.
- N. Screen Display**
Change display mode to **single** or **quad**. The **In turns** button is not used for the VPON series.

The IR remote control has four gray triangular buttons surrounding the OK button, resembling a baseball diamond. These are the primary buttons that you will be using the majority of the time.

Gray "baseball diamond" button functions:

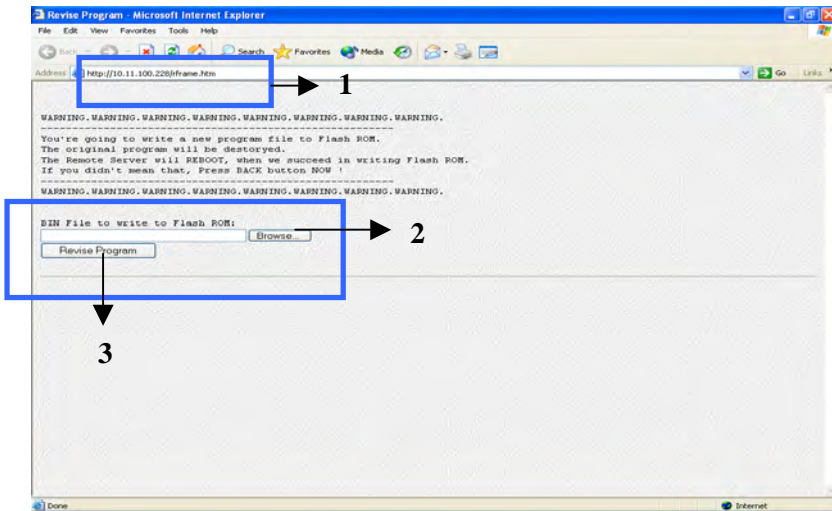
- The **Top** and **bottom** gray triangular buttons highlight the selections.
- The **OK** button is used to save information into the system.
- The **Right** triangular button accesses the highlighted line.
- The **Left** triangular button is usually used to move backwards.

Appendix C: Guide to Revise Firmware of VPON

Step-by-step instructions for revising/upgrading firmware of the VPON

- Use revise.htm

1. If you want to download and update the system firmware, please check with your distributor to verify eligibility.
2. Open Windows Internet Explorer and type in your VPON DVR IP address like this:
“http://VPON IP/revise.htm”

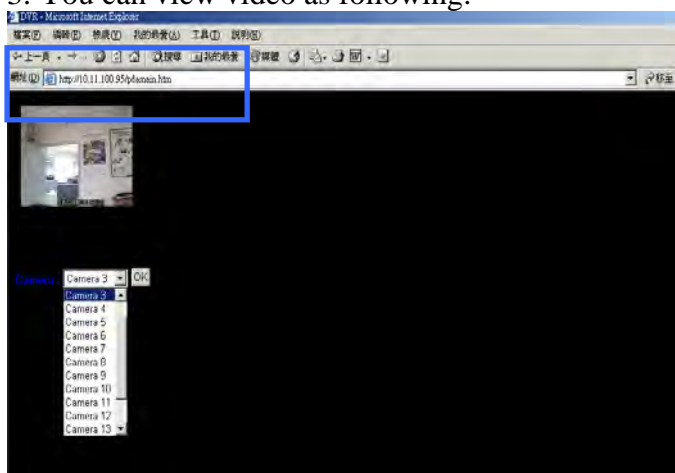


3. Browse for the saved copy of the updated firmware and click revise program then start to the update process.
4. The VPON will reboot automatically after the revision is complete.

Appendix D: View video by PDA or Cell phone

User can get the DVR video by typing the IP address (<http://DVR IP/pdamain.htm>) on the Internet Explore in your cell phone or PDA.

1. Open a browser window on a terminal that has network access to the VP-404R(H) / VP-4048R(H)
2. Type the IP address (<http://DVR IP/pdamain.htm>) of the VP-404R(H) / VP-4048R(H) in the browser address bar.
3. You can view video as following:



Appendix E: NET I/O (optional)

One VPON DVR can offer to connect sixteen cash registers. We provide one devices to connect DVR and cash registers .VP-204 (NET I/O device) for connecting one cash register at the same time. If you hope sixteen cash registers to connect to one DVR, you need sixteen VP-204 devices.

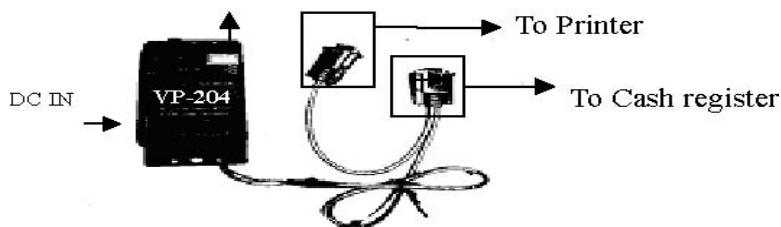
VP-204 installation :

1. Connect corresponded color wire of the cable into VP-204 NET I/O Device
2. Follow the pictures bellow for installation.



3.

Plug in Ethernet cable



4. Connect POS to Ethernet Hub by the Ethernet cable.

Software Set up

- 1 After hardware setting up, power on the VPON DVR.
 - 2 Go to the system menu and select “Serial Port” function to set up interface.
 - 3 VPON detects NET I/O automatically and NET I/O will be displayed.
- Note: If you plug-in many NET I/O devices, you will see VP204-1, VP204-2...in the serial port menu screen then you can set it out separately.
- 4 ID and connection status are displayed
 - 5 VP204-1 Device – Select the Data capture.
 - 6 VP204-1 Speed- Select the same Baud rate as your POS machine.
 - 7 VP204-1 Camera –Select the camera channel that you wish POS transaction data to integrate with. Select “<< Rescan >>”option and select ok button to redetect NET I/O device again to make sure your setting is correct.

VPON will reboot after setting up and exit serial port menu.

Finishing the device setup and back to the live video. You can try to send out some data from POS machine then POS text should appear on the screen.

Note:

- 1)VP-204 - Power consumption: 1.2W(max)
 Power requirement: DC 10-30V
 Interface: 10Mbps
- 2)VPON DVR and NET I/O device should be in the same LAN segment, if you have many VPON DVR. Each VPON DVR must be separated in different LAN segment by router.

Appendix F: Troubleshooting

1. Cannot control PTZ camera

- Check cable connection and camera power.
- COM port parameters are not correct, or the PTZ device is not compatible.
- ID of the PTZ camera is not set correctly.
- Switch both VP-404R(H) / VP-4048R(H) and PTZ camera off and on again.
- VP-404R(H) / VP-4048R(H) does not support this type of PTZ camera.

2. Cannot access VPON from browser in network mode.

- Verify the network cable is well connected to the hub and the network is good.
- Make sure you are using an appropriate IP address for the network.
- Clear the ARP list.
- If you are running MS Proxy Client on your PC, and the IP address assigned to the VP-404R(H) / VP-4048R(H) is not a valid local IP on the network, allocate a valid local IP address to the VP-404R(H) / VP-4048R(H) or disable MS Proxy Client from the Control Panel.
- If you can ping the IP address of the VP-404R(H) / VP-4048R(H), disconnect VPON from network and ping this IP again. If there is a response, then you have a duplicated IP address on the network.
- Clear your browser cache and configure the browser to check for newer versions of the web page on every visit.
- If you still cannot access the VP-404R(H) / VP-4048R(H), disable proxy settings in your browser.

3. You can access the VP-404R(H) / VP-4048R(H) on the intranet, but not on the Internet.

- Verify your intranet is connected to the Internet.
- Verify if a valid public IP is assigned to the VP-404R(H) / VP-4048R(H) or a valid public IP is mapped to a valid local IP assigned to VP-404R(H) / VP-4048R(H).

4. No video.

- Reload the page.
- Clear your browser's cache and configure the browser to check for newer versions of the web page on every visit.

5. You can access video on the intranet, but not across the Internet:

- Check firewall and proxy server settings. The VP-404R(H) / VP-4048R(H) uses standard HTTP protocol and port 80. It might be necessary to enable video MIME types (video/x-nfciwmh263 and video/x-nfciwmhjpeg) for the VP-404R(H) / VP-4048R(H) to be granted access by your firewall or proxy server. Also check if large data transmission is permitted.
- Disable proxy server settings in your browser.

6. Browsers stops responding to mouse clicks

- Too many video strings are open.
- You are opening more than one video string from the same camera.
- Your PC is too slow, upgrade your system.