



Network DVR on Chip

Your best choice for digital video recording and remote surveillance

VP-102

Intelligent PCI-E DVR Kit

Quick Reference Manual

(Version:2.0)

Introduction

Installation

Graphic User Interface (GUI)

Configuration & Operation Via IR

Appendix

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.

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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

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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.

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1. Introduction

A VP-102 package includes one VP-42 PCI-E video capture card and a DVR on chip DOM. VP-42 supports 8 camera and Audio input ports. After install them in a PC, it becomes a dedicated DVR system after power up. The DVR System is a high performance digital video recorder with built-in mini web server and real-time video capturing capability. The video is grabbed and compressed for faster transmission to your PC through 10/100Mbps Ethernet. The video also can display through local VGA output . Besides, VP-102 supports digital recording function. It can record / playback / browse video simultaneously and save video data by cyclic recording to PC hard disk.

VP-102 supports full motion live video and audio through Internet, Intranet connection. When supporting more than 8 camera ports, extra VP-42 cards can be installed on the same PC of VP-102. A DVR on chip DOM can support maximum 2 VP-42 capture cards. This makes the PC supporting up to 16 cameras.

After installing VP-102, the PC is ready as a DVR. When power up, it starts local DVR functions such as monitoring through VGA output and recording to hard disk if it is configured to do that. For remote monitoring or access to historical data, you will have to set up the LAN or Internet environments and configure VP-102 IP information. When all these installation are done successfully, VP-102 delivers real-time full-motion audio/video transmission to anywhere anytime. A PC with Internet browser and our proprietary plug-ins software can do that. The camera can be remotely controlled to do zoom in and out, and the unit can be triggered to initiate certain events. Configuration of VP-102 can be done by an IR remote control unit or a mouse . A sample configuration is shown as below.

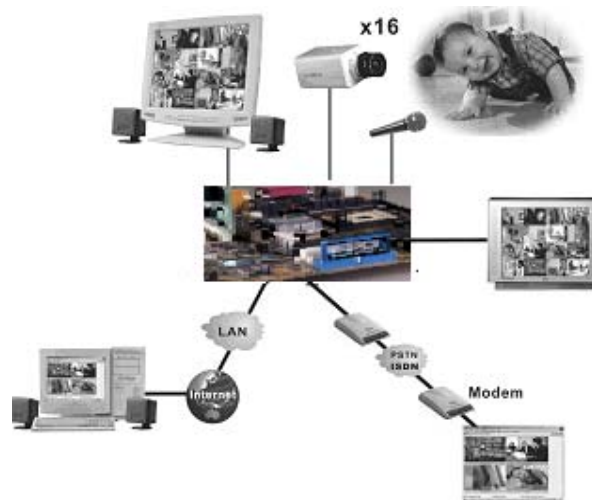


Figure1.1 VPON Network Configuration

1.1 Features:**Video & audio live surveillance**

- Simple and smart operation with IR remote control.
- Up to 30 fps on each camera for local monitoring.
- VPON Network DVR Firmware in a DOM (Disk On Module)
- Adjustable recording quality for each camera.
- Two-way audio transmission.
- 1 / 4 / 6 / 7 / 8 / 9 / 10 / 13 / 16 split-screen display.
- 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.
- Local playback of recorded video on VGA or TV monitor.
- Remote 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 / Weight recording
- Pre-motion or pre-alarm and post-motion or post-alarm recording
- Adjustable recording frame rates when motion or alarm was triggered
- Brightness and color adjustment during playback
- Digital Zoom-in during playback
- Thumbnail browsing support
- Bookmark function support
- Searching by time, day, motion, events or alarm log.
- SCSI/USB/IDE RAID and NAS storage system support

Alarm function

- System audio alarm warns when alarm was triggered
- System automatically displays corresponding enlarged image when alarm was triggered
- Snapshot images through E-mail or FTP server when alarm was triggered.
- Voice call alert notification.
- Optional 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/ATM integration

1.2 Product Specifications:

Model	VP-102
Channels/Card	8
Display FPS/Card	240fps
Rec. FPS/Card (320X240)	200fps
Rec. FPS/Card(640X480)	160fps
Audio In/Card	4
Alarm In/Card	8
Control Out/Card	4
Compression Standard	MPEG4 / JPEG / M-JPEG / H.263
Minimum System Requirement	Pentium IV 2.6GHz CPU or better 512MB DRAM, One IDE slot for DOM Chip PCI-Express VGA card
Browser Compatibility	Win 98/ME/2000/XP running MS Internet Explorer 6.0 or later
Communication Protocol	Support TCP/IP , DHCP , NTP , HTTP , FTP ,UPNP
Backup Function	IDE or USB Interface HDD, CD-RW, DVD+RW
Language	English, Traditional Chinese

2. Getting Started

2.1 Summary of the installing

Before install VP-102 to your PC platform, please make sure the PC's Hardware is compatible with the motherboards, which we have recommended in the appendix.

VP-102 contains :

Description	Quantity
VP-42 Capture Card	1
Video & Audio cable	1
DVR on chip module (DOM)	1
IrDA Controller & receiver	1
Manual CD	1
Quick reference manual	1
Yellow IDE Cable	1
Watch dog Wire	1
Battery	2

2.2 Installation

Step 1 : Installing Motherboard

We recommend motherboards that support Linux device drivers. If you purchased a non-recommended motherboard yourself make sure it works. We are not responsible for non-approved motherboards. We carry recommended motherboards for system integrators to use. Put the motherboard together just like a regular PC.

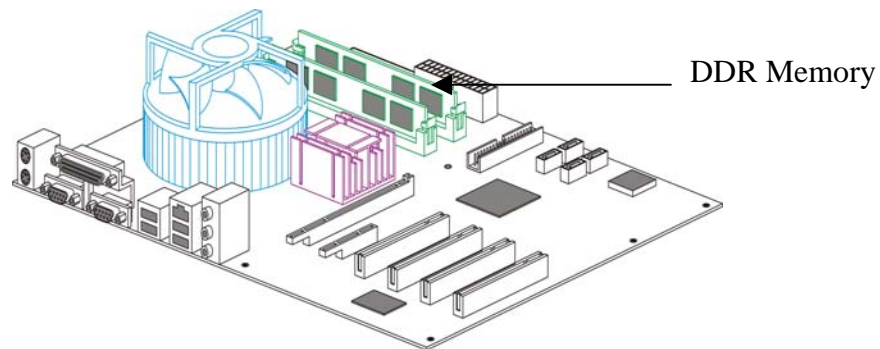
Step 2: Installing CPU

We recommend any Pentium 4 Class CPU. Install as usual and attach the heat sink and fan.

Step 3: Installing Memory

We recommend installing a good brand name 256MB DDR memory.

NOTE: If you choose MPEG4 compression standard, please install 512MB DDR memory.

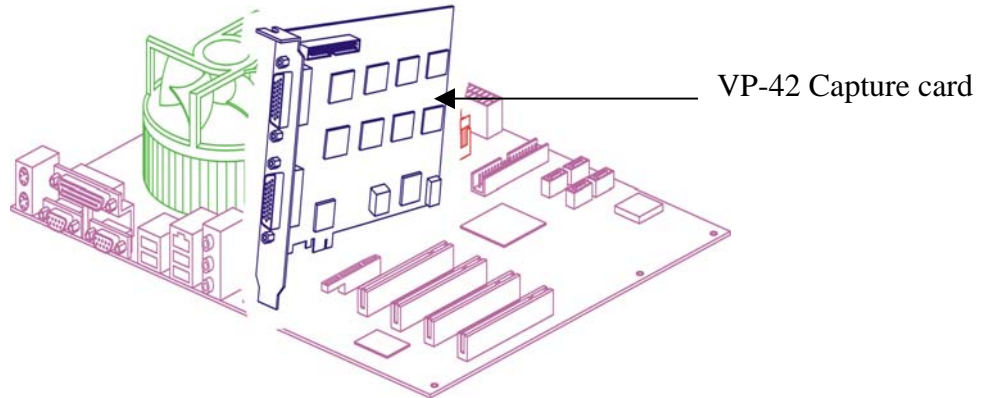


Step 4 : Installing VGA Card

We recommend VGA cards as in supporting list (Please check appendix) .We carry VGA cards for system integrators. Insert the VGA card into the PCI-Express slot. Not all VGA cards will work due to unsupported Linux device drivers.

Step 5: Installing VP-42 Capture Card

Our capture card is proprietary and will only work with our DVR chip. Install the capture card into an available PCI-E slot. Once the system boots the VPON firmware will automatically detect how many capture cards are in the PCI-E slots.

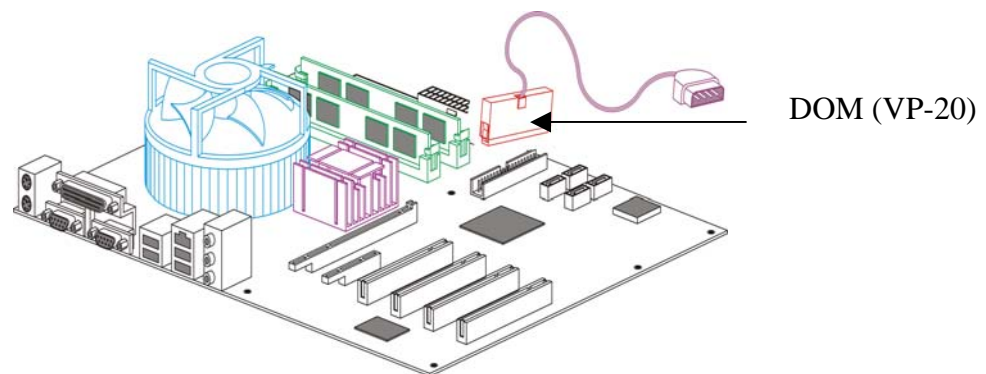
**Step 6: Installing the hard drives**

For a single drive make sure the jumper settings is set on primary. Attach that with any ordinary IDE cable onto the secondary IDE channel. For dual drives make sure one hard drive is set on primary and the secondary on slave. Attach those to the IDE cable and plug into the secondary IDE channel. The max hard drive size supported is 500GB each. For a total of 1TB.

Note: When VP-102 based DVR is working for the first time, the system will erase the data in the hard disk. If there is important information in the hard disk, please remember to backup the data in another storage before the hard disk is used in the VP-102 based DVR.

Step 7: Installing the VP-102 DVR module

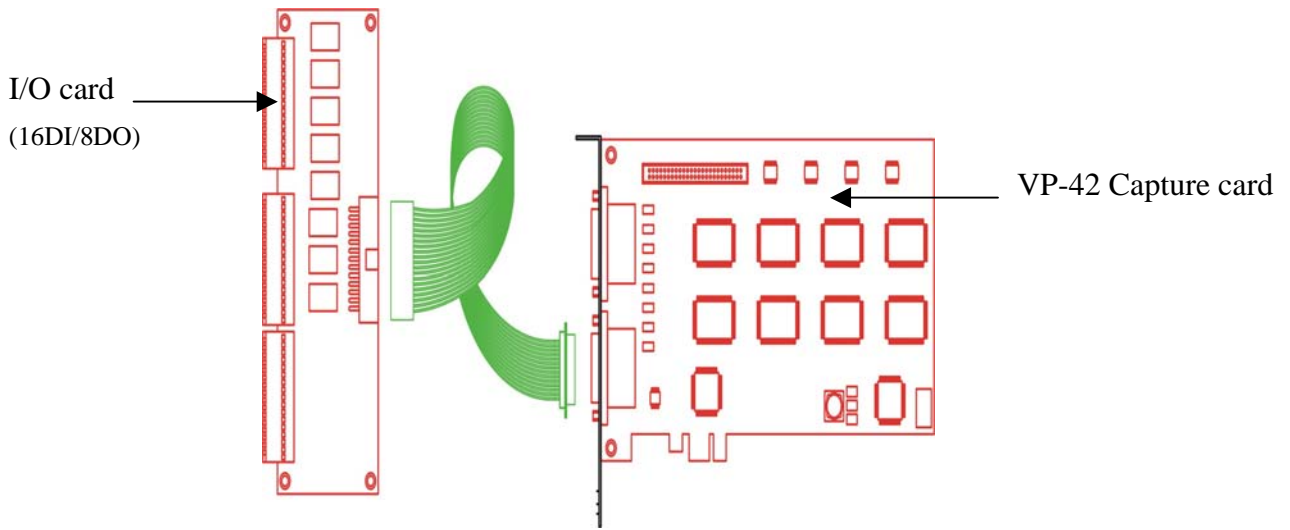
The VP-102 DVR module sits on the primary IDE slot on the motherboard. If attaching a CD-RW to your unit then put the VP-102 DVR module in the middle of the yellow IDE cable included. And then put the end of the yellow IDE cable to the CD-RW and the other end to the primary IDE channel. The yellow IDE cable must be used with the VP-102 DVR module and not any generic IDE cable. Then attach the power connector from the VP-102 DVR module to a free lead from the power supply.



Step 8 : Installing I/O Card (Optional)

GPI and GPO are use for alarm inputs and outputs control.

Note: I/O card is an optional device; if you need it please contact us.



Power Supply

We recommend using a 400W ATX power supply for the DVR unit.

2.3 Power On

After complete the installation , you can power on the PC as usual. Live videos should be displayed on VGA screen if everything is OK.

2.4 Configuration

When you get videos display on VGA screen, you can configure the VP-102 PC DVR unit using mouse or the IrDA controller comes with the VP-102 package. Please refer to **User manual “Chapter 3 operating VPON by mouse , Chapter 4 Operating VPON by IrDA controller.**

Change from GUI mode to IR mode

Default operation mode is GUI mode. VPON provides a GUI mode with mouse support. Be sure to plug in a PS2 mouse at the back of the unit before or when it starts to boot. Go to the running mode in the system settings. Change it from mouse mode to IR mode. The unit will reboot. Mouse mode is the only mode where a log can be found.

2.5 Connecting to the network

Connect an Ethernet-capable computer to the VPON LAN port using an RJ-45 crossed UTP cable or connect both of the PC and VPON to a same hub :

1. The default IP address for the VPON is 192.168.10.10. Set your PC IP address to 192.168.10.xxx (where xxx is a value between 0 ~ 254). Set the subnet mask to 255.255.255.0.
2. Reboot the PC.
3. Use IE Web browser version 6.0 SP2 up to access <http://192.168.10.10>. The login dialog box will

appear. If you have previously changed the administration login or password, enter the login name and password you previously set. Otherwise, enter the default login name “webmonitor” and the password “oyo” then click OK.

4. For first time accessing VPON , you will be prompted to install Live Video ActiveX. Download and run the file to install ActiveX. Then restart IE browser, you will be able to see the videos. If you choose not to install Active X, you can view videos from the VPON by clicking on the View Video without Plugins link at the bottom of the page. At the prompt, enter the same administrator login name and password as before. This uses a Java applet to display the video.

2.5.1 Remote access using dial-up

You can access the VPON remotely without the Internet by using a dialup modem. The VPON must be working under Network mode.

1. Connect a dial-up modem and phone line to the VPON COM1 port.
2. Set COM1 to modem device in the VPON system menu.
3. On the remote PC, create a new dial-up setting (Windows).
4. Set the protocol to PPP.
5. Clear all advanced options and allowed network protocols except TCP/IP.
6. Set the IP address to 10.0.0.2.
7. Put a check mark in the server assigned server address box, uncheck “use IP header compression” and “use default gateway” on the network boxes. Then click OK.
8. Enter the number of the phone line connected to the VPON, as well as the administrator user name and password.
9. To access the VPON, use IE 6.0 SP2 up. Bring up IE on the PC and then access to 10.0.0.1.

Note: As this is a PPP connection, only one user can access the VPON at a time.

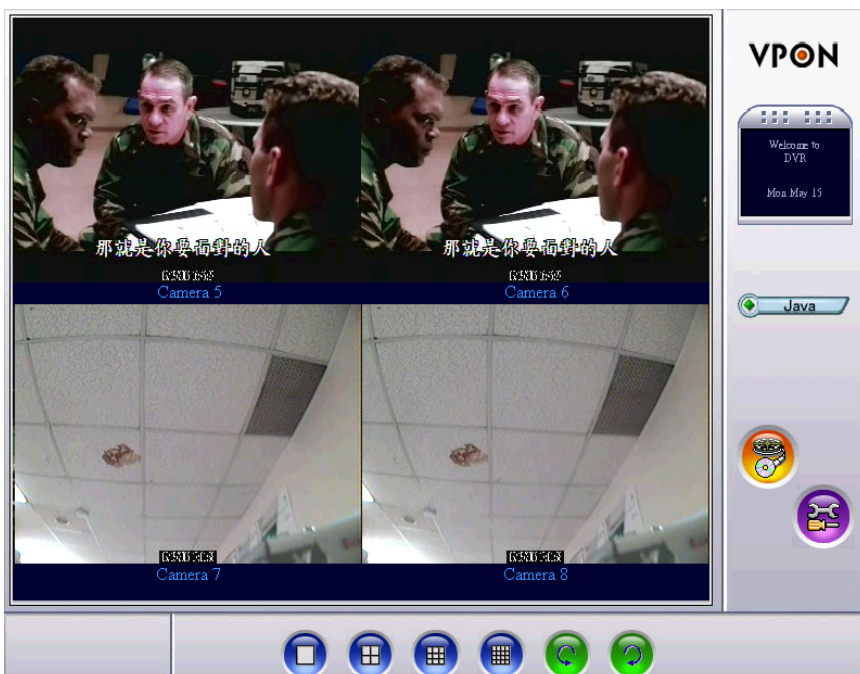
3. About the GUI Introduction

The VP-102 can be configured and operated using either the local GUI, or over a network.

3.1 The local GUI



3.2 The network GUI

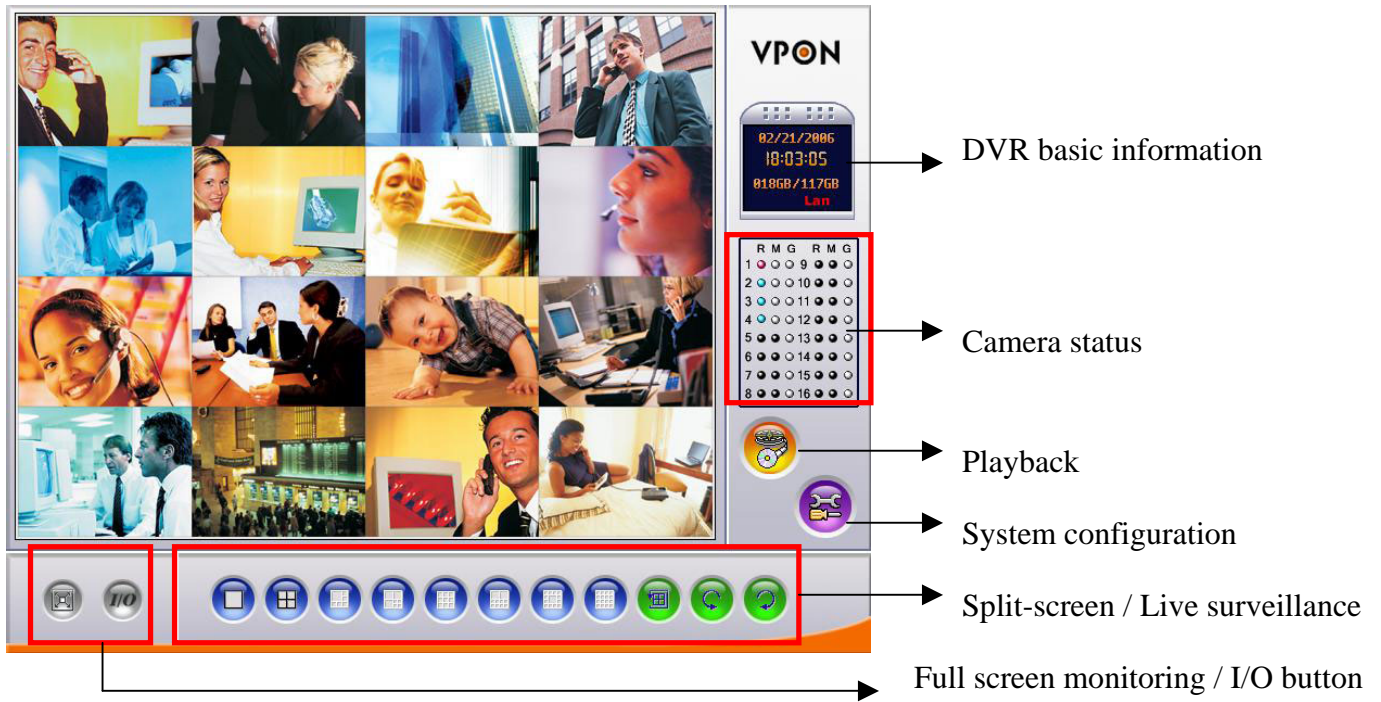


4. Graphic User Interface (GUI)

4.1 Introduction

VP-102 can be configured using either the supplied remote control unit (or a keyboard) or a mouse. This chapter covers mouse operation. The VP-102 must be in GUI mode for mouse operation. Under GUI mode, keyboard is used ONLY for data entry.

Local surveillance GUI:



DVR basic information: including date, time, total hard disk size and LAN status.

Camera status:

R

Color	Recording Mode
Gray	No video signal
Blue	No recording
Red	Full recording

M

Color	Motion detection Status
Gray	Motion not detected
Yellow	Motion detected

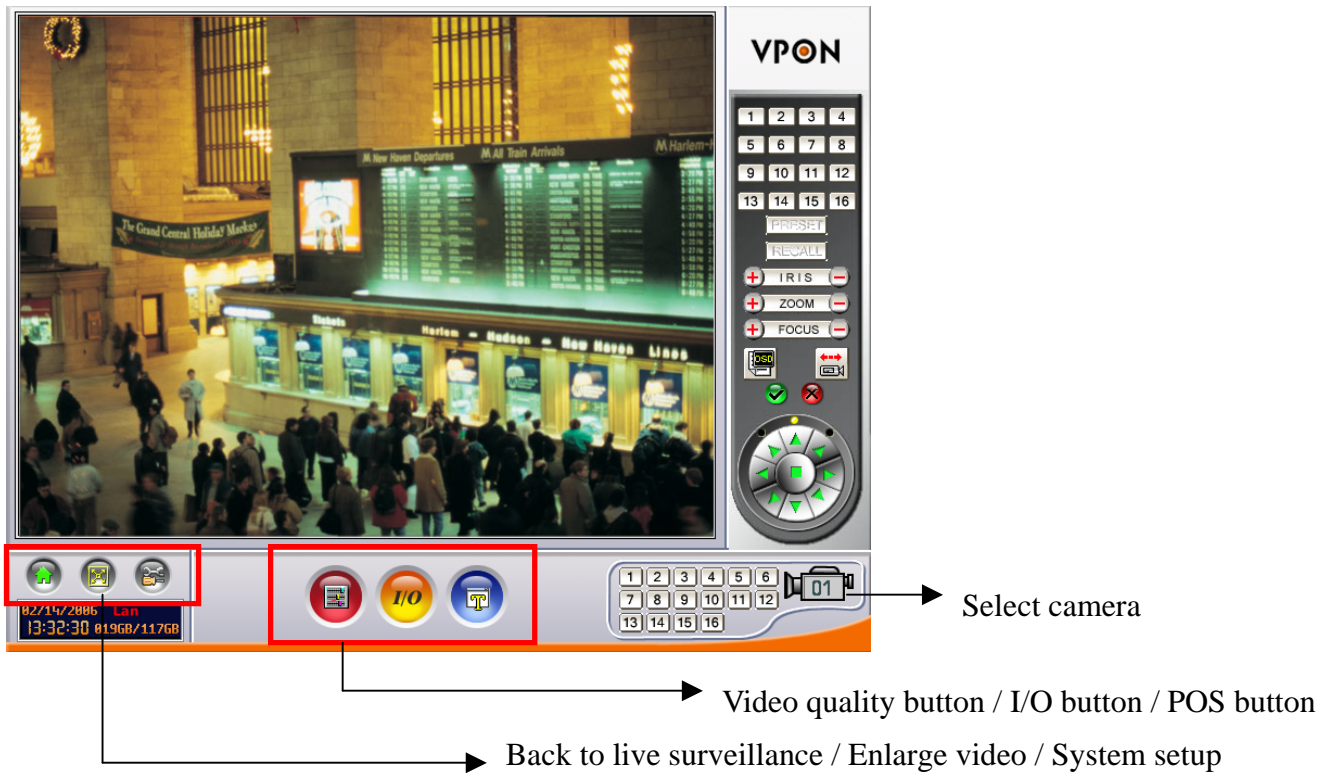
G

Color	Status of each DI and DO device.
Gray	DI or DO not detected
Red	DI or DO was detected

4.2 Setup Video Quality

Use the video quality button to set all the video parameters for the cameras connected to the VP-102.

1. First, please change to single screen as following .



4.3 PTZ Control

PTZ panel

After setting PTZ in the camera setup section , user can use the PTZ panel to control PTZ (Pan, Tilt, Zoom) cameras. This panel is displayed when change to single screen.




PTZ panel: You can do preset and recall, zoom in/out, focus, iris control to current camera.




Preset buttons- Save current camera position. You can save totally 16 preset positions


Recall buttons- Move the camera to the selected preset position.

+ ZOOM - **ZOOM buttons** - adjust the zoom to provide a more closer or wider view of the subject.

+ FOCUS - **FOCUS buttons** - adjust the focus of the camera.

 **Speed buttons** - Adjust the moving speed of the selected PTZ camera.

 **PTZ OSD menu / patrol / auto pan** – Using OSD menu to control PTZ .The “” button is ok, “” button is cancel.

 **Pan and tilt buttons** - Adjust the pan and tilt of the selected camera include 45 degree directional PTZ control at upper right, upper left, button right, button left of PTZ control panel

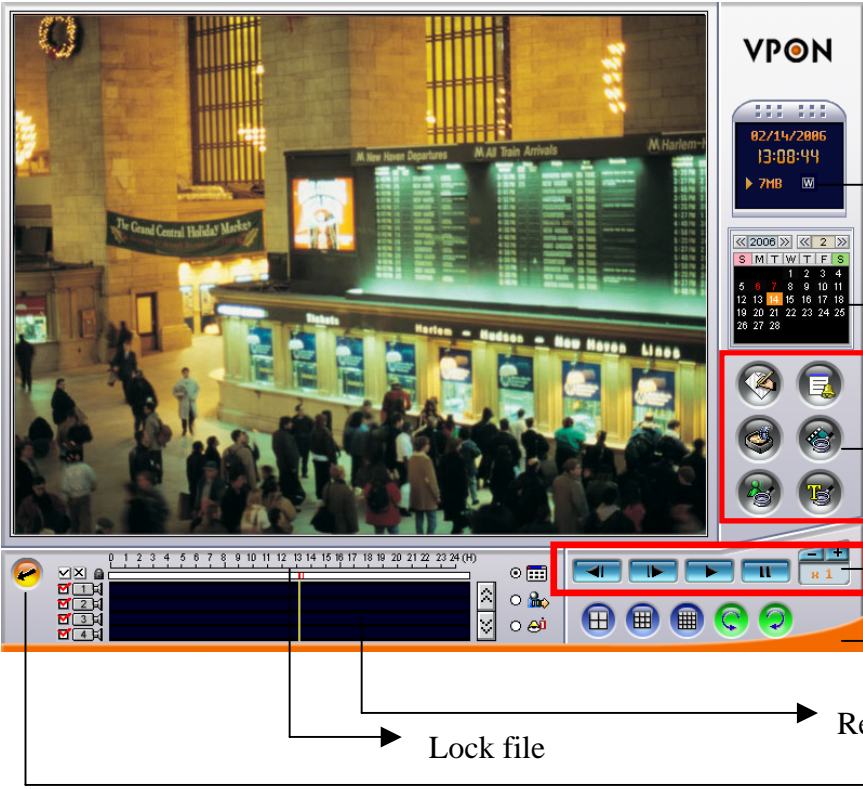
To set a camera configuration:

1. Select a camera using the numbered buttons (1~16) on the Surveillance Panel.
2. Adjust the Zoom, Focus, Speed, Pan and Tilt buttons until the camera is configured correctly.
3. Press a Set button to save the configuration.

The configuration you have saved can now be recalled with the corresponding Call button.







4.4 PLAY button 

Click the PLAY button for playback the recorded files in the hard disk.



The screenshot shows the VPON playback interface. On the left is a video window showing a train station. On the right is a control panel with a digital display showing '02/14/2006 13:08:44' and '7MB'. Below the display is a calendar for 2006. A red box highlights a set of six function buttons: Bookmark, Alarm log, Backing up the data, Thumbnail Browse, Search by Event, and Search by Text. Another red box highlights a set of playback controls: Play, Stop, Previous, Next, and a button labeled 'H 1'. Below the playback controls are split-screen buttons. Arrows point from text labels to these elements: 'Watermark' points to the display; 'Calendar' points to the calendar; 'Function buttons' points to the red-bordered function button set; 'Play buttons' points to the red-bordered playback control set; 'Split-screen buttons' points to the buttons below the playback controls; 'Recording data status information' points to a status bar at the bottom; 'Lock file' points to a button on the left; and 'Back to live surveillance' points to a button at the bottom right.

Function buttons:

- | | | |
|---|--|--|
| 1.  Bookmark | 2.  Alarm log | 3.  Backing up the data |
| 4.  Thumbnail Browse | 5.  Search by Event | 6.  Search by Text |

Note: Please refer CD user manual Chapter 3 GUI for more detail information.

5. IR Remote Control Operation

5.1 How to playback recorded Video/Audio

1. Press **Menu** key on remote controller and then use Up/Down move to playback and press “OK” to bring up playback list as below: Access any of these files by pressing the **right arrow** button.

Playback list (13/22)			
2004-07-15	16:00		0M
2004-07-15	15:00		0M
2004-07-15	14:00		0M
2004-07-15	13:00		0M
2004-07-15	12:00		0M
2004-07-15	11:00		0M
2004-07-15	11:00		0M
2004-07-15	10:00	M	80M
2004-07-14	19:00	M	578M
2004-07-14	18:00	M	754M

Prev Next

2. The alarm condition, which caused the file to be recorded, is indicated in the list. For instance, in the screen shot shown here, the letter M next to a file indicates that the file was recorded after motion was detected by the camera. “A” indicates that the file was recorded after a GPIO event. An asterisk (*) before the date indicates that the file is locked.
3. To view video from a specific time, press **menu** (when you are already on the **Playback list** screen) to search for video by time or event.
4. Press the Display button on the remote control to display various properties of the recorded file. The date and time of recording are displayed in the upper right corner.

Progress - A one-hour time line is displayed at the bottom of the screen with the moving orange line indicating the status of playback.



Recorded Data - The aqua colored line represents how much of the one hour time interval was recorded. A full blue line means that the whole hour interval was recorded.



GPI - The screen shows where alarm triggers were generated. The red bar shows the triggers. To move to the next motion detection or alarm trigger event, press the Right/Left arrow buttons.



Motion Detection - The yellow bars represent where motion detection was set off.



5.2 How to Back up recorded files

5.2.1 How to Burn a CD/DVD

If the system is equipped with a CD/RW or DVD+RW, or using a USB hard disk, then you can access the CD/DVD burner functions through the **playback** menu.

1. Press the **Menu button**, highlight **Playback**, and press the **right arrow button** to access the recorded files.
2. Once you have accessed the **Playback list**, press **menu** again.
3. Highlight **Back-up** and press the **right arrow button**.

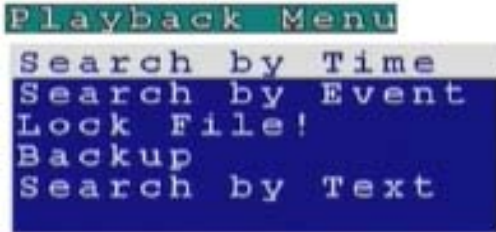
4. Input the time segment you want to copy to CD and press **OK**.

5.3 Searching for a file

The VP- 100 playback list can be searched for a specific file. You can conduct the search based on time, event, or text.

To search for a recorded file:

1. While viewing the play list, press the Menu button to display the menu.



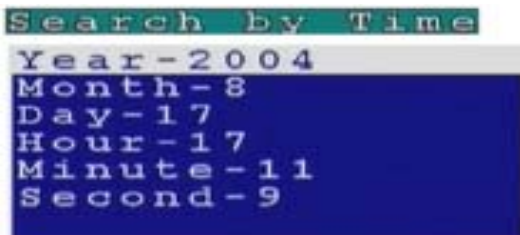
2. Select one of the following options using the Up or Down arrow buttons:

Search by Time - searches the list of recorded files for the specified recording timeline.

Search by Event - Searches the list of recorded files for the specified event such as a motion or a GPIO trigger that occurred within the specified time interval.

Search by Text - searches the list of files recorded with POS information for specified text that was recorded within the specified time interval.

3. Press the Right arrow button to view the submenu for the selected option.



4. Select each of the options such as Year, Month, Day, and so on using the Up or Down arrows.
5. Modify the settings as required using the Left and Right arrow buttons.

Note: If you select the Search by Event option, choose an event from GPI 1~16 and Motion 1~16. If you choose the Select by Text option, enter the text using the Key Pad button.

6. Press OK when done to conduct the search.

5.4 Locking files

To prevent accidental deletion of recorded files, you can lock a file. This also prevents over-writing of the file when the recording mode is set to Cyclic.

To lock a file:

1. While viewing the play list , use the Up/Down arrow buttons to select the desired file.
2. Press the Menu button to display the menu.
3. Select the Lock File! Option using the Up or Down arrow buttons:
4. Press the OK button to confirm.

The file is locked and cannot be deleted or over-written. The locked file is represented by an asterisk (*) next to it. To unlock a file, follow the same procedure and select the Unlock File! option from the menu.

Note: Please refer CD user manual Chapter 4 OSD for more detail operation information.

Appendix A: Recommendation Motherboard

We have tested some different motherboards for VP-102. If You are first time to plug and play VP-102. We suggest you to choose the motherboard which have been tested by us for better performers ◦

◆ **Suggesting CPU model :**

Pentium 4, 1.6G or better

◆ **Motherboard :**

1. North bridge : Intel chipset
2. South bridge : ICH2, ICH4, ICH5 & ICH5R
3. Others : We need 5 PCI slots at the least for expand

◆ **Memory :**

DDR 256MB or above

DDR512MB for MPEG4 compression standard

◆ **PCI-Express VGA Cards :**

nVidia Geforce NX62/00/NX6600 (mouse mode only)

ATI X300SE (VGA Monitor only)

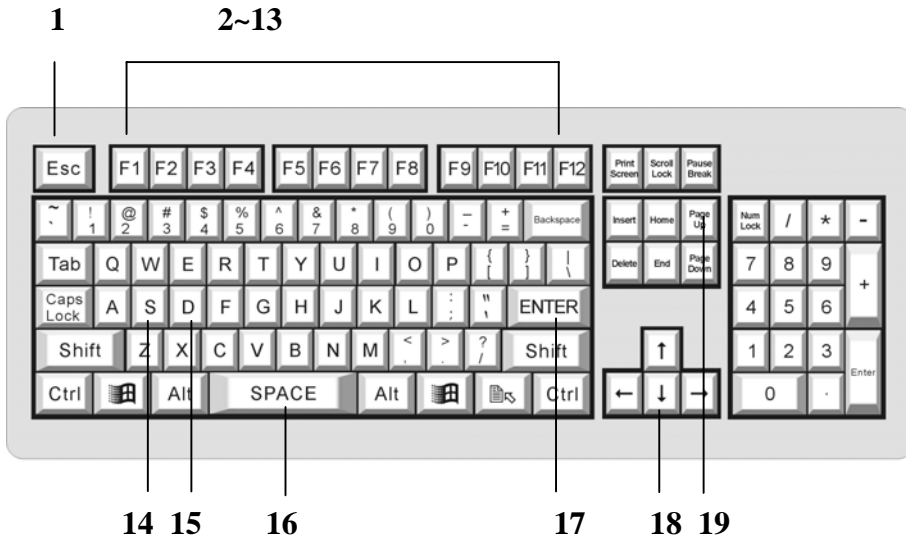
◆ **Motherboard :**

Socket 775 Motherboards* (M/B)

Motherboard Brand & Model #	Chipset
VPON VP-MB945G	Intel 945G
GIGABYTE GA-8I945P-G	Intel 945P
GIGABYTE GA-8I915P DUO	Intel 915P

Appendix B: Operation via local keyboard

To get VP-102 up and running via local keyboard, a keyboard is required. The interface of VP-102 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.

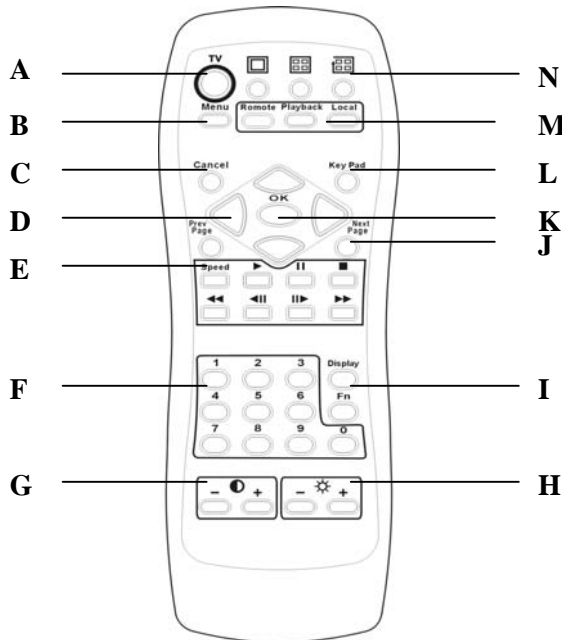
19. Page Up/ Page Down: Previous Page and Next Page

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

Note: About the detail operation of VP-102, please refer to VPON series support CD with the standard package.

Appendix C: 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 VP-102 will auto-reboot to change to TV monitoring.
- 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 D: Watch-dog Wiring Description

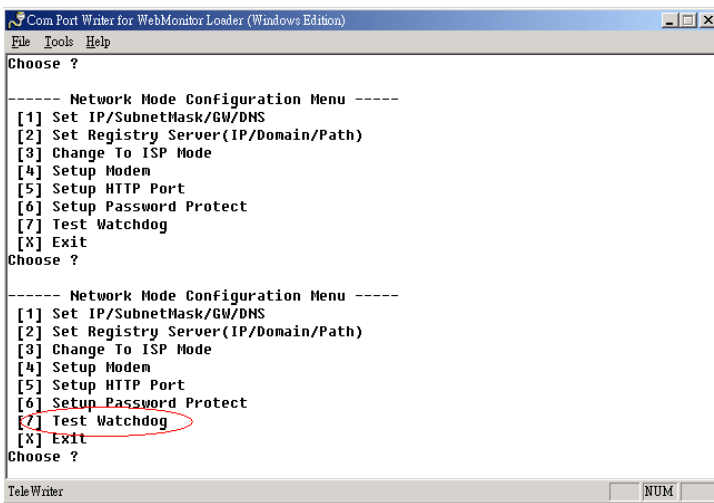
Watch dog is a hardware device to monitor the system status. If the system fails to response, Watch dog will send a rest signal to the motherboard to reboot the system. To enable Watch dog function, please select available durations 10,9,8.....seconds.

Hardware Request list:

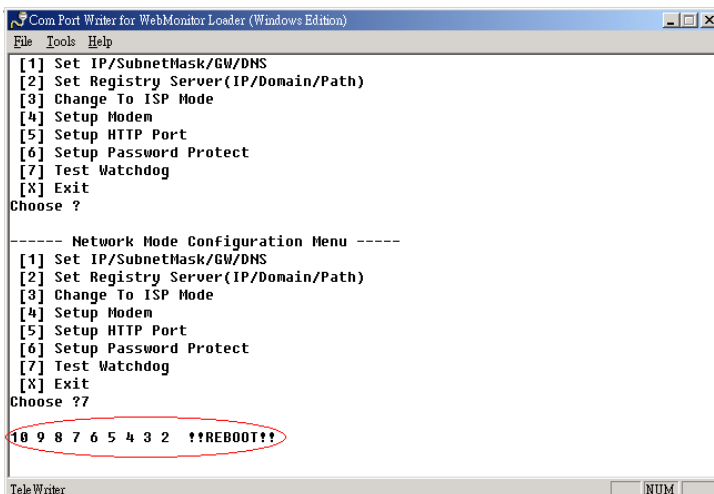
1. One pair of conducting wire (2-pin to 2-pin). (Cable A)

Installation Step:

1. Attach the pair of conducting wire (cable A) from video capture card JP1 PIN1,2 to the RESET JUMPER on Motherboard.
2. Use a RS232 null modem cable to build up the connection between COM1 port of PC and VPON.
3. Run WCOMW.EXE and it will show up the “Network Mode Configuration Menu”. As bellow :



3. Select the item 7 on “Network Mode Configuration Menu” then press “Enter”, it will do watchdog functional test in VPON and display message "10 9 8 7 6 5 4 3 2 !!Reboot!!" on the screen.



4. Exit Configuration Menu to stop WCOMW.EXE, When DVR reboot to ready, the test is completed.