4-CH STANDALONE DVR

PDR-400/400IP

PRECAUTIONS

⊗ **Do not drop or strike this equipment.**
  It will cause damage to the equipment.
⊗ **Do not install the equipment near any naked flames or heat sources.**
  The presents of flammable gas or object in the operating environment or exposing this unit to direct sunlight may cause fire and severe injury.
⊗ **Do not expose this unit to rain , moisture , smoke or dust environment.**
  May cause short circuit, fire and serious damage to this unit.
  Unplug this unit and have it checked by qualified service personnel.
⊗ **Do not cover the opening of the cabinet with cloth and plastic or to install this unit in poor ventilated places. Allow 10cm between this unit and its surroundings.**
  May cause overheat. The normal operating temperature is $0^{\circ}C \sim 40^{\circ}C$.
⊗ **Do not continue to operate the unit under abnormal conditions such as detection of smoke, strange smell or no display on screen while power is turned on.**
  Contact qualified service personnel for help.
⊗ **Do not touch the power connection with wet hands.**
  May cause short circuit or electric shock.
⊗ **Do not damage the power cord or leave it under pressure.**
  May cause fire or shock hazard.
⊗ **Do not operate this unit near magnet, speaker system, etc., to avoid unnecessary magnetic interference.**
  These interference will cause color confusion and screen fluctuation.
⊗ **Do not drop metallic parts through slots.**
  This could permanently damage the appliance.
⊗ **Connection cables should be grounded properly.**
  Sudden surge such as lightening will damage the system permanently.

CONTENTS

PREFACE

Before Installation

Thank you for purchasing PDR-400/400IP Stand Alone Digital Video Recorder. We recommend that you read this installation and operation manual throughly before operating your new system.

Precautions
1. Avoid installing the equipment in an unstable area. Make sure the area is firm and stable.
2. Do not install the equipment near any naked flames or heat sources.
3. Do not install the equipment in high temperature or low temperature environment to avoid damage.
4. Do not install the equipment in poor ventilated places.
5. Connection cables should be grounded properly.

Specifications

Digital Video Recorder			
Model		PDR-400	
System		NTSC	PAL
Display Speed		Total 120 fps	Total 100 fps
Display Resolution		720 x 480	720 x 576
Record Speed	Quad	Maximum 30 fps	Maximum 25 fps
	Each	Maximum 30 fps÷No. of Recoding Channel	Maximum 25 fps÷No. of Recoding Channel
Record Resolution	Quad	320 x 112	320 x 136
	Each	640 x 224	640 x 272
Video Input		4 BNC (1.0Vp-p Composite 75Ω)	
Video Output		2 BNC (1.0Vp-p Composite 75Ω)	
Input Voltage		100 ~ 240Vac 50/60Hz	
Power Consumption		24W	25W
Screen Division		1 , 4	
Record Mode		Continuous / Manual / Alarm / Schedule / Weighted / Motion Detection	
Compression Format		Modified MJPEG, 4 Compression Ratios：High / Normal / Medium / Low	
Data Search		Data Can Be Searched By Date , Time and Alarm Log	
Play Back Operation		Play / Stop / Fast Forward / Backward / Pause / Step	
Data Display		Camera Numbers, Date & Time, Recording Status Display	
Storage		Expandable up to 2 HDD (Support single HDD over 200 GB) "Auto overwritten" / "stop" selectable when HDD is full Format is not required when replacing HDD	
Alarm Input		4 Alarm Inputs (NO/NC)	
Alarm Output		1 Alarm Output (NO)	
System Function		On Screen Display Setup Menu	
Operation Temperature		-10℃ ~ +60℃	
Operation Humidity		0% ~ 80%	
Dimensions (mm)		310 (L) x 434 (W) x 44 (H)	
Weight		4 Kg (HDD not included)	

ILLUSTRATION
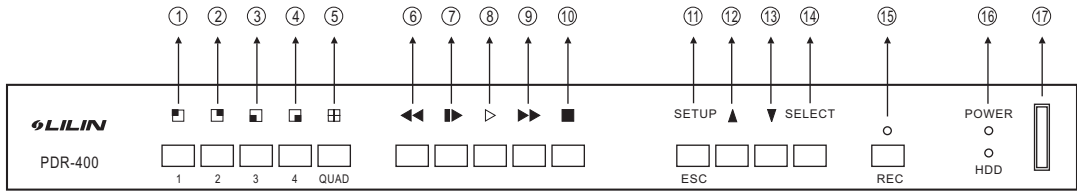
● Camera Display Keys / Numeric Keys
  ① ▣ Display First Camera or Number 1 Key.
  ② ▣ Display Second Camera or Number 2 Key.
  ③ ▣ Display Third Camera or Number 3 Key.
  ④ ▣ Display Fourth Camera or Number 4 Key.
  ⑤ ⊞ Quad Display or Number 5 Key.

● Play Back Operation Keys
  ⑥ Fast Rewind 3x or Number 6 Key.
  ⑦ Pause / Frame by Frame or Number 7 Key.
  ⑧ Play or Number 8 Key.
  ⑨ Fast Forward 1x, 2x, 3x, 4x or Number 9 Key.
  ⑩ Stop.

● Function Setup Keys
  ⑪ OSD Setup MENU Enter or Escape Key.
  ⑫ Setting Item Select Key.
  ⑬ Setting Item Select Key or
     Resume Sequential Display.
  ⑭ Setting Confirm Key.

● Record Key
  ⑮ Recording Key.

● Indication Light
  ⑯ POWER : Power Indication LED.
     HDD : Hard Disk Indication LED.
         (Flash when recording)

● Socket
  ⑰ SD Card (Optional)
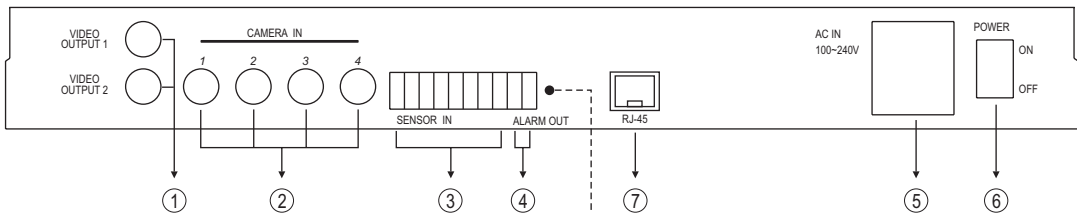
① Video Output BNC Connectors.
② Video Input BNC Connectors.
③ Alarm Input Connector. (NO/NC)
④ Alarm Output Connector. (N.O. Type)
⑤ Power In Jack. (AC100~240Vac)
⑥ Power Switch.
⑦ RJ-45 Connector. (Optional)
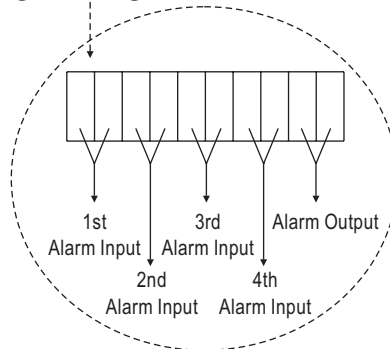
SYSTEM INSTALLATION/SETUP

NTSC / PAL Systems Selection

The System can be set up as NTSC or PAL system. System will be set as customer's request before delivery. If necessary, user can switch the system as following steps:

1. Turn off the Power.
2. Remove the top cover.
3. Adjust the jumper as shown on Figure 1.
4. When finished, place top cover back.
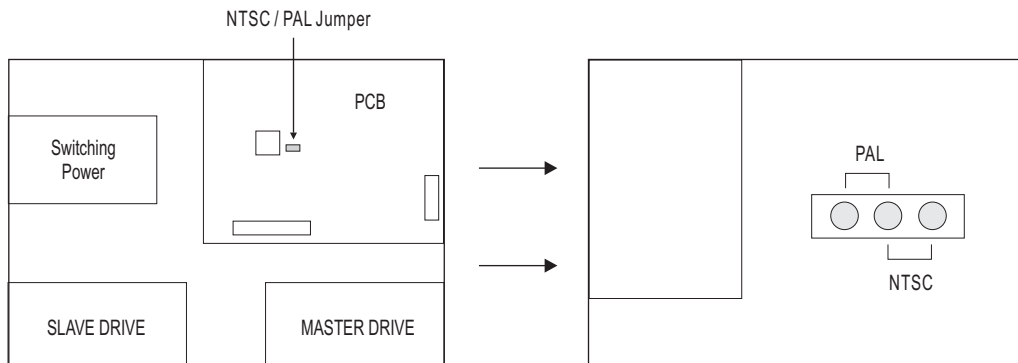
[Figure 1]

HDD Installation

Make sure the power is off before HDD installation.

1. Remove the top cover.
2. Make sure the jumper on HDD is correctly set as Master or Slave. For HDD jumper setting, please refer to HDD user manual.
3. Fix the HDD on the designated areas with supplied screws. Figure 2 shows the Master and Slave HDD installation areas.
4. Connect 40 pin HDD cable first then connect power cable, showed as Figure 2.
5. When finish connection, place top cover back.
6. After power up, enter "HARD DRIVE SETUP" to check if the system has detected installed HDD.
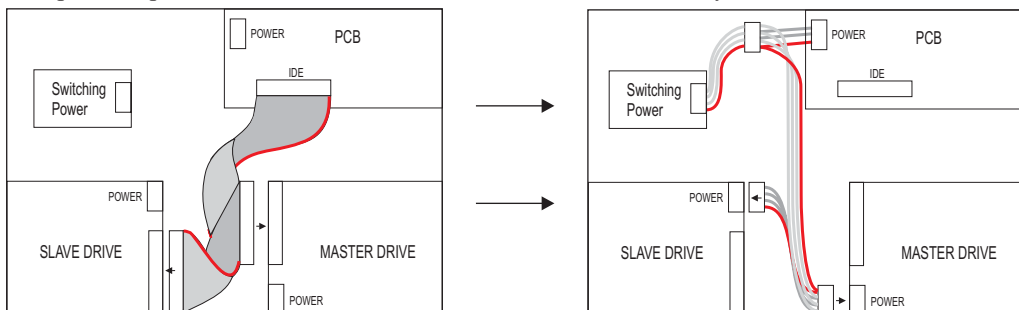
[Figure 2]

System Setup

Press [MENU/ESC] key to enter OSD setup menu as shown:

● Press [▲] [▼] keys to select setting item and Press
  [SELECT] key to confirm.

● Press [MENU/ESC] to exit from setup menu.

```
                    MAIN MENU
    >  CAMERA SELECT          1 2 3 4
       RECORD SELECT          1 2 3 4
       RECORD MODE            EACH
       RECORD FRAME RATE      30 FPS
       VIDEO QUALITY          HIGH
       RECORD SCHEDULE
       ADVANCE MENU
       HARD DRIVE SETUP
       ALARM SETUP
       AUTO RECORD            180 SEC
          ∧∨ TO MOVE  MENU TO EXIT
              SELECT TO SETUP
```
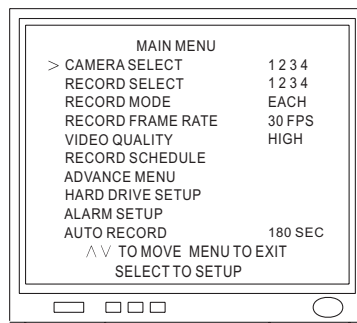
1. CAMERA SELECT

User can turn off or turn on camera inputs:

》 After entered setup menu, press [▲] [▼] keys to move the arrow sign to "CAMERA SELECT"
   and press [SELECT] key to confirm.
   Different camera numbers will be displayed every time when [SELECT] key is pressed.
   ("－" = off ; Factory Default Value : 1234)

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

2. RECORD SELECT

User can select the cameras for recording.

》 After entered setup menu, press [▲] [▼] keys to move the arrow sign to "RECORD SELECT"
   and press [SELECT] key to confirm.
   Different camera numbers will be displayed every time when [SELECT] key is pressed.
   ("－" = No Recording ; Factory Default Value : 1234)

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

3. RECORD MODE

》 After entered setup menu, press [▲] [▼] keys to move the arrow sign to "RECORD MODE"
   and press [SELECT] key to confirm.
   EACH = Full Screen Recording.
   QUAD = Quad Recording.
   Factory Default Value : EACH

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

Note：Full screen can not be recalled in playback if data is recorded in quad recording.

4. RECORD FRAME RATE

》 After entered setup menu, press [▲] [▼] keys to move the arrow sign to "RECORD
   FRAMERATE" and press [SELECT] key to confirm.
   NTSC : There are 9 different frame rates for selection : "1, 2, 3, 4, 5, 7, 10, 15, 30" fps.
   PAL : There are 8 different frame rates for selection : "1, 2, 3, 4, 6, 8, 12, 25" fps.
   Factory Default Value : NTSC:30/PAL : 25

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

5. VIDEO QUALITY (Recording)

》 After entered setup menu, press [▲] [▼] keys to move the arrow sign to "VIDEO QUALITY" and press [SELECT] key to confirm.

HIGH = high recording video quality, low compression rate, bigger file size.

NORMAL = normal recording video quality, medium compression rate.

MEDIUM = medium recording video quality, normal compression/rate.

LOW = high compression rate, smaller file size.

Factory Default Value : HIGH

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

6. RECORD SCHEDULE

》 After entered setup menu, press [▲] [▼] keys to move the " ＊ " sign to "RECORD SCHEDULE" and press [SELECT] key to confirm.

Monitor displays：


```
              RECORD SCHEDULE

     ＋ : CONTINUOUS RECORDING
     ＊ : ALARM TRIGGERING
     ― : NO SCHEDULING

           ＊
     ＋＋＋＋＋＋＋＋＋＋＋＋＋＋＋＋＋＋＋＋＋＋＋＋＋
     ∧  ∧  ∧  ∧  ∧  ∧  ∧  ∧  ∧
     0   3   6   9  12  15  18  21  24

          ∧ ∨ TO MOVE  MENU TO EXIT
             SELECT TO SETUP
```
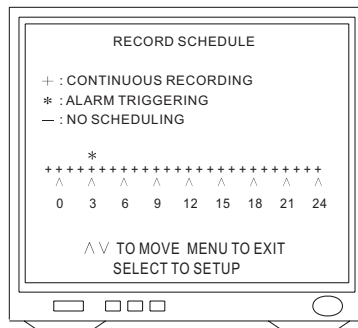
User has to set up recording schedule for each hour :

＋ = continuous recording.

＊ = motion / alarm recording.

― = no recording.

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select next setting item.

》 [REC] key on the front panel must be pressed to activate recording as programmed. When record is activated, record mode status will be displayed on screen. System will not record if [REC] key is not pressed.

Note：1. If " ＊ ", alarm activation recording, is selected, system will only execute alarm triggered recording. Alarm Triggered Recording Frame Rate : 30FPS/ No. of Recording CH.

2. If "＋", continuous recording, is selected, under normal recording, recording Frame Rate is equal to the Recording Frame Rate set by user. Under alarm or motion triggered recording, the Recording Frame Rate will always be 30FPS/4 and all 4 channels will be recorded.

7. Advance Settings

》 After entered setup menu, press [▲] [▼] keys to move the arrow sign to "ADVANCE MENU" and press [SELECT] key to confirm.

Monitor displays：

```
          MAIN MENU
  CAMERA SELECT        1 2 3 4
  RECORD SELECT        1 2 3 4
  RECORD MODE          EACH
  RECORD FRAME RATE    30 FPS
  VIDEO QUALITY        HIGH
  RECORD SCHEDULE
> ADVANCE MENU
  HARD DRIVE SETUP
  ALARM SETUP
  AUTO RECORD          180 SEC
      ∧∨ TO MOVE  MENU TO EXIT
         SELECT TO SETUP
```

```
          ADVANCE MENU
> PASSWORD CHANGE
  TIME SET
  SELECT CAMERA  :      1
    HUE          :      NORMAL
    BRIGHTNESS   :      NORMAL
    CONTRAST     :      NORMAL
  KEYLOCK               OFF
  SEQUENTIAL DISPLAY    OFF
  AUTO GAIN CONTROL     OFF
      ∧∨ TO MOVE  MENU TO EXIT
         SELECT TO SETUP
```

☛ PASSWORD CHANGE

》 After entered Advance Menu, press [▲] [▼] keys to move the arrow sign to "PASSWORD CHANGE" and press [SELECT] key to confirm.

① Enter 6 digits password. (Factory default password is "111111")

CURRENT PASSWORD : _ _ _ _ _ _

② Enter 6 digits new password.

NEW PASSWORD : _ _ _ _ _ _

③ Enter 6 digits new password again to confirm.

PASSWORD CONFIRM : _ _ _ _ _ _

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

Note : For number keys, please refer to Page 4 ILLUSTRATION.

☛ TIME SET

》 After entered Advance Menu, press [▲] [▼] keys to move the arrow sign to "TIME SET" and press [SELECT] key to confirm.

Use [▲] [▼] keys to move "＊" sign to the number that needs to be changed and press [SELECT] key to adjust the numbers. (Time format : YY/MM/DD , H/M/S)

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

☛ CAMERA SETTINGS (Hue, Brightness and Contrast)

》 After entered Advance Menu, press [▲] [▼] keys to move the arrow sign to "CAMERA" and press [SELECT] key to select the camera to be adjusted. After selected, use [▲] [▼] keys to move the arrow to one of the items and use [SELECT] key to adjust.

HUE __ : "Normal, 1, 2, 3, 4, -1, -2, -3, -4,-5" 10 levels to be selected.

BRIGHTNESS__ : "Normal, 1, 2, 3, 4, -1, -2, -3, -4, -5" 10 levels to be selected.

CONTRAST__ : "Normal, 1, 2, 3, 4, -1, -2, -3, -4, -5" 10 levels to be selected.

Factory Default Value : Normal.

Note : Quad display recommended when adjusting camera.

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

☛ KEYLOCK
   》 After entered Advance Menu, press [▲] [▼] keys to move the arrow sign to "KEYLOCK"
     and press [SELECT] key to confirm.
     NO = Disable keylock function.
     YES = Enable keylock function.
     Factory Default Value : NO
   Note : Once keylock is enabled, Stop Recording and Clear Hard Drive will be protected by
          Pressword.
   》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting
     item.

☛ SEQUENTIAL DISPLAY
   》 After entered Advance Menu, press [▲] [▼] keys to move the arrow sign to "SEQUENTIAL
     DISPLAY" and press [SELECT] key to confirm.
     There are 8 display time for selection : "OFF, 1, 2, 3, 4, 5, 10, 20" seconds.
     Factory Default Value : OFF
   Note : Under Sequential Display Mode, press any camera display keys to stop and press [▼]
          key to resume.
   》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting
     item.

☛ AUTO GAIN CONTROL
   》 After entered Advance Menu, press [▲] [▼] keys to move the arrow sign to "AUTO GAIN
     CONTROL" and press [SELECT] key to confirm.
     OFF = Disable AGC Function
     ON = Enable AGC Function
     Factory Default Value : OFF
   》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting
     item.

8. HARD DRIVE SETUP
   》 After entered setup menu, press [▲] [▼] keys to move the arrow sign to "HARD DRIVE SETUP"
     and press [SELECT] key to confirm.
     Monitor displays：

```
              MAIN MENU
   CAMERA SELECT          1 2 3 4
   RECORD SELECT          1 2 3 4
   RECORD MODE            EACH
   RECORD FRAME RATE      30
   VIDEO QUALITY          HIGH
   RECORD SCHEDULE
   ADVANCE SETTINGS
 > HARD DRIVE SETUP
   ALARM SETUP
   AUTO RECORD
      ∧∨  TO MOVE  MENU TO EXIT
         SELECT TO SETUP
```

```
             HARD DRIVE SETUP
 > OVERWRITE ENABLED      YES
   MASTER HDD SIZE        76199 MB
   MASTER HDD USED        33MB  3%
   MASTER HDD FORMAT
   SLAVE HDD SIZE         761999 MB
   SLAVE HDD USED         00MB  0%
   SLAVE HDD FORMAT


      ∧∨  TO MOVE  MENU TO EXIT
         SELECT TO SETUP
```

☛ Overwrite Recording (continuous recording)

》 After entered "HARD DRIVE SETUP" menu, press [▲] [▼] keys to move the arrow sign to "OVERWRITE ENABLED" and press [SELECT] key to confirm.
YES = when HDD is full, system will overwrite the HDD starting from the beginning.
NO = when HDD is full, system will stop recording.
Factory Default Value : YES.

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

☛ Hard Drive Format (clear hard drive)

》 After entered "HARD DRIVE SETUP" menu, press [▲] [▼] keys to move the arrow sign to "MASTER HDD FORMAT" or "SLAVE HDD FORMAT" and press [SELECT] key to clean HDD.
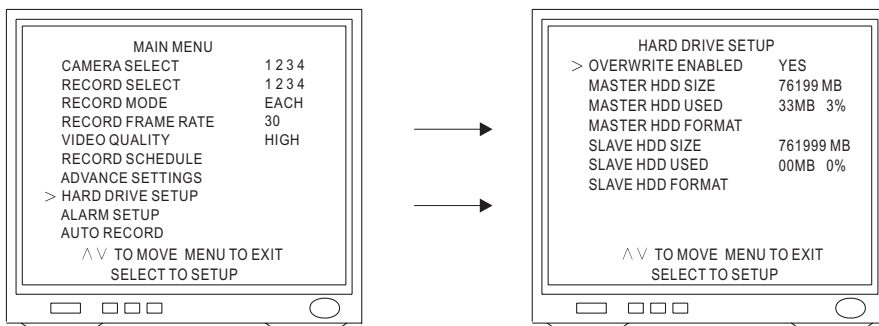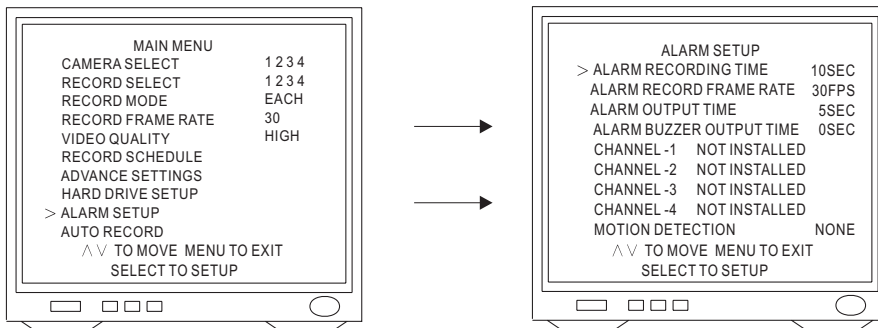Note : When [SELECT] key is pressed, system sill request user to enter password before clear HDD. (Factory Default Value : 111111)

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

9. ALARM SETUP

》 After entered setup menu, press [▲] [▼] keys to move the arrow sign to "ALARM SETUP" and press [SELECT] key to confirm.
Monitor displays：

```
          MAIN MENU
   CAMERA SELECT        1 2 3 4
   RECORD SELECT        1 2 3 4
   RECORD MODE          EACH
   RECORD FRAME RATE    30
   VIDEO QUALITY        HIGH
   RECORD SCHEDULE
   ADVANCE SETTINGS
   HARD DRIVE SETUP
 > ALARM SETUP
   AUTO RECORD
     ∧∨ TO MOVE  MENU TO EXIT
         SELECT TO SETUP
```

→

```
            ALARM SETUP
 > ALARM RECORDING TIME      10SEC
   ALARM RECORD FRAME RATE   30FPS
   ALARM OUTPUT TIME          5SEC
   ALARM BUZZER OUTPUT TIME   0SEC
   CHANNEL -1    NOT INSTALLED
   CHANNEL -2    NOT INSTALLED
   CHANNEL -3    NOT INSTALLED
   CHANNEL -4    NOT INSTALLED
   MOTION DETECTION          NONE
     ∧∨ TO MOVE  MENU TO EXIT
         SELECT TO SETUP
```

☛ ALARM RECORDING TIME

》 After entered Alarm Setup menu, press [▲] [▼] keys to move arrow sign to "ALARM RECORD TIME" and press [SELECT] key to select.
There are 6 selections for alarm record time : "5, 10, 15, 20, 25, 30" seconds.
Factory Default Value : 10

》 Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

☛ ALARM RECORD FRAME RATE

  ⟫ After entered Alarm Setup menu, press [▲] [▼] keys to move arrow sign to "ALARM
    RECORD FRAME RATE" and press [SELECT] key to select.

    There are nine selections for alarm record frame rate : "OFF, 1, 2, 4, 5, 7, 10, 15, 30" FPS.

    Factory Default Value : 30

  ⟫ Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

☛ ALARM OUTPUT TIME

  ⟫ After entered Alarm Setup menu, press [▲] [▼] keys to move arrow sign to "ALARM
    OUTPUT TIME" and press [SELECT] key to select.
    There are 8 selections for alarm record time : "CONT, 00, 5, 10, 15, 20, 25, 30" seconds.
    Factory Default Value : 00

  ⟫ Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select next setting item.

  Note : After finished setting up alarm record and output time, user must setup alarm trigger
        mode (NO/NC/Not Installed) for each channel.

☛ ALARM BUZZER OUTPUT TIME

  If a Video Loss or an alarm trigger happens, buzzer will go off.

  ⟫ After entered Alarm Setup menu, press [▲] [▼] keys to move arrow sign to "ALARM
    BUZZER OUTPUT TIME" and press [SELECT] key to select alarm buzzer output time.
    There are 12 time for selection : "0, 1, 2, 3, 4, 5, 10, 15, 20, 25, 30, cont"
    Factory Default Value : 0, no alarm buzzer output.

  ⟫ Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

  Note : Press [MENU/ESC] at anytime to stop Buzzer Sound manually.

☛ ALARM INPUT NO/NC SELECTION

  ⟫ After entered Alarm Setup menu, press [▲] [▼] keys to move arrow sign to
    "CHANNEL-1" and press [SELECT] key to confirm.
    There are 3 selections : "NO, NC or Not Installed".
    NO = Normal - Open.   NC = Normal - Close.   Not Installed = No Input.
    Factory Default Value : Not Installed.

  Note : If "Not Installed" is selected for one particular channel, this channel will not execute
        alarm-triggered recording but other recording will follow Record Schedule.

  ⟫ Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

☛ MOTION DETECTION SENSITIVITY

  ⟫ After entered Alarm Setup menu, press [▲] [▼] keys to move arrow sign to "MOTION
    DETECTION" and press [SELECT] key to change Motion Detection Sensitivity.
    There are 4 sensitivities for selection : "High, Medium, Low, None"
    Factory Default Value : None.

  ⟫ Press [MENU/ESC] key to exit when finished or [▲] [▼] keys to select the next setting item.

10. AUTO RECORD

》After entered setup menu, press [▲] [▼] keys to move arrow sign to "AUTO RECORD" and press [SELECT] key to select auto record time.

Monitor displays：

```
              MAIN MENU
   CAMERA SELECT        1 2 3 4
   RECORD SELECT        1 2 3 4
   RECORD MODE          EACH
   RECORD FRAME RATE    30 FPS
   VIDEO QUALITY        HIGH
   RECORD SCHEDULE
   ADVANCE SETTINGS
   HARD DRIVE SETUP
   ALARM SETUP
 > AUTO RECORD          180 SEC
        ∧∨ TO MOVE  MENU TO EXIT
           SELECT TO SETUP
```

There are 6 selections for Auto Record time :

"0, 15, 30, 60, 120, 180" seconds.

Factory Default Value : 180

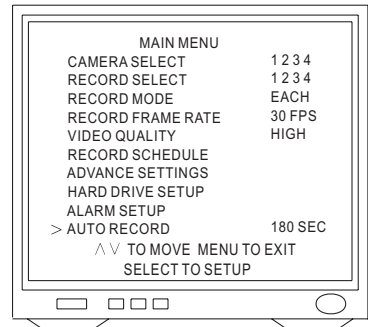Note : 1. Auto Record is to prevent user from forgetting to start recording manually.

Once recording started, it will follow the record schedule automatically.

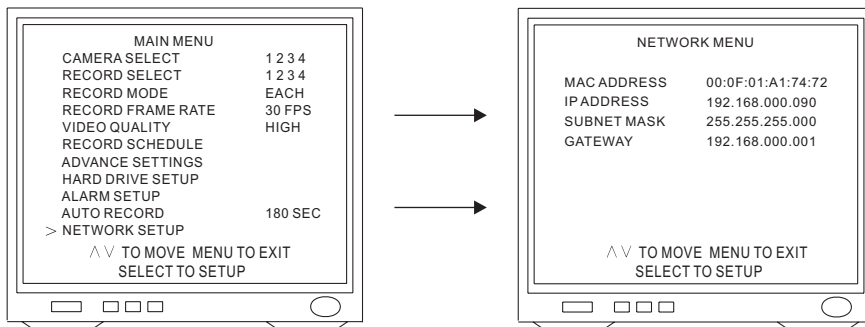2. If "0" is selected, user must start recording manually.

》Press [MENU/ESC] key to exit when finished.

11. NETWORK SETUP (OPTIONAL)

》After entered setup menu, press [▲] [▼] keys to move arrow sign to "NETWORK SETUP" and Press [SELECT] to confirm.

Monitor displays :

```
              MAIN MENU
   CAMERA SELECT        1 2 3 4
   RECORD SELECT        1 2 3 4
   RECORD MODE          EACH
   RECORD FRAME RATE    30 FPS
   VIDEO QUALITY        HIGH
   RECORD SCHEDULE
   ADVANCE SETTINGS
   HARD DRIVE SETUP
   ALARM SETUP
   AUTO RECORD          180 SEC
 > NETWORK SETUP
        ∧∨ TO MOVE  MENU TO EXIT
           SELECT TO SETUP
```

```
            NETWORK MENU

   MAC ADDRESS    00:0F:01:A1:74:72
   IP ADDRESS     192.168.000.090
   SUBNET MASK    255.255.255.000
   GATEWAY        192.168.000.001




        ∧∨ TO MOVE  MENU TO EXIT
           SELECT TO SETUP
```

☛ MAC ADDRESS

》MAC ADDRESS is LAN Card ID, and can't be changed.

☛ IP ADDRESS

》After enter Network Menu, press [▲] [▼] keys to move arrow sign to "IP ADDRESS" and press [SELECT] to enter IP Address.

》Press [MENU/ESC] key to exit when finished or press [▲] [▼] keys to select the next item.

☛ SUBNET MASK

》After enter Network Menu, press [▲] [▼] keys to move arrow sign to "SUBNET MASK" and press [SELECT] to enter Subnet Mask.

》Press [MENU/ESC] key to exit when finished or press [▲] [▼] keys to select the next item.

☛ GATEWAY

》After enter Network Menu, press [▲] [▼] keys to move arrow sign to "GATEWAY" and press [SELECT] to enter Gateway.

》Press [MENU/ESC] key to exit when finished or press [▲] [▼] keys to select the next item.
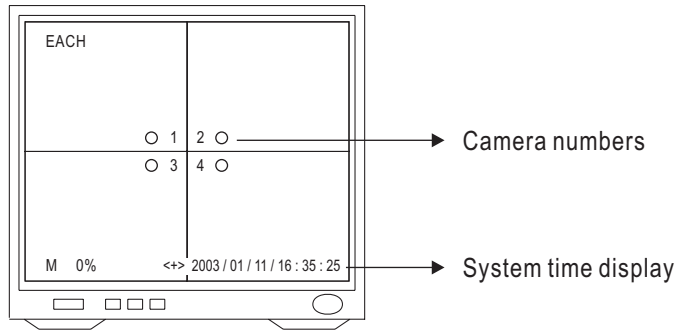
SYSTEM OPERATION

When system's power is turned on, system will auto running "Initial HDD". This will last 3 to 5 seconds and showed on monitor screen.

Monitoring

There are two options for live monitoring : Quad or Each.

☛ When quad is selected, monitor screen will show as below :

```
EACH




        ○ 1 │ 2 ○ ─────────────────→  Camera numbers
        ○ 3 │ 4 ○


M   0%      <+> 2003 / 01 / 11 / 16 : 35 : 25 ──→  System time display
```

☛ When one of the camera video signal is turned off, monitor screen will show as below :
Note : Camera video signal turned off means the camera is not selected in camera select setup.

```
                      1 │ 2
                        │ 4

        OFF

M   0%      <+> 2003 / 01 / 11 / 16 : 35 : 25
```
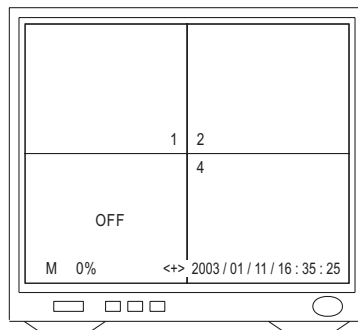
☛ When any of the camera video signal is lost, monitor screen will show as below :
Note : When a Video Loss is detected, the corresponding alarm will be triggered automatically.

```
                      1 │ 2
                        │ 4

        Video Loss

M   0%      <+> 2003 / 01 / 11 / 16 : 35 : 25
```
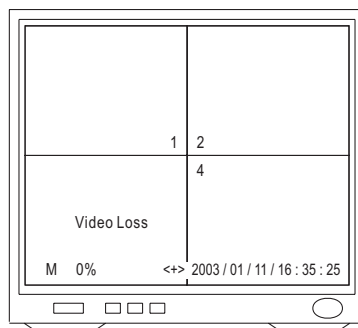
Recording

When "Camera Select", "Record Select", "Record Mode", "Record Frame Rate", "Video Quality" and "Alarm Setup" are set, [REC] key on the front panel must be pressed and system will start recording according to the setting.

☛ When recording is activated, monitor screen will show as below：

Recording Mode ◄ EACH
EACH or QUAD

○ 1 │ 2 ○ ──► Recording Indicator

○ 3 │ 4 ○

──► Record Schedule

Recording HDD ◄ M 0% <+> 2003 / 01 / 11 / 16 : 35 : 25
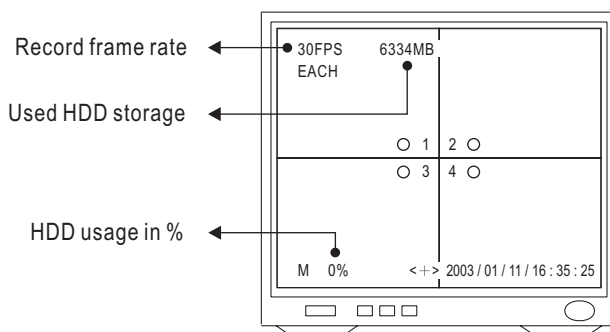M : Master
S : Slave
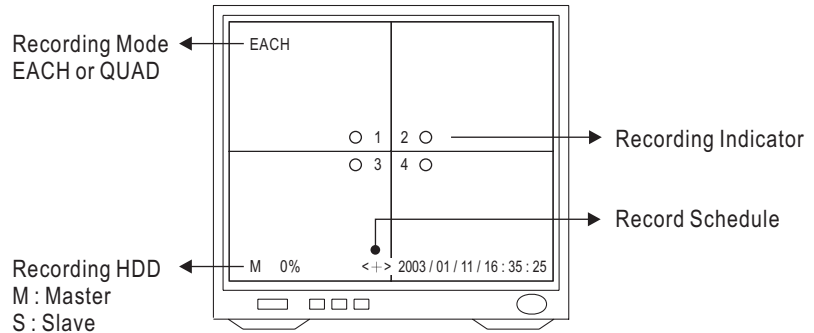
To stop recording, press [■] key.

To start recording, press [REC] key.

To stop recording, press [■] key.

Note：When recording is activated, no other function keys can be operated. Stop recording before any other operation.
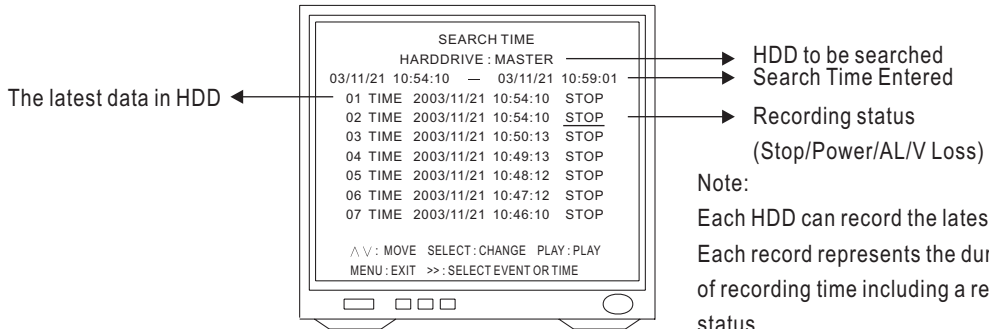
Hard Drive Storage Capacity and Frame Rate Status

To check hard drive storage capacity or record frame rate, press [SELECT] key. Monitor screen will show current recording frame rate and hard drive usage percentage. Press [SELECT] again to exit.

Record frame rate ◄ 30FPS 6334MB
EACH

Used HDD storage ◄

○ 1 │ 2 ○

○ 3 │ 4 ○

HDD usage in % ◄

M 0% <+> 2003 / 01 / 11 / 16 : 35 : 25

Data Search and Playback

Press [▶] key on panel and screen displays as below:

```
        SEARCH TIME
     HARDDRIVE : MASTER
03/11/21 10:54:10  —  03/11/21 10:59:01
  01 TIME  2003/11/21 10:54:10  STOP
  02 TIME  2003/11/21 10:54:10  STOP
  03 TIME  2003/11/21 10:50:13  STOP
  04 TIME  2003/11/21 10:49:13  STOP
  05 TIME  2003/11/21 10:48:12  STOP
  06 TIME  2003/11/21 10:47:12  STOP
  07 TIME  2003/11/21 10:46:10  STOP

∧∨ : MOVE  SELECT : CHANGE  PLAY : PLAY
MENU : EXIT  >> : SELECT EVENT OR TIME
```

The latest data in HDD ◀

HDD to be searched
Search Time Entered

Recording status
(Stop/Power/AL/V Loss)
Note:
Each HDD can record the latest 511 data.
Each record represents the duration
of recording time including a recording
status.

Data Search and Play back:

1. Select data to playback

   After enter Search Time menu, press [▲] [▼] key to select the desired data to play, and press [▶] to playback. To stop playing, press [■] key.

2. Select HDD to playback

   After enter Search Time menu, press [▶▶] key to move cursor to "HDD" and press [SELECT] to select the desired HDD, and press [▶] to playback. To stop playing press [■] key.
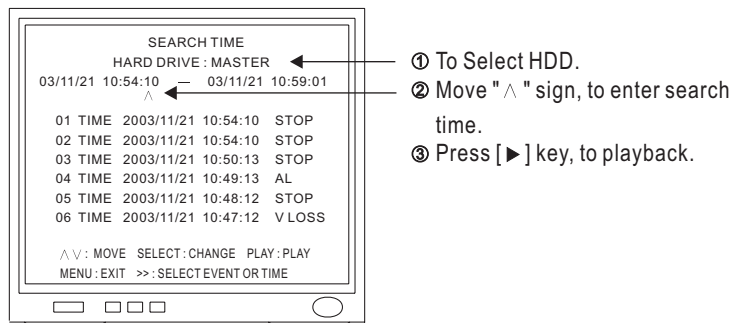
3. Enter date and time to playback

   ⟫ After enter Search Time menu, press [▶▶] key first to move the cursor to select HDD, and press [SELECT] to confirm.

   ⟫ Press [▼] key to move the cursor to the Search Time, and use [▲] [▼] key to move " ∧ " sign, and then press [SELECT] to enter the date and time to be searched.

   ⟫ When finished press [▶] to playback. To stop playing press [■] key.

   Ex：To search stored data starting from "2004/05/02 PM2:25:30" (YY/MM/DD H:M:S) in master HDD.

   After enter Search time menu, press [▶▶] key to move the cursor to select "HARD DRIVE : MASTER", and press [SELECT] to confirm, and press [▼] key to move the cursor to the Search Time, and use [▲] [▼] key to move " ∧ " sign, and press [SELECT] to enter "04/05/02 14:25:30". When finished press [▶] to playback.

```
        SEARCH TIME
     HARD DRIVE : MASTER
03/11/21 10:54:10  —  03/11/21 10:59:01
       ∧
  01 TIME  2003/11/21 10:54:10  STOP
  02 TIME  2003/11/21 10:54:10  STOP
  03 TIME  2003/11/21 10:50:13  STOP
  04 TIME  2003/11/21 10:49:13  AL
  05 TIME  2003/11/21 10:48:12  STOP
  06 TIME  2003/11/21 10:47:12  V LOSS

∧∨ : MOVE  SELECT : CHANGE  PLAY : PLAY
MENU : EXIT  >> : SELECT EVENT OR TIME
```

① To Select HDD.
② Move " ∧ " sign, to enter search time.
③ Press [▶] key, to playback.

Note : When selected data has been played, monitor displyas "STOP". Press [■] to exit.

Playback Control

Under playback, following keys can be operated：

1. [▸▸]：Fast Forward (1x, 2x, 3x, 4x)

2. [◂◂]：Fast Rewind (3x)

3. [▮▸]：Press once to pause when playing, press again for frame by frame play.

   [▮▸]：Press once to pause when playing, press again for frame by frame play.
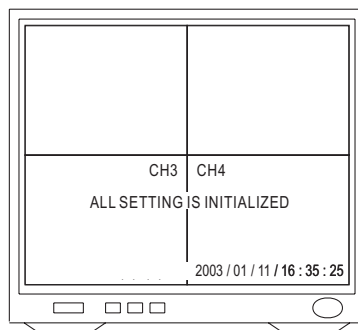
4. [■]：Stop and escape playback.

Hard Drive Error Auto Detect

The system will check hard drive automatically. If there is an error or damage on the hard drive, monitor screen will show "HDD ERROR!"
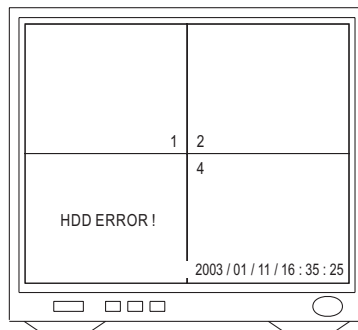
Manufacturing Default Setting

In live mode, press [■] 6 times continuously to reset.
Monitor screen will show "RESET ....." during resetting.

RECORDING CAPACITY

80GB HARD DRIVE

Video Signal	NTSC							
Recording Format	Full screen				QUAD screen			
Recording Quality	High	Normal	Medium	Basic	High	Normal	Medium	Basic
30 fps	1893 / 40	1463 / 52	1263 / 60	1127 / 68	2444 / 31	1741 / 44	1587 / 48	1389 / 55
15 fps	975 / 78	742 / 103	637 / 120	571 / 134	1251 / 61	957 / 80	737 / 104	715 / 107
10 fps	644 / 119	492 / 155	422 / 181	376 / 203	754 / 101	580 / 132	499 / 153	449 / 170
7 fps	508 / 150	369 / 207	316 / 242	285 / 268	572 / 133	437 / 175	370 / 206	324 / 236
5 fps	318 / 240	242 / 315	209 / 365	188 / 406	376 / 203	290 / 263	248 / 308	216 / 353
4 fps	274 / 279	208 / 367	179 / 426	160 / 477	323 / 236	250 / 305	210 / 363	184 / 415
3 fps	246 / 310	173 / 441	142 / 537	126 / 606	225 / 339	173 / 441	149 / 512	130 / 587
2 fps	148 / 516	104 / 734	87 / 877	76 / 1004	160 / 477	118 / 647	99 / 771	87 / 877
1 fps	69 / 1106	50 / 1175	43 / 1526	38 / 2008	76 / 1004	58 / 1316	49 / 1558	43 / 1775
Video Signal	PAL							
Recording Format	Full screen				QUAD screen			
Recording Quality	High	Normal	Medium	Basic	High	Normal	Medium	Basic
25 fps	1021 / 75	772 / 99	654 / 117	575 / 133	2736 / 28	2060 / 37	1716 / 44	1477 / 52
12 fps	685 / 111	514 / 148	436 / 175	383 / 199	1359 / 56	1026 / 74	856 / 89	737 / 104
8 fps	504 / 151	381 / 200	323 / 236	285 / 268	902 / 85	680 / 112	567 / 135	488 / 156
6 fps	403 / 189	305 / 250	258 / 296	227 / 336	676 / 113	509 / 150	423 / 180	366 / 209
4 fps	295 / 259	222 / 344	188 / 406	165 / 463	455 / 168	342 / 223	286 / 267	246 / 310
3 fps	225 / 339	171 / 446	145 / 526	127 / 601	337 / 226	254 / 300	212 / 360	182 / 419
2 fps	174 / 439	132 / 578	112 / 681	98 / 779	249 / 307	189 / 404	157 / 486	134 / 570
1 fps	90 / 848	67 / 1139	57 / 1339	49 / 1558	123 / 620	91 / 839	76 / 1004	65 / 1174

HDD Space Used Per Hour (MB) / Total Recording Time (Hour)
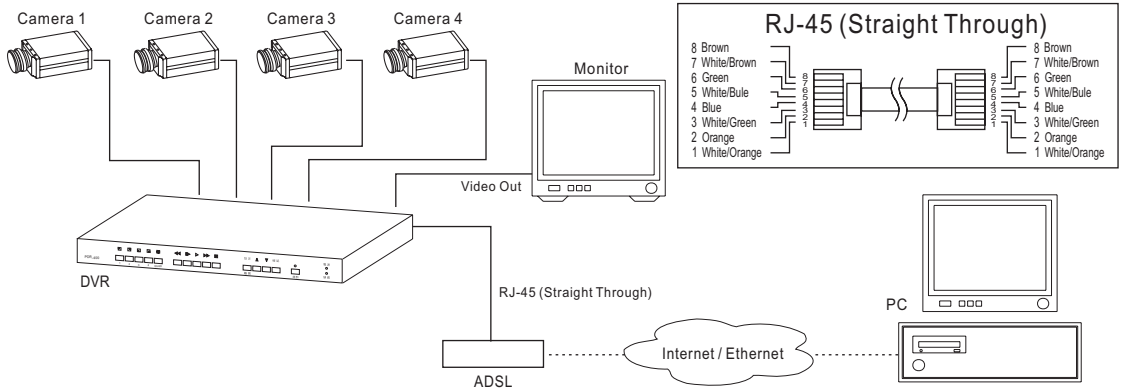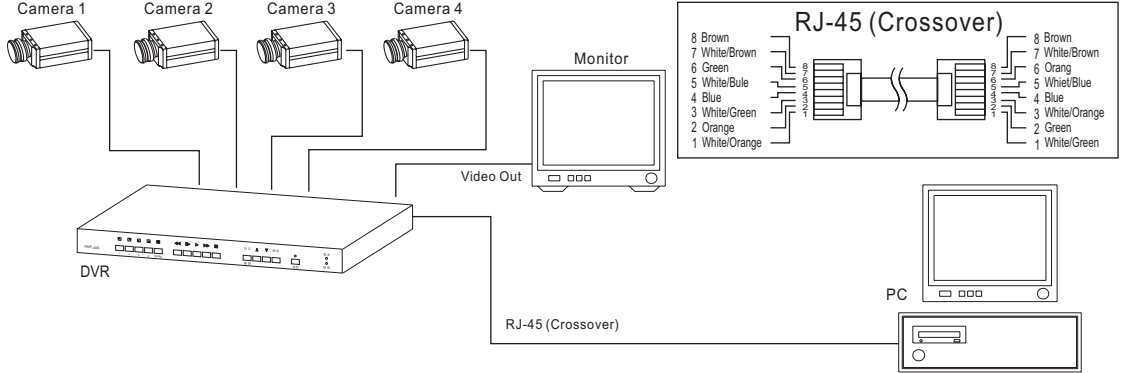
REMOTE VIEWER (OPTIONAL)

PREFACE

PDR-400IP supports the flexibilities for multi-users accessing live monitoring and retrieving stored video remotely for the DVR via Internet Browser. No software application installation is required. PDR-400IP provides excellent video quality in remote monitoring and is capable of viewing different video size for different network bandwidth considerations. In short, PDR-400IP is a cost-effective solution for home and small business remote surveillance.

Internet Browser

CONNECTION DIAGRAM

1. Internet

Camera 1　Camera 2　Camera 3　Camera 4

Monitor

Video Out

DVR

RJ-45 (Crossover)

PC

RJ-45 (Crossover)

RJ-45 (Crossover)	
8 Brown	8 Brown
7 White/Brown	7 White/Brown
6 Green	6 Orang
5 White/Bule	5 Whiet/Blue
4 Blue	4 Blue
3 White/Green	3 White/Orange
2 Orange	2 Green
1 White/Orange	1 White/Green

Camera 1　Camera 2　Camera 3　Camera 4

Monitor

Video Out

DVR

RJ-45 (Straight Through)

ADSL

Internet / Ethernet

PC

RJ-45 (Straight Through)	
8 Brown	8 Brown
7 White/Brown	7 White/Brown
6 Green	6 Green
5 White/Bule	5 White/Bule
4 Blue	4 Blue
3 White/Green	3 White/Green
2 Orange	2 Orange
1 White/Orange	1 White/Orange

2. LAN

Camera 4
Camera 3
Camera 2
Camera 1

Monitor

Video Out

DVR 1

Camera 4
Camera 3
Camera 2
Camera 1

Monitor

Video Out

DVR 2

PC

RJ-45 (Straight Through)	
8 Brown	8 Brown
7 White/Brown	7 White/Brown
6 Green	6 Green
5 White/Bule	5 White/Bule
4 Blue	4 Blue
3 White/Green	3 White/Green
2 Orange	2 Orange
1 White/Orange	1 White/Orange

RJ-45 (Straight Through)　　RJ-45 (Straight Through)　　RJ-45 (Straight Through)

HUB

Internet Access

Before using PDR-400IP for Internet access, please make sure that the following network configurations get setup properly :

1. Networking Setting

   Network IP address, subnet mask, and gateway are setup correctly. Always, consult your network administrator before installing PDR-400IP.
   Use IPScan software tool (shipped within the product CD) to search PDR-400IP, if PDR-400IP is accessible in your local network.
   You can also "ping" PDR-400IP to see if the DVR is accessible in your local network.

   To use IPScan software or ping utility, please see appendix for detail.

2. Internet Browser Setting & Software Component Required

   Make sure that your Internet Browser allows signed ActiveX plug-in running on your PC. Set "Download Signed ActiveX plug-in" to Prompt.
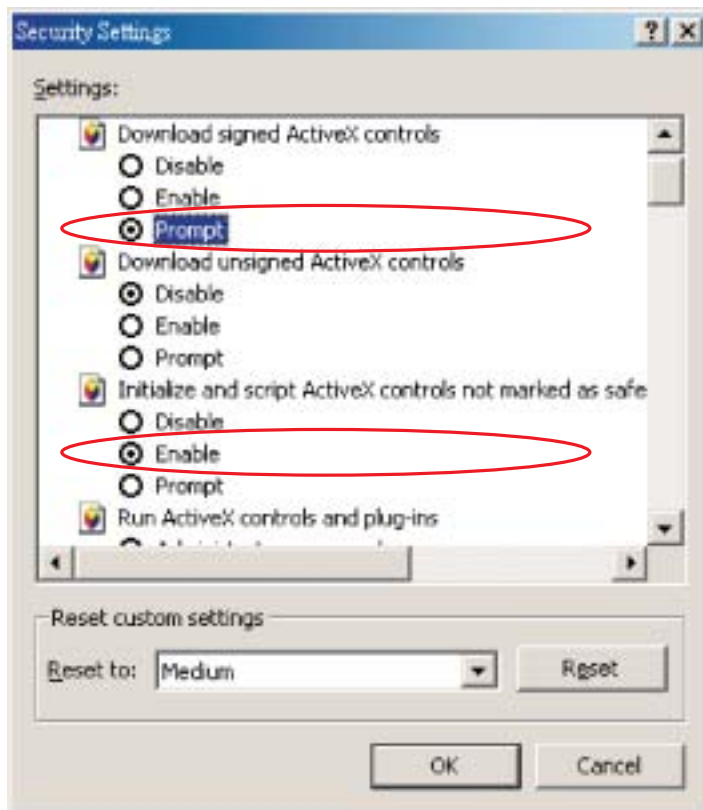
3. IP Address Configuration

There are basically three ways for setup IP address of PDR-400IP. A user can determine which way is the easiest way if the software or hardware is available at the installation site. Please follow one of the following ways to setup IP address.

① Use front keypad of PDR-400IP to change IP address, if a monitor is properly setup. See network setup, P.12 for detail.

② Use IPScan software utility to change PDR-400IP's IP address, if a PC is present at the installation site. See appendix for detail.

③ Use PDR-400IP's web interface to change IP address, if a PC is present at the installation site. See "Network→General Setting", P.27 for detail.

4. Login

There are two levels of user authentication including administrator and guest.
The only difference is that administrator can configure system settings. Guest can only view live video.
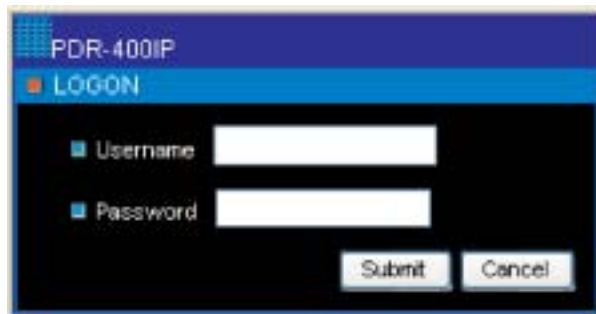
The default settings of username and password are as follow :

● Administrator :
  Username : admin
  Password : pass

● Guest
  Username : guest
  Password : guest

To login into PDR-400IP, please type username and password in the edit boxes. Click on [Submit] button to enter the system.

5. Menu Systems

To use PDR-400IP's menu systems, please right click on video box (ActiveX control). A menu with three menu items gets pop up. A user can adjust video property, perform video record, and zoom the video source.

● Video Property

A user can change a video property at local PC. To change a video property, please click on Video Property menu item. There are six properties that a user can change. Changing video properties does not change server's settings. However, the changes only affect the video ActiveX control of the user's PC.
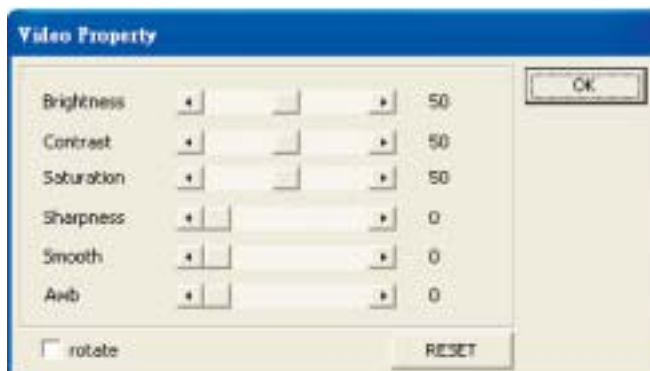
● **Recording**

To record PC AVI file, please click on Recording menu item. An AVI Capturing dialog box shows up. A user can specify the AVI recording path in the Save As edit box. Click on Start button. Live video or stored video (playback) can be captured and saved into local PC. Click on Stop button to stop the recording operation.

● **Zoom**

To zoom the video ActiveX control, please select Zoom menu item. Please perform mouse-dragging operation. The mouse-dragging area gets zoomed.

To disable zoom mode, please right click on the video ActiveX control again. Select on Zoom menu item again to restore original view area.

After login PDR-400IP as administrator, there are two main features-system operation and configuration. Operation and configuration features are described as follows :

1. PDR-400IP Operational HTML Page

PDR-400IP operational HTML page layout:

① Video Size   ⑤ Timer - PDR-400IP's timer system
② Configure hyper link   ⑥ HTML Control panel
③ Text Stamp   ⑦ Frame statistics
④ Video ActiveX (software component)   ⑧ Online status

① Video Size

Base on different network bandwidth consideration, a user can change the video ActiveX size ranging from small (QCIF) to large (VGA). To change video size, simply chick on the hyper link of video size.

② Configure

Configure section allows administrator to configure PDR-400IP via HTML web page. There are basically three system categories including server, network, and Video Settings.

③ **Text Stamp**

Text stamp feature allows a user to add text description for the video ActiveX. To setup text stamp, please see "Video Setting→Text Stamp" for detail.

④ **Video ActiveX Control**

Video ActiveX control is a software component displaying video streaming embedded inside an HTML page. PDR-400IP's video ActiveX gets digital authentication code signed. PDR-400IP's video ActiveX can be automatically downloaded to a user's PC when the user logon to PDR-400IP for the first time. Internet Browser should be configured to allow ActiveX plug-in run on the user's PC.

⑤ **System Time**

⑥ **HTML Control Panel**

PDR-400IP allows a user to control PDR-400IP's keypad system. The operation of HTML control panel and PDR-400IP's keypad system are identical.

⑦ **Frame Statistics**

Frame rate and frame size.

⑧ **Online status**

Number of person is currently accessing PDR-400IP.

2. Configuration

PDR-400IP's administrator can configure PDR-400IP via standard HTML web page. There are basically three system categories including server, network, and video settings. This chapter explains the detail of each system setting.
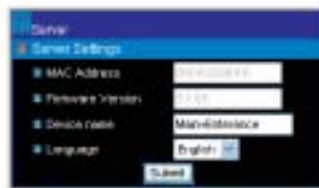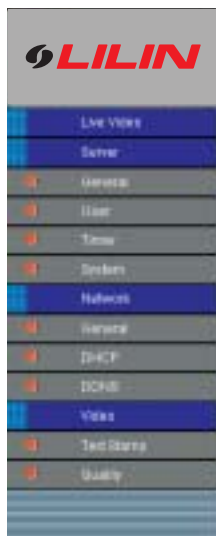
● **Server Setting**

Server settings contain PDR-400IP server's system information such as MAC address, firmware version, users, system clock, and other system commands.
To change or use the information, please follow the instructions in this chapter.

General Settings

① MAC address

MAC address stands for Media Access Control. In short, MAC address can represent unique identification for IP-based products.

② Firmware Version

Firmware update allows a user to upgrade PDR-400IP's firmware remotely and get more features. A user can use firmware version to verify that if the device has the latest update.
Note: Firmware upgrade can improve PDR-400IP system performance. Please contact
authorized dealer to perform firmware upgrade.

③ Device Name

The device name can be used by IPScan utility to identify the PDR-400IP. To change the device name, enter the name for PDR-400IP and click on Submit button.

User Settings

To change account name, please type new account name in Account edit box. To change new password, please type the new password in the New Password edit box. Click on Submit button to update the user settings.

Timer

PDR-400IP allows a user to change system timer via standard HTML web page. To change PDR-400IP's system timer, please enter the date and time in the edit boxes. Click on Submit button to apply this operation.

Note : Change system timer may ruin the recorded video, since the time for recorded video is different from system timer.

● **Network**

PDR-400IP provides many Internet protocols such as IP, DHCP, and DDNS.
A user can configure these Internet protocol settings. However, please consult your network administrator or Internet service provider (ISP) for detail settings.

General Setting

Network general settings are the basic settings connecting PDR-400IP to the network. The default IP Address of PDR-400IP is 192.168.0.90. A user can use this IP address to verify the network connection between a local PC and PDR-400IP using Internet Browser.

For local area network configuration, please enter, at least, IP address, Subnet Mask, and Gateway IP. Press Submit button to update the settings.

For Internet access configuration, please contact your local ISP. Once the Internet connection gets installed, enter IP address (global), Subnet Mask, and Gateway IP. Press Submit button to update the settings.

DHCP Setting

Router, gateway, or other software DHCP server can dynamically distribute an IP address to PDR-400IP. A user can use IPScan utility to launch Internet browser for PDR-400IP's video. To enable DHCP, click on Enable radio button and click on Submit button.

Note : Once the DHCP gets enable, PDR-400IP uses IP address from DHCP server instead of the IP address assigned by IP Settings.

DDNS Settings

DNS stands for domain name server, which provides domain name translation service for a device's IP. Basically, domain name is easier to remember than numeric values (IP). DNS service requires service registration and subscription. Dynamic DNS (DDNS) provides domain name service without subscription.

Please logon www.dyndns.org and register for the service. To use DDNS, please enter DDNS server account ID, and password to logon to the server. Click on Submit button to perform the task. The DDNS message box shows the connection status or error message.

● **Video Settings**

Text Stamp

Specific information can be displayed on video ActiveX. To show the text information on the ActiveX, please enter text on Display Text edit box. The position is adjustable by given x and y. Click Submit button to update above settings.
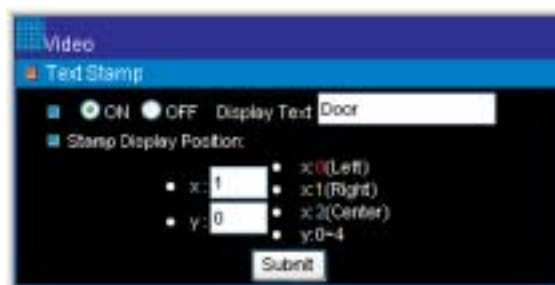
Video Quality

There are three video quality levels that a user can set for PDR-400IP.

Basically, better video quality setting a user can get better video image.

However, if the bandwidth is a concern, please lower the video quality setting.

3. Backup Still Image

PDR-400IP can perform snapshot for its monitor output. The monitor's output gets captured and transferred into SD card in standard JPEG format with 640*480 resolution.

To perform snapshot, please follow the following instructions.

① Insert SD card into SD socket.

② Press on Play button on PDR-400IP front panel. Select time or event search for the stored Video (see playback section for detail).

③ Press Up or Down key that moves cursor to the event.

④ Once the event is identified, press Play button again to play the video.

⑤ Press Pause to stop the video.

⑥ Press REC button to capture the video. REC LED flashing, each time the REC button gets pressed. "SD CARD SAVING" gets shown on monitor.
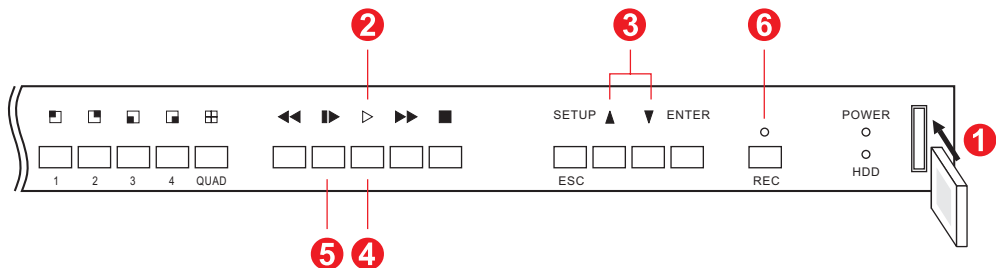

Note : Backup still image can only work for playback mode.

APPENDIX

IPScan Software

IPScan utilizes ARP protocol for scanning all PDR-400IP within a LAN environment. To perform IPScan utility, please follow the instruction below :

① Execute IPScan.exe on product CD.
② Click on Refresh button. IPScan scans all the IP devices and shows all PDR-400IP devices in the device list box.
③ Click on the device item in the list box.
④ Modify Name, IP, Subnet Mask, Gateway, and HTTP port if applicable.
⑤ Click on Apply button for changing above settings.
⑥ Double click on device list item to launch Internet browser. It opens up associated HTTP link.
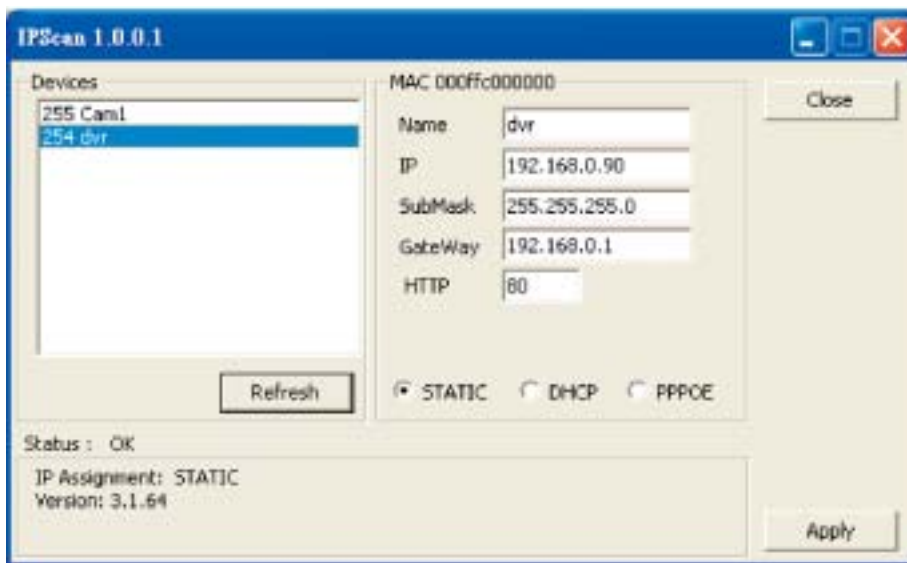
Ping Utility

One can also use ping utility for detecting an IP device. Please follow the instructions below :

① Execute ping utility. Click on Start→Execute. Type "command" in the command line box. A command window shows up.

② Type "ping 192.168.0.90". 192.168.0.90 is the default IP address.

③ If the device is not properly set, ping utility shows Request Time out.
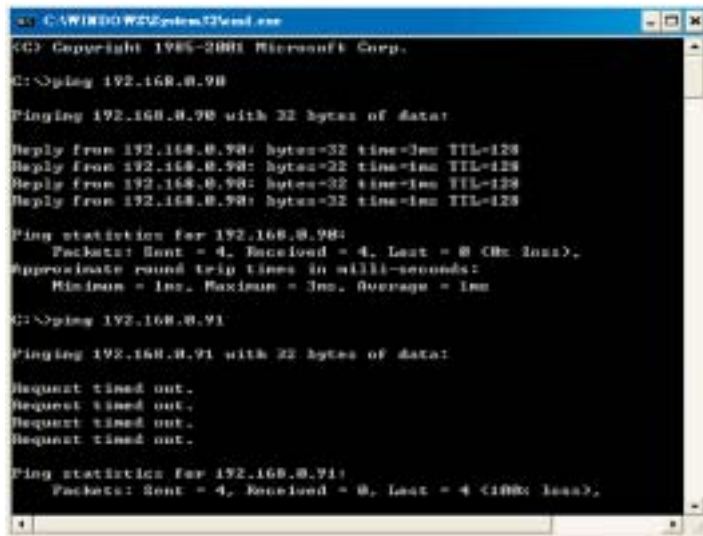
Network Module Specification

CPU	16 bits
ROM	1M Bytes Flash ROM
RAM	8M Bytes SDRAM
Image Compression	JPEG/Motion JPEG
Video Adjustment	Brightness, Contrast, Hue, Saturation, Video Quality
Protocols	TCP, UDP, IP, ARP, ICMP, HTTP, DHCP, DDNS
Resolution	VGA:640*480 , CIF(default):320*240 , QCIF:160*120
Network Throughput	Upto 30fps for CIF/QCIF ; 10fps for VGA
Installation	ARP, Admin web page, IPScan software, DVR interface
Software Upgrade	HTML direct update
Security	Two-layer password protection : Admin and Guest
SD Card	Standard JPEG 640*480 Resolution Backup
AVI File Exporting	ActiveX converts JPEG to AVI
Frame Statistics	Frame Rate and Frame Size
User Logon Statistics	Yes