Firmware ver 2.0
Modification Date : 2005.01.31

Please refer the below message to confirm the modify contents.

1. PTZ CONTROL

   * ADD PRESET FUNCTION : FOR PELCO-D PROTOCOL
   * ADD SWING FUNCTION : FOR DONGYANG CAMERA ( D-MAX )

2. CD-RW ( CD Read & Write Burner )

   * ADD CD-RW FUNCTION FOR DATA BACKUP

3. IE BROWSER

   * ADD IE BROWSER ( ALLOW FOUR USERS MONITORING AT THE SAME TIME )
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## Specification & Organization

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<thead>
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<th>Hardware</th>
<th>CPU</th>
<th>32 bit DSP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HDD</td>
<td>Unlimited HDD x 1 ~ 4</td>
</tr>
<tr>
<td>OS</td>
<td>RTOS</td>
<td></td>
</tr>
<tr>
<td>Video Input</td>
<td>4CH NTSC/PAL</td>
<td></td>
</tr>
<tr>
<td>Display Speed</td>
<td>120 ( PAL: 100 ) fps</td>
<td></td>
</tr>
<tr>
<td>Display Modes</td>
<td>Full, Quad, Sequence</td>
<td></td>
</tr>
<tr>
<td>Recording Speed</td>
<td>352 x 240 120 / 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>704 x 240 60 / 50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>704 x 480 30 / 25</td>
<td></td>
</tr>
<tr>
<td>Monitor Output</td>
<td>BNC / S-Video / 4 loop-out / 1 Spot-out</td>
<td></td>
</tr>
<tr>
<td>Recording Resolution</td>
<td>NTSC: 352x240, 704x240, 704x480</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PAL: 352x288, 704x288, 704x576</td>
<td></td>
</tr>
<tr>
<td>Compression Method</td>
<td>MPEG4 ( Optimized )</td>
<td></td>
</tr>
<tr>
<td>Byte Size per Image</td>
<td>3~5 Kbyte@ 352x240 ( PAL: 352x288 )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5~10 Kbyte@ 704x240 ( PAL: 704x288 )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6~16 Kbyte@ 704x480 ( PAL: 704x576 )</td>
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<td>Recording Modes</td>
<td>Continuous, Motion, Alarm</td>
<td></td>
</tr>
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<td>Recording Schedule</td>
<td>Schedule setting per camera</td>
<td></td>
</tr>
<tr>
<td>Motion Detection</td>
<td>132 grids setting per camera</td>
<td></td>
</tr>
<tr>
<td>Audio input / Output</td>
<td>4 inputs / 1 output</td>
<td></td>
</tr>
<tr>
<td>Sensor / Alarm</td>
<td>4 inputs / 1 output</td>
<td></td>
</tr>
<tr>
<td>VGA Output ( Optional )</td>
<td>1 CII</td>
<td></td>
</tr>
<tr>
<td>PTZ Control &amp; Port</td>
<td>RS-485</td>
<td></td>
</tr>
<tr>
<td>Network</td>
<td>TCP/IP, IE, AP</td>
<td></td>
</tr>
<tr>
<td>Internet viewers</td>
<td>Allow 4 viewers on the line at the same time</td>
<td></td>
</tr>
<tr>
<td>Password</td>
<td>4 password level</td>
<td></td>
</tr>
<tr>
<td>Back-up</td>
<td>LAN, CD-RW, Internet</td>
<td></td>
</tr>
<tr>
<td>Search Modes</td>
<td>By Time &amp; Event</td>
<td></td>
</tr>
<tr>
<td>Search Speeds</td>
<td>Up to 64 on both forward &amp; backward</td>
<td></td>
</tr>
</tbody>
</table>

### 80G HDD Storage Capacity ( hour )

<table>
<thead>
<tr>
<th>CH &amp; Frames</th>
<th>Resolution</th>
<th>Highest</th>
<th>High</th>
<th>Standard</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>4CH ( CIF/30FPS )</td>
<td>41</td>
<td>58</td>
<td>93</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>4CH ( 2CIF/15FPS )</td>
<td>37</td>
<td>46</td>
<td>74</td>
<td>123</td>
<td></td>
</tr>
<tr>
<td>4CH ( D1/7FPS )</td>
<td>19</td>
<td>23</td>
<td>38</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>4CH ( D1/1FPS )</td>
<td>93</td>
<td>132</td>
<td>154</td>
<td>185</td>
<td></td>
</tr>
</tbody>
</table>

This Value is for continuous recording in bright place and large movement. So it can be extend 2 ~ 3 times for ordinary environment.
• Packing Contents

1.2 Product Contents List

Please confirm the contents when you open packing.

① Basic Contents

DVR Machine
12 Adaptor
Power Cable
User Manual
Remote Controller
Remote Viewer CD

② Optional Devices

IDE HDD
VGA Out & GOIP Port
1.3 System Organization
2.1 Front Panel

1. Power : System Power On/Off
2. LED Indicator : Indicate Present System Situation
   ( POWER : System On/Off , RECORD : record On/Off , NETWORK :
   Client Network Connect On/Off , ALARM : Alarm Sensor On/Off )
3. Channel Select Button : When Select Channel or Input Password
4. SCR Mode : When Select Screen Division Mode or Rotation Mode
5. Menu : Go to System Menu
6. Search : Go to Search Mode for Searching Recorded Video
7. PTZ / Focus : Go to Camera PTZ / Focus Control
8. Remote Controller Sensor Input
9. Search Controller : Searching Recorded Video or Control Menu & PTZ / Focus
10. ENTER : Press Enter to Apply Changing Setup
11. RETURN : Cancel Setup or Return Previous Mode
12. CD-RW Burner

Tip

Power Button is soft style to Prevent System Failure by wrong operation .
Channel Selection Button is prior to SCR mode .
When Remote Controller Sensor Input is blocked by something it cause
Remote controller do not work properly .
When press any button . It operate with Beep Sound .
2.2 Rear Panel

1. Video in: BNC Port which connected DVR & Camera (4 camera connectable)
2. Loop Back: Output DVR camera video to loop back port (4 BNC ports)
4. Spot Out: Output spot out video to AV Monitor
5. NTSC/PAL: NTSC / PAL switchable
6. VGA Out: Connected VGA card to output video at computer monitor (optional)
7. SVHS: Output video to connect SVHS terminal
8. Audio Out: Output recorded audio
9. Audio In: AV terminal which connected camera #1 ~ 4 for input audio.
10. Ethernet (TCP/IP): Connect port for LAN cable (Possible to remote survey to connect to client)
11. Alarm/relay/RS-485: Connect port for sensor & relay, PTZ
12. RS-232: For program debug & expand connection (not available now)
13. DC Power Input Terminal: Power supply by DC 12V Adaptor.

Tip

When System Installation, Please Connect when System Off.
Please Use Specific Adaptor when Power Supply.
2.3 IR Remote Controller

- **POWER**
- **SYSTEM ON/OFF**
- **RETURN**
- **MENU**
- **ENTER**
- **Search Controller**
- **Channel Select Button**

**Description**

- **MENU**: Open menu
- **ENTER**: Apply Setup Change
- **SEARCH**: Control Playback Option
  (EX. Speed of Playback, Move on Menu, Control PTZ/Focus)
- **RETURN**: Cancel Setup or Return to Previous
- **Screen Mode**: Change Screen Mode
- **PTZ/IRIS Mode**: Open Search Mode

**Channel Select Button**
(4ch Available, #1~4 Button)
3.1 Hard Disk Installation

1. **Jumper Setup Master or Slave**
   - Jumper Setup as Master or Slave refer to explanation of surface Hard Disk.
   - Jumper is located at Hard Disk data cable or rear side of Hard Disk.
   - If one Hard Disk installation, setup as Master.
   - If two Hard Disk installation, second one setup as slave.

   "!! When Hard Disk add or exchange, must system off properly (power button system off) if not, it a cause of fatal error of disk."

2. **Example of Samsung HDD Jumper Setup**

   - Refer to general pin setting in jumper pin setting on HDD Surface.
   - When one HDD installed, setup pin as Master and connect Pin at the left end of jumper.
   - When two HDD installed or add HDD, one is for Master and The other is for Slave. Slave setup has No pin.
   - When more than two HDD installation, setup as Master & Slave to connect one IDE cable the same method of above.

   "!! Please use HDD which can supply higher than UDMA66 !!"

3. **IDE Cable Connection to Main Board**

   - Confirm the IDE cable inside of product.
   - Among the three connector, indicated blue color Connector must be connected with main board, Other connectors connected with HDD.
3. **Connect IDE cable to Hard Disk**

- Insert disk, red cable head to power cable plug
- Connect power cable to Hard Disk in the same way
- Pin at the left end of jumper.
- If one HDD install, connect with end of connector (Black) recommended.
- If add HDD, connect with middle connector (Gray) Recommended.

---

Tip

Master, Slave?

IDE Hard Disk can connect two equipment at one Cable (port). For the purpose of prevent confusing, two equipment named Master & Slave. Master is one Hard Disk or first Hard Disk, Slave is below second Hard Disk.
• Video Installation

3.1 Hard Disk Installation
Connect camera at BNC port in back side panel.

3.3 MONITOR CONNECTION
Connect Monitor terminal or S-VHS to Monitor.

3.4 COMPUTER CONNECTION
Connect VGA out to computer monitor.

3.5 NETWORK CONNECTION
Connect Ethernet terminal and network cable to Internet.
3.6 ALARM / RELAY / PTZ CONNECTION

① ALARM
Alarm Input - 1N1, 1N2, 1N3: connect sensor input by channel
GND: Connect to Ground system.

② RELAY
Alarm Output NO, NC: After checking Alarm output type (Normal Open or Normal Close) and connect to NO, NC.
COM: Connect remain grounding conductor.

③ RS-485
Connect PTZ camera D+, D-: Connect PTZ camera control line (+, - terminal)

3.7 POWER CONNECTION

3.8 FINISHING CONNECTION
**System Power On**

**Hard Disk Format**

- If do not new Hard Disk format, system can't recognize the HDD.

So there is same situation of No HDD, please format HDD when insert new HDD

(Only Display possible, not work Menu & Search)

1. Power On

Checking Hard Disk Drives ...
Disk0 [SANSUNG SP0002N]
Total 1 Hard Disk Drive Found.
New System Disk Detected.
All Disks will be formatted.
Format All Disks? NO (0)

2. New HDD Format

(Select Play, Backward Play key)

3. System Start

(Initial Mode)

SETUP
User Administrator
Password
4.1 SYSTEM POWER ON

- Press Power button to start system
- After checking Hard Disk, need input password to operation.
- Initial screen view mode is quad division mode and recording mode.

Picture Power On
After finishing installation

- Each channel indicate camera Name & Recording Status.
- Present Time & Date indicate at monitor central Lower side.

Tip

Check System Condition at LED
POWER : Showing System On/Off
RECORD : Showing Record On/Off
NETWORK : Showing Client Connection Status
ALARM : Lighting when Sensor Alarm Activate

4.2 SELECT SCREEN MODE

- Select one channel among 4 channels
- Move to one enlargement watch mode when Quad Screen division mode.
- Move to one enlargement watch mode when Rotation mode.
4.3 Convert Screen Mode (SCR MODE)

- User can select 3 kinds watch mode:
  - Quad (4CH) division watch mode
  - Selected 1CH watch mode
  - 4CH rotation watch mode
- Quad (4CH) watch mode is initial mode when system start

4.4 PTZ / FOCUS CONTROL

- Control camera PTZ (Pan/Tilt/Zoom) & Focus (Only Useable for proper camera).
- Press PTZ/FOCUS button to open PTZ Menu at right-Nder side and control by search controller.
- Press PTZ/FOCUS button second time to open focus /IRIS Menu and control by search controller.
4.5 SYSTEM POWER OFF

- Press Power button to system off
- Input Password and press Enter to shutdown system.

Tip

- System Log-on password: Administrator, Manager, Operator, Network
  Administrator: All function access (system on, shutdown, stop, search)
  Manager: System on and Search
  Operator: System On
  Network: Connect by remote program
Go to Search Mode

- Press search button and Log-in Administrator or manager
- Use direction key to move menu
- To open each menu press enter
- Return to Previous
  (Move to previous Menu or Exit Search Mode and return to watch mode)

5.1 SEARCH BY DATE/TIME
- Possible to Search Recorded Date & Time

- Move cursor to selected date in calendar
  (Recorded Date & Time indicated by gray color)
- Press Enter to open selected date
- Recorded Time appear to under side
- Press Enter at selected time
  (One scale is 15 minutes)
- Menu disappear and output recorded video

- Showing recorded Date & Time at left-upper side as watch mode.
  Showing playing condition at right-under side.

- Channel selection button in watch mode & SCR Mode button are apply the same as search mode.
  (but Menu, Search, and PTZ/FOCUS buttons are Exception)
**SEARCH**

- **Control Playing Video**

  1. : Basic playing mode (normal speed (1x) forward playing)
  2. : Normal speed backward playing
  3. : Pause video
  4. : Fast forward (2 ~ 64 speed)
  5. : Fast backward (2 ~ 64 speed)
  6. : Same function as 4 ~ 5

  > Press normal forward backward button in pause. Move to next / previous frames

5.2 **SEARCH BY EVENT** - Searching video with event occurrence to setup period

- Setup period to select start date & finish date for searching event.
- Alarm: Searching alarm event during the selected period.
- Motion: Searching motion detected event during the selected period.
- Timer: Searching schedule change or recording setup change event.
- System: Searching power On/Off event (Etc.) Concerned system event.
- Event list showing at below output window

**Tip**

Alarm, Motion, System can be select plural by check (V)-(Enter)
To change setup, press enter and press direction key
After changing setup, Press enter to exit.
### SEARCH

- **Date**: Indicate event occurrence order & date.
- **Time**: Indicate event occurrence time.
- **Event**: Indicate event contents & cam No.

#### Event searching method
- User can search event by direction key.
- Search event to please enter at selected event from event occurrence time.
- Control video is the way as time move control.

#### Tip
The search by event is not base on video, but event occurrence Time.

---

**EVENT VIEW**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005.01.31</td>
<td>11:00:41</td>
<td>Rec. Start Schedule CH1</td>
</tr>
<tr>
<td>2005.01.31</td>
<td>11:00:41</td>
<td>Rec. Start Schedule CH2</td>
</tr>
<tr>
<td>2005.01.31</td>
<td>11:00:41</td>
<td>Rec. Start Schedule CH3</td>
</tr>
<tr>
<td>2005.01.31</td>
<td>11:00:41</td>
<td>Rec. Start Schedule CH4</td>
</tr>
<tr>
<td>2005.01.31</td>
<td>11:00:41</td>
<td>Camera CH1 OFF</td>
</tr>
<tr>
<td>2005.01.31</td>
<td>11:00:41</td>
<td>Camera CH2 OFF</td>
</tr>
<tr>
<td>2005.01.31</td>
<td>11:00:41</td>
<td>Camera CH3 OFF</td>
</tr>
<tr>
<td>2005.01.31</td>
<td>11:00:41</td>
<td>Camera CH4 OFF</td>
</tr>
</tbody>
</table>
**MENU**

**Go to Menu**

- Press menu button on front panel in watch Mode.
- Ask password
- Input password using by channel select Button [1] [2] [3] [4].
- After input password press Enter to see Menu

---

**Tip**

- Initial Administrator, User, Network password is 1234.
- Showing password as *.
- Changing password (Menu->6.system->4.password)
- Only watch mode can go to Menu.
  (Search & PTZ/FOCUS mode can not move to Menu)

---

**Menu Initial**

- Every system setup can change or Maintain at Menu (6 setup).
- Move to Menu using by up & down button.
- To open detail Menu Or to apply input.
- Return to previous Menu Return to watch mode.

---
6.1 DISPLAY
- video setup for display mode

1. Date / Time : Date & Time mark On/Off
2. Title : Camera name On/Off
3. Status : Record condition mark On/Off
   (Recording : Red, Pre-recording : green)
4. Border : Border mark On/Off
   When 4CH division watch mode
5. Border color : Select border color
   (White, Blue, Red, Yellow, Green, Gray)
6. Sequence dwell : setup rotation cycle time
   (1~60 sec) when 4CH rotation mode at Display
7. Spot-out dwell : setup spot-out time cycle
   (1~60 sec) to transmit video
8. Deinterlace mode : Remove screen spread on
   High resolution, Low frame
   Only applying when D1 (704x480)

6.2 RECORD
- Setup image record

6.2.1 Size/Rec. Rate/Qality Setup Recording Resolution, Compression Rate, quality

- Camera : Indicate Camera No. To Setup
- Size : Setup Resolution
- Rec.Rate : Setup Compression Rate
- Quality : Setup Quality of Recording Video
2.1 Size/Rec. Rate/Quality

- Size: 352x240, 702x240, 702x480
- Rec. Rate: Possible to select 1 ~ 30
- Quality: 3 Levels (High, Low, Standard)

- Indicate frame No. On Size & Rec, Rate
- If frame over, showing the message and Impossible to change Size & Rec and Rate

Tip
- When setup please refer to below NTSC & PAL type
  NTSC: 352x240 (120fps), 704x240 (60fps), 704x480 (30fps)
  PAL: 352x240 (120fps), 704x240 (60fps), 704x480 (30fps)
- Possible to setup Size & Rec. Rate. Quality per each channel
- When applying change setup. Press Enter.
  When cancel change setup. Press Return.

6.2.2 Timer Recording Setup - Record On/Off or Time, Motion Setup

- Camera: Indicate camera No. To setup
- Record: Record On/Off
- Start: Setup Recording start time (0~24 hr)
- Stop: Setup Recording finish time (1~24 hr)
  * Recording time is between start time and Finish time.
- Motion: Motion detection recording On/Off
  (Record setup must be On, when motion detection recording).
6.23 Motion Detection Setup - Motion Detection Area & Sensitivity

- Camera: Indicate camera No. To Setup
- Sensitivity: Control Sensitivity (1~100)
  Large No. Is more sensitive.
- Region: Setup motion detect range
  Entirely: Setup entire screen
  Partially: Setup partial screen
- When choose region as partially. Move to Partial range setup. Press Enter after Range setup to finish region setup.
- Pre-Motion Duration: Setup Pre-Motion (1~5 sec)
- Post-Motion Duration: Setup Motion detect Recording time after motion detected (5sec ~ 3min)

6.2.4 Alarm Recording Setup for Alarm Activated

- Camera: Indicate camera No. To Setup
- Record: Setup record On/Off when alarm Activated.
- Start: Setup alarm recording start time (0~24 hr)
- Stop: Setup alarm recording finish time (0~24 hr)
- Pre-Alarm Duration: When alarm recording. Setup start recording time before alarm activate (1~5sec)
- Post-Alarm Duration: Setup Alarm Recording Time after alarm activate (5sec~3min)

Tip Motion setup work by time schedule and alarm schedule work Independently.
**TIME RECORDING**

**Time Recording Weekly Setup**

1. **MOTION DETECTION SETUP**
   - Camera 1: Off, Weekly, Start N/A, N/A
   - Camera 2: Off, Daily, 0, 24
   - Camera 3: Off, Daily, 0, 24
   - Camera 4: Off, Daily, 0, 24

2. **Weekly Mode Setup**

3. **Scheduled Region Indicted Yellow**

4. **After Deselect Schedule, Activated region by press Enter and select Date &Time to move cursor.**

5. **Setup Date & Time schedule in the same way after finishing schedule setup. Press Return for Save & Exit.**

6. **Select All: Entire Region Select**
   - Deselect All: Cancel Region
   - Save & Exit: Save Changing Setup & Exit
   - Cancel: Cancel Changing Setup & Exit
**Partial Motion Region Setup**

- **None-Activage Move Cursor**
- **Activate Partial Setup Cursor**
- **Partial Setup Finish Cursor**
- **None Activate region**

1. **Region Initial View**
2. **Move Cursor by Direction key and press Enter at selected region**
3. **Press Enter again to see region as a blue color setup none-activated region**
4. **Press Enter again to see region as a blue color setup none-activated region**
5. **Press Return to select multi none activated region**
6. **Same method as 4, 5 possible to expand none activated region**
7. **For reducing the partial region cancel none activated region in same way as 4, 5**
8. **When finish partial region setup, press Enter to Save & Exit**

- **Select All**: Select Entire region
- **Deselect All**: Cancel region setup
- **Save&Exit**: Save the change setup & exit
- **Cancel**: Cancel change setup & exit
6.3 Camera Setup

6.3.1 Status / Title Setup

- Camera: Indicate camera No. to Setup.
- Status: Indicate camera status (Connected/Disconnected)
- Title: Setup camera name to show left upper side

Tip

- Title input method
  Using direction key. Up & Down keys for alphabet A~Z.
  Number 0~9 Left-Right keys for move to another letter.

6.3.2 Covert/PTZ Setup

- Camera: Indicate camera No. To setup
- Covert: Setup covert On/Off
  * What covert?
  When covert on watch mode. Display Video is hidden. But recording is on.
- PTZ address: Select PTZ camera address
- PTZ protocol: Select kind of PTZ camera
- Baud Rate: Setup PTZ communication Speed (2400.4800.9600 BPS)

* PTZ supplied protocol:
  Samsung (MRX-1000). Honeywell (GC/GMC 755 Zoom) Kalatel (KTB312). Panasonic (W-V-CS850,WV-CSR604), Pelco-D, Pelco-P.
6.3.3 Color Setup - Control Video Color

- Camera: Indicate camera No. To setup
- Bright: Control monitor bright
- Contrast: Control monitor contrast
- Color: Control monitor color
- Tint: Control monitor tint

* All setup possible to control 0 ~ 100

6.4 AUDIO

6.4.1 Audio Recording Setup

- Camera: Indicate camera No. For setup
- Audio Rec: Setup recording On/Off from external audio in terminal
- Audio Ch: Setup audio in terminal channel & audio output camera

Tip
- User can listen saved audio with saved video
- Audio check in search is possible only normal speed (1x)
  Forward playing at 1 Ch mode (audio recorded channel).
6.4.2 Live Audio Setup - Audio Out Setup

- **Live Audio**: Audio output ON/OFF
  - Live Audio output from audio in terminal
- **Monitoring ch.**: Select channel for audio output Nr. 1 ~ 4 Audio in.

6.5 Alarm - Setup Alarm & Relay

6.5.1 Alarm Input Setup - Alarm Sensor Setup

- **Alarm**: Indicate alarm input terminal No.
- **Status**: Setup alarm sensor connection status (Connected / Disconnected)
  - output Nr. 1 ~ 4 Audio in.
- **Camera**: Input camera No. 1~4 to connect alarm.
- **Type**: Setup alarm sensor N/Open. N/Close type.

**Tip**
- Generally alarm sensor can be divided two types.
  - Normal open type is open sensor electrically and reacted when signal is connected.
  - Normal close type is close sensor electrically and reacted when signal is disconnected.
6.5.2 Relay output setup alarm relay setup

- **Alarm**: Indicate alarm input terminal No.
- **Relay Out**: Setup relay connect with alarm sensor.
- **Mode**: Setup reacted relay time (5 sec ~ 5 min or until key-in).
- **Relay Type**: Setup relay type N/Open or N/Close.

### Tip
- **Latched / Transparent**
  Latched when sensor alarm activated. Relay reacted in setup duration transparent relay reacted temporary during sensor alarm activate.

6.6 SYSTEM

6.6.1 Date / Time Setup

- **Date**: Setup present date (yyyy-mm-dd).
  (If time setup to past date. Ask delete data for the past date. No -> Date/Time No change. YES-After deleted past data and change Date/Time)
- **Date Format**: Select date output type (E: 2004-00-00. 2004/00/00).
- **Time**: Setup present time.
- **Time Format**: Setup time type as 12 hour base or 24Hour base.
- **Daylight Saving**: Summer time applying status.
6.6.2 Network Setup

- IP Address: Input IP address.
- Gateway: Input gateway IP for internet server.
- Subnet Mask: Input subnet mask IP.
- Network speed: Setup network speed (Network speed from system. Depend on network status).

If change network setup. New change apply when after rebooting.

6.6.3 Buzzer Setup

- Alarm Input: Alarm On/Off when alarm activate.
- Videoloss: Alarm On/Off when camera disconnected.
- Disk Full: Alarm On/Off when hard disk full.
- Disk Error: Alarm On when hard disk Error.
- Key Input: Setup key input sound.

6.6.4.1 Administrator Password:
- Setup Menu & System On/Off

- Current Password: Input current password (Initial Password1234).
- New Password: Input new password.
- Re-enter the Password: Re-confirm new password.
- Save & Exit: Applying new password.
• Password Setup

6.6.4.2 Manager Password :
- Possible operating on Search, can not change the Setup

Current Password : Input current password
(Initial Password : 1234)
New Password : Input new password.
Re-enter the Password : Re-confirm new password.
Save & Exit : Applying new password.

6.6.4.3 Operator Password :
- Possible system on, but can not change Setup & Search

Current Password : Input current password
(Initial Password : 1234)
New Password : Input new password.
Re-enter the Password : Re-confirm new password.
Save & Exit : Applying new password.

6.6.4.4 Network Password :
- Setup remote connection program password

Current Password : Input current password
(Initial Password : 1234)
New Password : Input new password.
Re-enter the Password : Re-confirm new password.
Save & Exit : Applying new password.
6.6.5 Disk Write Mode - Setup Hard Disk

- **Disk Overwrite**: Select overwrite permission when Hard Disk is full.
  - **ON**: Overwrite Hard Disk from oldest data.
  - **OFF**: When Hard Disk full. Stop recording and Buzzer activate (refer to menu 6.3 buzzer setup).
- **Disk Initialize Now**: Refreshment Hard Disk all recorded data deleted.
  - When select disk initialize, alarm message showing select Yes to start disk initialize.

When change disk overwrite ON/OFF mode, the change will be applied from change time. For example: When overwrite on mode & HDD full, change to overwrite off mode and then it will be applied new data fill HDD full after change time.

6.6.6 System Information - Product information (vision etc)

- **S/W Version**: Indicate software version of the product.
- **H/W Version**: Indicate hardware version of the product.
- **Video Signal Type**: Indicate video signal type
- **Disk Size**: Indicate hard disk capacity.
- **Number of HDD**: Indicate present installed HDD Number.
- **IP Address**
- **MAC Address**

6.6.7 System Information - Every Setup Initializing

- Press Enter to start initialize.
- Showing warning message and press OK to run Initialize.
- If do factory default, every setup is initialized, but saving image is not erased.
6.7 CD-RW BACK-UP

- Go to Menu
- Press Menu button on front panel
- Ask Password
- Input Password using channel select button [1] [2] [3] [4]
- After input Password press Enter to see the Menu

- Use the Up-Down button to move the Cursor to 7. Back Up icon.

- CD-RW Proceed
  1. CD-RW burner display
  2. Fill the start time in
  3. Fill the end time in
  4. Channel selection
  5. Video backup selection
  6. Audio backup selection
  7. Event backup selection
  8. Title backup selection

Note: Move to icon start and press Enter
To CD burning after all set.
Remote Agent

System Requirement

1. Main Board (CPU): Celeron 500-700 (Minimum), Pentium-4 recommend.
2. OS: More than Windows 98, DirectX 7.0A
3. Memory (RAM): More than 128M
4. VGA: Overlay Yv12 format graphic card

※ All Radeon, Nvidia (Above GeForce) Matrox (Above G400) compatible video card, above DIVX codec 5.1 (When use Media Player)

DVR Remote Agent 1.0 Install

Step1: Open CD and run DvrRemoteAgentSetup.exe

Step2: Close all running software and press Next
Step 3: Ask designate folder to install DvrRemoteAgent 1.0. Recommend basic setup Wprogram file WDvrRemote Agent 1.0 and click Next.

Step 4: Showing Process of Copy of Files.
Remote Agent

Step 5: Appear DirectX 7.0a Install Menu. If DirectX version lower than 7.0a, press Yes to start install.

Step 6: When Dinishing Installation, System must be Restarted. Click <Yes>.

Finish DvrRemoteAgent 1.0 Program Installation.
7.1 Monitoring

7.1.1 Function Introduction

1. Main screen image showing present surveillance camera image.
2. Camera selection button: Indicate connected camera No. & select image to click camera No.
3. Hide/Exit: Hide DVR client window or exit program.
4. Time Output: Showing present Time & Date.
5. Search: Move to search mode to play video.
   Setup: Move to setup to change network setup or option.
7. Connect: Connect server (DVR).
   Disconnect: Disconnect from server.
8. Screen Division Selection: Change screen division mode.
11. PTZ Control Button: Control camera PTZ & Focus.
### 7.1.2 Screen Division Selection

- **1x1 View**: Showing one (1) video which user selected (Selection video by camera selection button)
- **4x4 View**: Quad screen division mode.
- **Scenario View**: One large screen mode showing one by one (1x1 view) depend on User selection time (not work screen division mode).
- **Full Screen View**: Present video move to full screen mode mouse double click when return previous.

*Mouse double click make the same function as full screen.*

### 7.1.3 P/T/Z Control

- **P/T/Z Controller**: Camera P/T/Z control by direction keys.
- **Focus/Zoom Selection Button**: Focus or Zoom control by button.
- **+ - Control Button**: Focus or Zoom control.

### 7.1.4 Select Network I/D

- **Select I/D to connect server**
  - I/D can be added. Changed and deleted at setup.
- **Click network information icon**, to see a popup window for connected server I/D IP. And port information.
7.1.5 AVI File Conversion

- Click AVI conversion button to start AVI file conversion.
- During AVI conversion showing message and before click stop to save AVI file continuously.
- Press stop to open designate file name & saving location and save AVI file.
- Saved AVI file can open ordinary moving picture player.
- Moving picture player codec version is above Divx 5.1.

7.1.6 Color Adjustment

- Click controller possible to control color.
- Change brightness, Contrast, Saturation from 0 to 100.
- Click OK to finish changing setup.
7.2 Search mode

7.2.1 Function Indruduction

1. Search screen playing selected video.
2. Search Bar: Search & Indicate camera recording situation by time bar.
3. Live: Return to Display mode.
   Setup: Open setup to change network setup or option.
4. Screen Division Selection: Change playing screen division mode.
5. Search Option: Backup video or search event.
6. Camera Selection Button: Select camera at the 1x1 view.
7. Quick Search: Find image to designate Date & Time.
8. Search Controller: Control playing video.
7.2.2 Search Method

1. Indicate 0~24 Hour
2. Indicate recording situation (Blur: No Record, Yellow: Recorded image at the time)
3. Search Bar: Select video to drag mouse search controller recorded area
4. Indicate camera channel to confirm camera recording situation
5. Refreshment recording information situation window by camera channel
6. If connected channel is 5 or more, Another channel will be scroll

Click Day setup and select day on calendar
Search bar will move if input Day & Time
Play video as normal speed (1x)
Stop play video
Program Exit
7.2.3 Search Option

- **Backup**: Backup Image from server to remote PC

- **Backup Time**: Designate backup time (Now or Later)
- **Designate backup Date&Time when later or Later**
- **Source**: Designate backup image data length to Input Start Time & End Time.
- **Channel**: Check camera channel for backup or Later
- **Select All**
- **Deselect All**

- Press OK to Open Backup Status & Start Backup.

- When Finish Backup. Back Status Window Disappear & Backup Data Save at Hard Disk Root Folder in Remote PC.
**Client Search**

**Backup Play (DVR Player): Transfer to DVR Player**

1. Showing image (possible to only 1x1 view mode).
2. Backup file open to play first video.
   
   Ex.: ch02_050131730_0502021735.rec (Backup file for # Ch2. Jan. 31 07H30M ~ 17H35M)
3. Indicate present playing video camera channel No.
4. Indicate present Time & Date and possible to search Time & Date.
5. Search Controller, the same way of previous search.

**Tip**
Backup Play Setup in Search Mode is the Same as DVR Player, so it can be Run Independently without Running Remote Program.
Client Search

- **Save Image Capture Image & Saving Image at Hard Disk or Removable Disk**

  - Click save image icon during playing video.
  - Designate file name. File type (JPG, GMP) and location and press Saving.
  - Conversion and saving image from Remote Viewer.

- **Print Image Present Image Capture and Print Out Image**

  - During play video. Click Print Image.
  - After selecting printer. Start image printing.
  - Print out Remote Viewer image.
1. Input Start Time and End Time at the selected date to Search Event.
2. When press Search button. Event output at the below window.
3. Indicate Event Log order No. (Max Event Log No. Of 1 page is 100).
4. Indicate Event occurred camera No.
5. Indicate Event occurred Time & Date.
7. Move to previous page.
8. Move to user select page.
9. After select event. Move search bar in search mode.
10. Return to search main to play event image.
Event Viewer Showing Present Event in Server & Find Image.

1. Indicate event occurred order No.
2. Indicate event occurred camera No.
3. Indicate event occurred Time&Date.
4. Indicate event detail description.
5. After select event. Move search bar in search mode.
6. Return to search main to play selected event image.
7.3 IP Setting

7.3.1 Connection ID Setup

1. ID Status: Indicate present saving ID & ID information.
2. Input name to add or amend ID.
3. Input IP address to add or amend server.
4. Indicate port No.
5. Input ID for connecting server.
6. Input Password for connecting server.
7. Click to input new ID information.
8. After input all ID information. Add ID information at ID status.
10. Selected ID delete at ID status.

Tip
Initial ID & Password is NETWORK & 1234
7.3.2 Option Setting

1. Control screen rotation time in scenario mode at watch mode (Possible to setup from 1~300 sec.)

2. Possible to select event kind plurally from server, remote client only can see selected event (System, HDD, Alarm, Video, REC).

3. Setup print-out image of information display from server (Name, Date, Resolution).

4. Designate backup image saving folder at remote PC.
## Time Table

### DVR Storage Capacity Calculation (Based on 80GB HDD)

#### Calculation

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Image Size (KB)</th>
<th>Fps</th>
<th>Second</th>
<th>Minute</th>
<th>Record Hours Per Day</th>
<th>Number of Cameras</th>
</tr>
</thead>
<tbody>
<tr>
<td>352x240 (CIF)</td>
<td>3.5 (Highest)</td>
<td>30</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>352x240 (CIF)</td>
<td>2.6 (High)</td>
<td>30</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>352x240 (CIF)</td>
<td>1.6 (Standard)</td>
<td>30</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>352x240 (CIF)</td>
<td>1.1 (Low)</td>
<td>30</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x240 (2CIF)</td>
<td>8.5 (Highest)</td>
<td>15</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x240 (2CIF)</td>
<td>6.8 (High)</td>
<td>15</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x240 (2CIF)</td>
<td>4.3 (Standard)</td>
<td>15</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x240 (2CIF)</td>
<td>2.7 (Low)</td>
<td>15</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x480 (D1)</td>
<td>37 (Highest)</td>
<td>7</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x480 (D1)</td>
<td>30 (High)</td>
<td>7</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x480 (D1)</td>
<td>19 (Standard)</td>
<td>7</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x480 (D1)</td>
<td>12.5 (Low)</td>
<td>7</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x480 (D1)</td>
<td>52 (Highest)</td>
<td>1</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x480 (D1)</td>
<td>37 (High)</td>
<td>1</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x480 (D1)</td>
<td>32 (Standard)</td>
<td>1</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>704x480 (D1)</td>
<td>27 (Low)</td>
<td>1</td>
<td>60</td>
<td>60</td>
<td>24</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Result

<table>
<thead>
<tr>
<th>Required Storage Capacity (GB)</th>
<th>Time to HDD Full (About)</th>
</tr>
</thead>
<tbody>
<tr>
<td>36.2</td>
<td>80/36.2 ≈ 2.2 Days</td>
</tr>
<tr>
<td>26.9</td>
<td>80/26.9 ≈ 2.9</td>
</tr>
<tr>
<td>16.5</td>
<td>80/16.5 ≈ 4.8</td>
</tr>
<tr>
<td>11.4</td>
<td>80/11.4 ≈ 7</td>
</tr>
<tr>
<td>44</td>
<td>80/44 ≈ 1.8</td>
</tr>
<tr>
<td>35.2</td>
<td>80/35.2 ≈ 2.2</td>
</tr>
<tr>
<td>22.2</td>
<td>80/22.2 ≈ 3.6</td>
</tr>
<tr>
<td>13.9</td>
<td>80/13.9 ≈ 5.7</td>
</tr>
<tr>
<td>89.5</td>
<td>80/89.5 ≈ 0.8</td>
</tr>
<tr>
<td>72.5</td>
<td>80/72.5 ≈ 1.1</td>
</tr>
<tr>
<td>45.9</td>
<td>80/45.9 ≈ 1.7</td>
</tr>
<tr>
<td>39.2</td>
<td>80/39.2 ≈ 2.6</td>
</tr>
<tr>
<td>17.9</td>
<td>80/17.9 ≈ 4.4</td>
</tr>
<tr>
<td>12.7</td>
<td>80/12.7 ≈ 6.2</td>
</tr>
<tr>
<td>11</td>
<td>80/11 ≈ 7.2</td>
</tr>
<tr>
<td>9.3</td>
<td>80/9.3 ≈ 8.6</td>
</tr>
</tbody>
</table>
### PTZ Protocol List

Present DVR Supply Only PTZ/FOCUS/IRIS Function. (Planning other features)

<table>
<thead>
<tr>
<th>MAKER</th>
<th>MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMSUNG</td>
<td>MRX 1000</td>
</tr>
<tr>
<td>PELCO</td>
<td>PELCO-D, PELCO-P</td>
</tr>
<tr>
<td>HONEYWELL</td>
<td>GC/GMC-755 ZOOM, SD1 SPEED DOME, SCAN DOME II</td>
</tr>
<tr>
<td>KARATEL</td>
<td>KTD-312</td>
</tr>
<tr>
<td>PANASONIC</td>
<td>WV-CS850, WV-CSR604</td>
</tr>
<tr>
<td>SENSORMATIC</td>
<td>ADPT8</td>
</tr>
<tr>
<td>VICON</td>
<td>CC-100P</td>
</tr>
<tr>
<td>SUMIN</td>
<td>DSC-230</td>
</tr>
</tbody>
</table>
**PTZ Control**

- **PTZ Control**
  - Press PTZ/FOCUS button to open PTZ Menu at right-under side and control by search controller.
  - When press PTZ/FOCUS button by turns, FOCUS/IRIS Preset, Swing Menu will appear at the right-under side and possible to control by search controller.

**Search Controller**

2. Zoom in & out by button "Fast Backward".
**Preset Control**

- **FOCUS / IRIS Control**
  1. Control Iris by "Faster", "Slower" button
  2. Focus On by "Backward Play", "Play" button.
  3. Zoom In & Out by "Fast Backward", "Fast Forward".
  4. Keep press button to make continuous movement.

**8.1 Preset Control**

1. By Preset Function, possible to setup direction and Focus of PTZ Camera.
2. After selecting position at PTZ Control Mode, save data at Preset Mode.
3. Setup Number from 1 ~ 123 by Faster & Slower button.
4. Save by Front Panel Key No.1 Button or F1 Button on Remote Controller.
5. To move to saved location. Press Front Panel Key Button No. 2 or F2 on the Remote Controller.

**8.2 Swing Control**

1. Swing Function dedicate each No. Of saved Preset and Swing as Pan or Tilt.
2. Changing mode by Backward Play button. Changing setup by Faster, Slower button.
3. Pan Swing Mode: Rotate Left, Right side.
   Tilt Swing Mode: Rotate Up, Down side.
   Start Preset: Select Starting point. (1 ~ 123)
   End Preset: Select End point. (1 ~ 123)
   Swing Time: Select halt time as each point. (1 ~ 64 sec.)
   Swing Speed: Select moving speed of camera. (1 ~ 64)
4. Save by Front Panel Key No.1 button or F1 button on Remote Controller.
5. For start Swing Mode. Press Front Panel Key No.2 or F2 button on Remote Controller.
Cross Cable Making Tip

LAN Plug
Pin: 1 ~ 8

LAN Cable

1. Connect LAN Cable Part-A and LAN plug by order as one to one.
3. Connect LAN cable Part-B No. 3 to LAN plug No. 1 and connect the next by order.