QUICK MANUAL

Digital Hard Disk Recorder

(UDR-204 & UDR-204C, MPEG-2)

WARNING   To prevent fire or shock hazard, do not expose the unit to rain or moisture.

The symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the unit.

The symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELEC-
TRIC SHOCK, DO NOT REMOVE
COVER(OR BACK), NO USER-
SERVICEABLE PARTS INSIDE,
REFER SERVICING TO QUALI-
FIED SERVICE PERSONNEL.

CAUTION:
To prevent electric shocks and risk of fire hazards, do NOT use other than specified power source.

Warning -- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at its own expense.

Warning – If TIMEKEEPER NVRAM IC that is consist of RTC, SRAM, POWER-FAIL CONTROL CIRCUIT and BATTERY is replaced, the replacement is to be done by a trained technician with the same type of component.

Caution -- Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Warranty will be made void if the product is disassembled or manipulated by the user.

Safety Instructions

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings.

   Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators,

   heat registers, stoves, or other apparatus (including amplifier

   that produce heat.

9) Do not defeat the safety purpose of the polarized or groundir

   type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has

   two blades and a third grounding prong. The wide blade or the third prong is provided for your safety.

   If the provided plug does not fit into your outlet, consult an electrician for replacement of the

   obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience

receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold

with the apparatus. When a cart is used, use caution when moving the cart/apparatus

combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus

has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been

spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or

moisture, does not operate normally, or has been dropped.

1. Packing list

The following items are included with the UDR-204 or UDR-204C. Please be certain that all items are included as soon as you open the box:

1.1 Components

- UDR-204 (Removable HDD Rack) or UDR-204C (CD-RW Driver)
- Power cable
- DSUB-15 connector for PTZ / AUX / ALARM
- Quick Manual
- Software CD (RAMS, UniPlayer, MultiViewer, QuickInstaller and Operation Manual)
- Removable external Hard disk drive rack, key & screws

1.2 Options

- Remote control (two battery included)
- Hard disk drive (Option or included)

Features & specifications

1.3 Features

- 4-channel Embedded Digital Video Recorder
- MPEG-2 compression
- Quadplex mode for simultaneous recording, playback, backup, and networking
- Live remote viewing, on-the-fly recording, and control over the network
- Dynamic IP support (DHCP & PPPoE)
- Alarm triggered FTP and E-mail alert function
- Motion detection, Video loss, and sensor alarm function
- User defined setting for recording frame rate & resolution
- Various backup method support
  (Removable HDD (UDR-204), CD-RW(UDR-204C) USB, Network)
- Selectable QUAD/MUX recording
- Audio recording available
- Multiple recording modes: Time lapse, Event(Motion, Sensor), schedule, manual, & continuous recording
- Still image capture and search function
- Convenient search by alarm, time, or date
- Quick and responsive playback & field-by-field viewing with the Jog/Shuttle dial
- Watermarking (Backup)
- PTZ control through RS-485
- Quick & easy setup through RS-232
- Remote controller available (optional)
- Dual video modes : Selectable NTSC & PAL
- Rack mountable : 2U
- Free voltage power input (100 - 240VAC, 50Hz/60Hz, 50W)

1.4 Specifications

Item		Description
Image System		NTSC, PAL selectable
Video Input		4CH Composite, 4CH Loop through, BNC
Video Output		1CH Composite, BNC, 1CH S-Video
Video Compression		MPEG-2
Recording Resolution	Quad	NTSC: 720x480 (30fps) PAL : 720x576 (25fps)
	MUX	NTSC: 720x480 (30fps), 360x240 (120fps) PAL : 720x576 (25fps), 360x288 (100fps)
Recording Quality		4 Levels (Normal, Enhanced, Fine, Super Fine)
Recording Speed		NTSC: 1/30,1/15,1/10,1/7,1/5,1/3,1/2,1 (8 Steps) PAL: 1/25,1/12,1/10,1/6,1/5,1/3,1/2,1 (8 Steps)
Playback Type		Quad / Mux
Playback Search		Date/Time, Event (Alarm, Motion detection)
Playback Speed		x1/4,x1/2,x1, x2, x4, x8, x16, x32, x64, x128, Field by Field (Forward/Backward)
Sensor Input		4 (NO/NC Selectable)
Alarm Output		1 (NO/NC)
Aux Control In/Out		2/3 (Selectable Function Menu) Alarm Reset In, Record Start In, Record ON/OFF, Alarm Out, Error Out, Record Start Out, Disk Full Out, Record Status Out
Audio		1CH, mono, mute
Network		10Base-T (STATIC,DHCP, PPPoE, E-mail, & FTP)
Motion Detection		11x8, 8 Level Sensitivity
Hard Disk		Removable + Internal
Backup Method		Removable HDD (UDR-204), CD-RW(UDR-204C), USB Memory, Network
Watermarking		Backup
PTZ Control		RS-485
System Log		Video Loss, Power On, Power Off, Menu Called, HDD Full, FTP Fail, E-mail Fail, etc
Password Function		Power ON/OFF, MENU, Record OFF, Key Lock
Digital Zoom		x 2
Timer		Built-in Real time clock
Power Source		Free Voltage (100 - 240VAC, 50Hz/60Hz, 50W)
Dimension		433(W) x 385(D) x 88(H)
Operating Temperature		5℃ ~ 40℃
Weight		5.5Kg (w/o HDD)

* Design and specifications are subjected to change without notice.

2. Name, function & connections

2.1 Front view
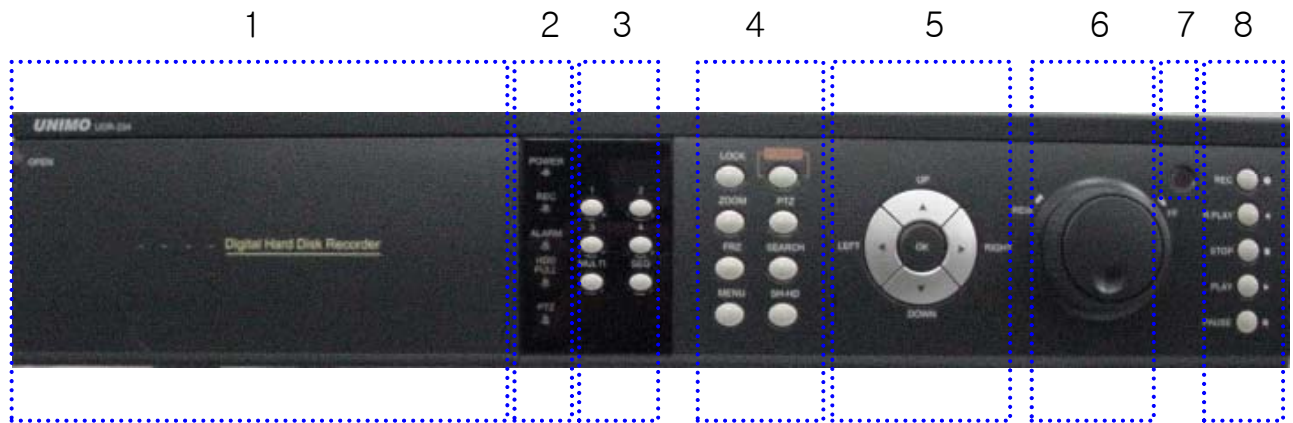
Description:

1. Removable HDD Rack (UDR-204) or CD-RW Rack (UDR-204C)
   - Removable Hard Disk Drive or CD RW Drive

2. LED indicator
   - POWER: Power Off status is indicated by a Red light and ON status is indicated by a Green light.
   - REC: Green light (Recording)
   - ALARM: Green light (Alarm triggered)
   - HDD FULL: Green light (No more disk space for recording)
   - PTZ: Pan, Tilt, Zoom, Focus status is indicated by Green

3. Numeric button - Live Viewing mode button
   - 1, 2, 3, 4: Channel selection for Live Viewing and Playback mode. Used to input password.
   - MULTI: Multi-view. View all four channels in the same window in live viewing or quad playback. Select all sections for Motion Detection Zone
   - SEQ: Sequential view. View all active channels sequentially. Release all sections for Motion Detection Zone

4. Function button
   - POWER: Press this button to power ON/OFF
   - LOCK: Press this button to lock/unlock the buttons of DVR
   - ZOOM: Zoom In/Out on the images during Live Viewing.

- ● FRZ :　　Freeze.
  - Press button once to freeze the frame at live mode. Press again to return.
  - To take a still image capture at playback mode.
  - Exchange of video input type : Press power button with FRZ button from NTSC to Pal or PAL to NTSC.
- ● MISC/SH: Miscellaneous functions or Shuttle Hold.
  - MISC: To substitute for the five buttons that are placed on the remote control but on the keypad (NET, OSD, Audio Mute, HDD, LOG).
  - SH: Press button while using the Shuttle to hold the speed.
- ● SEARCH: Press once to open the menu to search for recorded files.
- ● PTZ:　　Pan/Tilt/Zoom.　Press once to access the Pan/Tilt/Zoom/Focus control mode. Press again to exit.
- ● MENU:　Press button to access Main Menu.　Press again to return.

5. Direction/select button
- ● UP:　　　Used to move the cursor up; change possible values in the setup menu; under PTZ control sub menu, used to move camera; or used to adjust focus.
- ● DOWN:　Used to move the cursor up; change possible values in the setup menu; under PTZ control sub menu, used to move camera; or used to adjust focus.
- ● LEFT:　Used to change possible values in the setup menu. Under PTZ control menu, used to move the camera left or used to do Zoom Out; At playback mode, used to decrease playback speed.
- ● RIGHT:　Used to change possible values in the setup menu. Under PTZ control menu, used to move the camera left or used to do Zoom In; At playback mode, used to increase playback speed.
- ● OK:　　　Used as a selection key. Under PTZ control menu, used to be interchanged P/T mode with Z/F mode

6. Jog/Shuttle
- ● Shuttle:　Multi-speed forward/reverse playback. Under Network Setup sub menu, used to input parameters fast.
- ● Jog:　　Frame by frame search.

7. IR receiver
- ● Remote control signal receiver

8. Recording/Playback buttons

- ● RECORD: Press once to begin recording all active channels.   Press again to end recording.
- ● R-PLAY: Reverse Playback.   Press to begin reverse playback. Under PTZ control menu,
  used to decrease the speed of Pan, Tilt, Zoom, Focus.
- ● STOP: Stop playback.
- ● PLAY: Access to playback.
  - Playback button will activate assigned starting position and Channel at playback setup of
    menu.
  - At pause mode, it will release pause mode.
  - Under PTZ control menu, used to increase the speed of Pan, Tilt, Zoom, Focus.
- ● PAUSE: Press to freeze the picture at playback mode.

2.2 Rear panel view
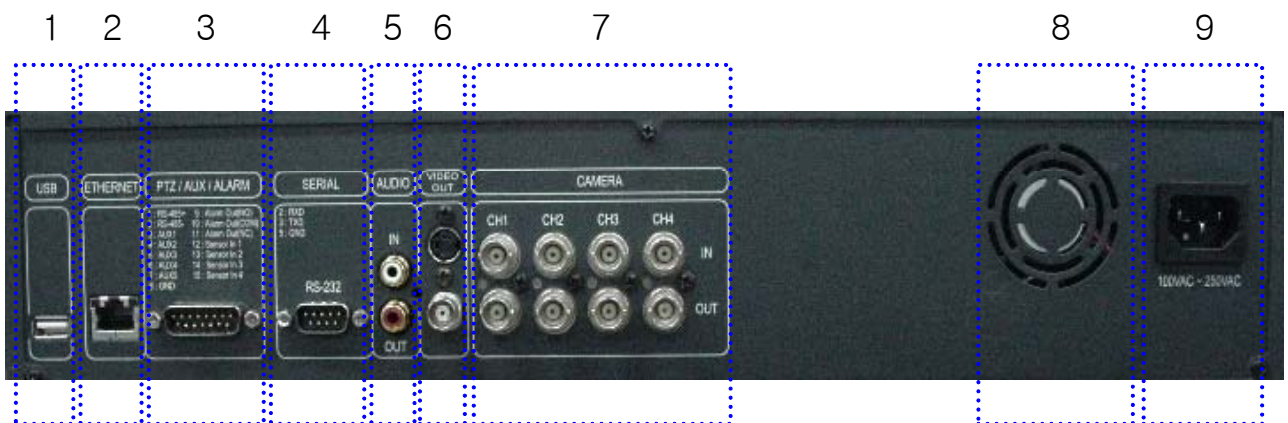
1. USB

- ● Connect USB flash drives for backing up stored video files.

2. ETHERNET

- ● Network terminal for 10Base-T (RJ-45)

3. PTZ/AUX/ALARM

- ● Terminal for PTZ, sensor, alarm, and AUX IN/OUT (DB-15 Male Connector)

4. SERIAL

- ● Serial terminal for RS-232C (PC) for console or quick installation
  (DB-9 Male Connector)

5. AUDIO

- ● IN: Audio line input
- ● OUT: Audio line output

6. VIDEO OUT

- Terminals for composite video and s-video to connect with monitor

7. CAMERA

- IN: Video input (to connect with camera output)
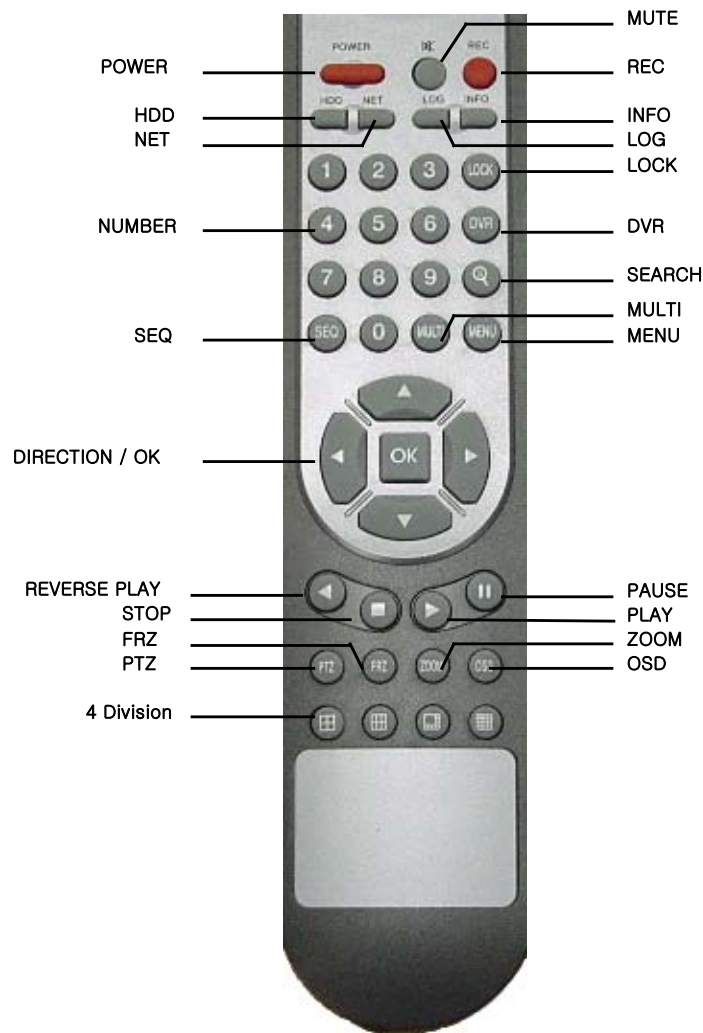- OUT: Video output (Loop-through output for video input)

8. FAN

- Heat protection fan to reduce heat in the unit

9. POWER INPUT

- Power cord terminal (free voltage, 100 - 240VAC, 50Hz/60Hz)
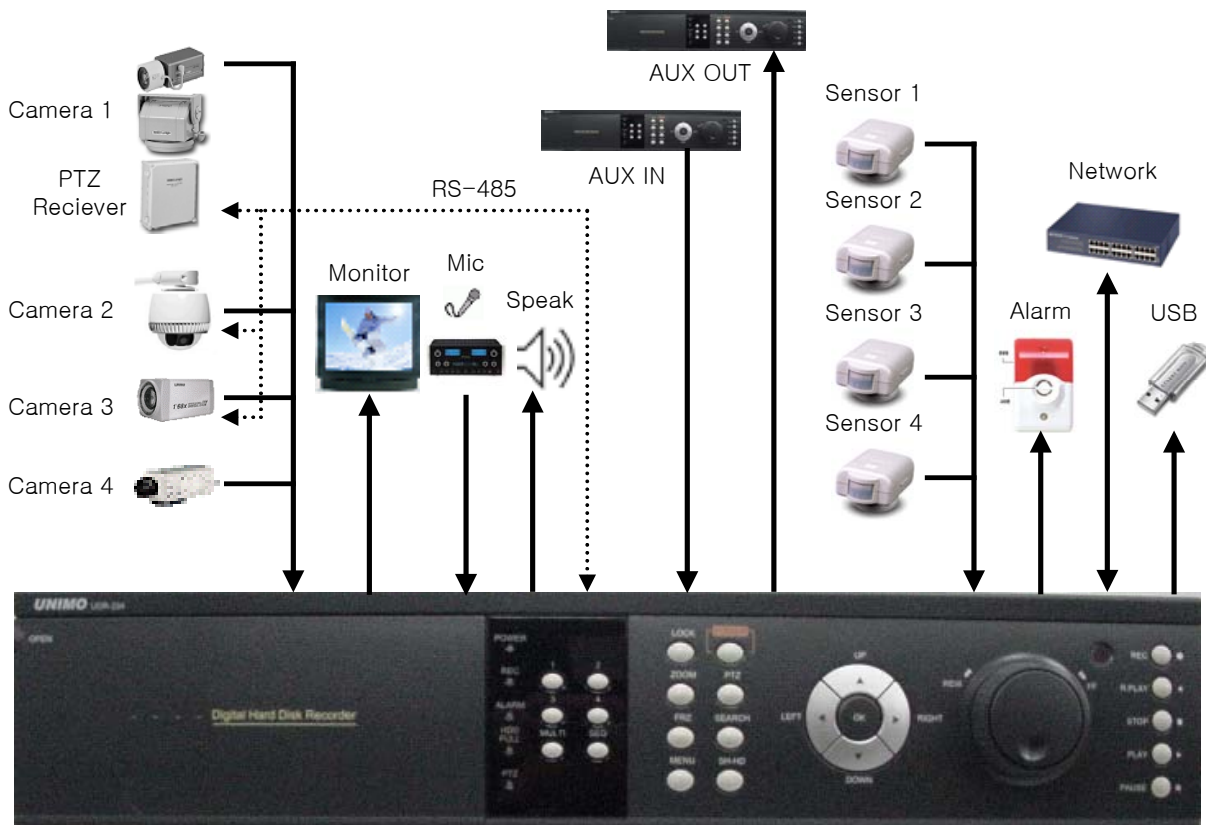
2.3 Remote control function

- MUTE: Audio Mute

- HDD: HDD status information
- NET: Network connection status & user connection information

- INFO: Hardware & Software version

3. INSTALLATION

3.1 Installation and connection

3.1.1 Camera

The unit comes with 4 video IN and 4 video OUT for up to four camera connection.   Connect to 'IN' terminal for video input and to 'OUT' for loop-through output.

When connecting the BNC cable to 'OUT', be sure that the BNC
cable connects to a display monitor or other types of video equipment for termination.

3.1.2   Video Out

The unit has one composite video output and one S-video output.

Use either output for display monitors.

3.1.3   Audio

Use IN for a Line input and OUT for speaker output.

3.1.4   RS-232

Use this connector to connect RS-232 cable to the serial port on your PC to control the DVR or to perform Quick Installation.

3.1.5   PTZ/AUX/ALARM

3.1.5.1 RS-485+, RS-485-

UDR-204 uses RS-485 protocol to control PTZ Receiver, Speed Dome, and Auto-focus camera.   Be sure to match the polarity.

3.1.5.2 AUX 1~5

AUX Port consists of 2 input ports (AUX 1,2) and 3 output ports (AUX 3,4,5) and the function of each port is selectable according to user's purpose, user's access to external DVR, or controllers using the supplied DB-15 connector.

3.1.5.3 Alarm Out (NO, COM, NC)

The Alarm output is activated using a relay contact point when an alarm event occurs for the duration of the alarm event.

Select from Normal Open Relay or Normal Close Relay.

N.O. (Normal Open) is disconnected from COM during normal status and connected to COM during alarm event. N.C (Normal Close) is connected from COM during normal status and disconnected to COM during alarm event.

3.1.5.4 Sensor 1~4

Users can connect up to four N.O./N.C. type sensors and configure them within Main Menu, Sensor Setting.

3.1.5.5 Network

Connect RJ-45 Ethernet cable.

3.1.5.6 USB flash memory

Perform backup of recorded video files from DVR system to USB flash memory manually.

4. Basic operation procedures

4.1 Power On/Off

4.1.1 Power on

Using either the keypad or the remote control, press the "Power" button.　(Note:　In case of power outage or rare instance of system failure, the DVR will reboot automatically)

The Power LED light will turn from red to green when it has turned on properly.

In a standby mode, the LED is red.

4.1.2   Power OFF

In order to shutdown the system, you must type in the password.   The default password for shutdown is "**111111**".

4.2 Date & time setting

Set the date and time for the DVR.

(**System Setup in Main Menu → Time/Date**)

4.3 Password setting procedure

Select or change your password for the DVR.   The password must be a 6-digit number consisting of numbers 0 ~ 4.

(**System Setup in Main Menu → System Password**)

4.4 Network setting

There are three types of network setting for the DVR: Static, DHCP, or PPPoE.   Please set the network type.

(**Network Setup in Main Menu**)

4.5 Recording

Select recording related parameters in the Record Setup in the main menu.

4.5.1 There are two types of recording: MUX or QUAD type. For resolution, select either D1 (720*480 (NTSC), 720*576 (PAL)) or CIF (360*240 (NTSC), 360*288 (PAL)).   Audio channel is synchronized with the selected video signal. Select Video input quality, Frame rate, and recording mode.

4.5.2 Recording modes are made up of MANUAL, CONTINUOUS, MOTION, SENSOR, MOTION+SENSOR, and SCHEDULE mode. A red record light (●)   on the top right corner of each channel will indicate DVR recording.

In the MANUAL mode, the DVR starts to record on/off whenever the RECORD button is pressed.

4.6 Playback

4.6.1 Press the Play button

The DVR will playback either the first recorded file or the last recorded file according to the setting in the Playback Setup menu.

4.6.2 Audio files

You will hear audio when video files containing audio is selected for playback.

4.7 Search

4.7.1 Search mode

The UDR-204 has 3 types of search modes:

- SEARCH BY TIME: Displays recorded data by recording time and camera number.
- STILL IMAGE SEARCH: Displays recorded still images.
- BACKUP HDD SEARCH: Displays data list from the backup Hard Disk drive.

4.7.2 Search method

- When you press Search, select from three options listed: Search by Time, Still Image Search, & Backup HDD Search. A detailed search list will open. Press OK button to view the selected file.
- Use the Left/Right key to move page by page.   The Up/Down key is used to move between items on the same page.

4.8 Backup

The UDR-204 (UDR-204C) has various types of backup methods:

4.8.1 Removable HDD

- If there are two hard disk drives equipped in the UDR-204, the removable HDD will be used as a backup drive. MANUAL BACKUP, AUTO BACKUP will be selectable for backup.
- MANUAL BACKUP: Execute backup during user's preferable setting.
- AUTO BACKUP: Execute backup accordingly whenever new recording file was made.

4.8.2   CD-RW (UDR-204C)

● After inserting CD-Rom into CD-RW Drive, push Menu button & go to Backup menu, and

   back up the moving picture of HDD by CD-RW for the selected time.

● In the backup menu, select backup time → start backup,   and backup for capacity of CD RW.

The backed-up files can be play-backed by general Media player or by Uniplayer

4.8.3   USB flash memory

● User can backup manually from internal HDD to USB memory stick by connecting one to USB port equipped at rear side of DVR

● Connect USB Memory Stick into USB port → Input the start of backup date and time at backup menu → Input the end of backup date and time at backup menu → Select the channel → Select event condition.

● USB flash memory will save backup to be used..

● Backup by USB flash memory supports video data only.

● User can replay backup files at proprietary UniPlayer client program.

4.8.4   Network

At remote sites, users will access to backup audio & video files recorded in local H.D.D to user's PC through network.

4.9 Client Program

4.9.1   PC requirement (minimum)
- DirectX 8.0
- Explorer 5.0
- Video card memory 32MB memory
- Resolution 1024 x 768

4.9.2   RAMS (Remote Access & Monitoring System)
- Remotely access, monitor, and operate the DVR for real-time live viewing, playback, backup, on-the-fly recording, and control over the LAN/WAN
- Upgrade the S/W(Kernel, Ramdisk) of DVR
- Install the RAMS program as referred to in section 4.2 of Operation Manual.
- Execute RAMS program and register selected DVR's IP address & Port number from the DVR list.
- After selecting the target DVR, enter "**admin**" for ID and **"111111"** for default password. This will enable you to access the DVR.

4.9.3   UniPlayer
- A viewer with functions for recording, capturing, & backing up files.

4.9.4   MultiViewer
- To monitor multiple DVR, both locally and remotely. (Up to 16 Channels: for example, 4x4CH DVR, or 16x1CH DVR)

4.10   S/W upgrade of DVR

There are two types of upgrading S/W for DVR.   One is to upgrade S/W over the RAMS and the other is to upgrade S/W through the USB memory (thumb drive).   You can download the latest software from the following ftp server address.

- ftp://ftp.udrdns.net/Unimo/UDR-204/Software/

5.10.1 Over RAMS

● Click UNIMO Logo [logo] to check program version or do S/W upgrade of DVR

system.
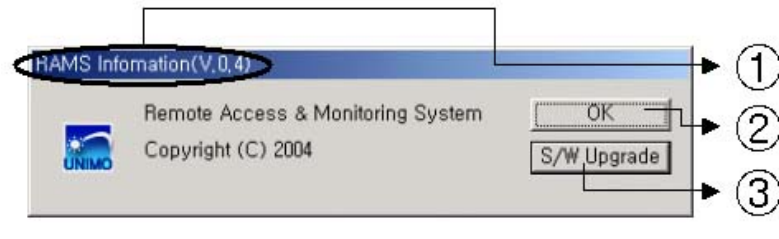
① Display the name & version of program

② Close the RAMS information window

③ Display S/W update window of DVR system

● S/W upgrade window is activated on pushing S/W upgrade button in the program version check
screen
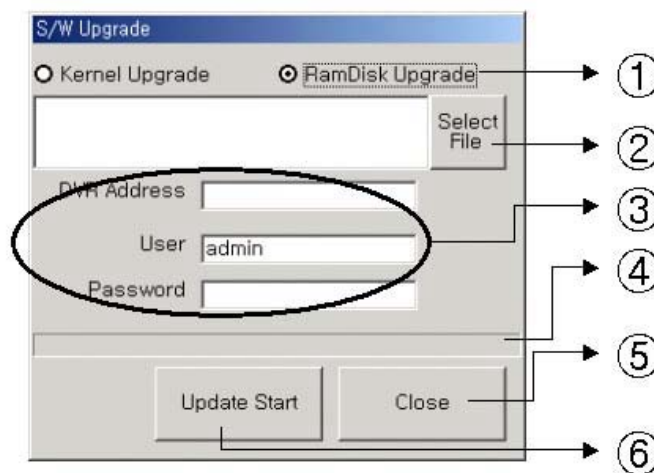
①：Select targeted files to upgrade

②：Select targeted files saved in local PC

③：Enter targeted DVR information such as DVR address, user, and password (admin only)

④：Indicator of targeted file's transmission status

⑤：Close upgrade window

⑥ : Transmit targeted files. After that, changed to upgraded cancel (cancel of upgrade
transmission)
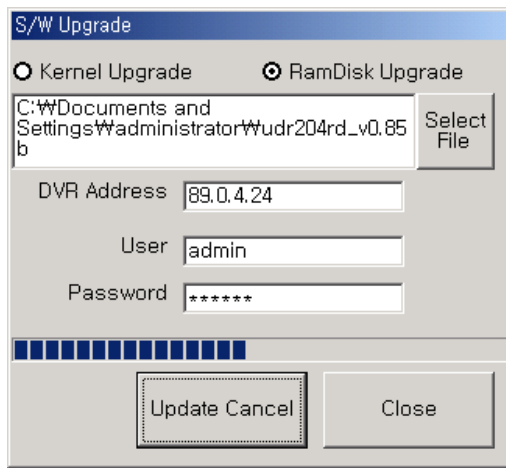
  => Display status of SW Upgrade

5.10.2 Through USB Memory (thumb drive)

● **-** Download the latest software from the ftp server and copy the files to the root directory for the USB memory.

  - Connect the USB memory to the USB port and select 'S/W Upgrade' on the 'System Setup'.

  - Select target files to upgrade.

  - Wait until rebooting after finishing software upgrade.

6. MENU Setup

Menu				Default Value	Remarks
Main menu	Sub menu1	Sub menu2	Sub menu3		
Camera Setup	Channel	Channel No		**CH-1~CH-4**	
	Camera Name			**CH-1~CH-4**	
	Camera Hide			**Off**	
	PTZ Setup	Model No		**NONE**	URX-500, PELCO-D, SENSORMATIC, VICON, SUNGJIN MRX-1000 SRX-100B
		PTZ ID		**Channel No**	
		Reverse Control	Pan	**NO**	
			Tilt	**NO**	
			Zoom	**NO**	
			Focus	**NO**	
		RS-485 Setting	Baud Rate	**9600**	
	Picture Setting	Default			
		Contrast		**9 Level**	Max. 16 Levels

		Brightness		9 Level	"
		Hue		9 Level	"
		Sharpness		9 Level	"
		Default			
	Sequence Time			2 sec	
Record Setup	Record Type			MUX	MUX/QUAD
	Resolution			MUX	360*240(NTSC) 360*288(PAL)	
				QUAD	720*480(NTSC) 720*576(PAL)	
	Audio Sync			NONE	
	Channel	Channel No		CH1	
		Quality		FINE	4 Levels
		Frame Rate (FPS)		30	
		Record Mode		MANUAL	
Event Setup	Motion Detection Setting	Channel No		CH-1	
		Sensitivity		5 Level	8 Levels
		Detection Zone		ALL	
	Sensor Setting	Sensor Type	N.O. / N.C.	N.O.	
		Channel Link	CH1~CH4	NONE	
	Alarm Output	Sensor1~Sensor4		OFF	
		Motion1~Motion4		OFF	
		Relay Time		0 sec	
	Post-Alarm Record			10 sec	10, 20, 20, 40, 50, 60 sec
	FTP Setting	FTP Server IP		Blank	
		ID		Anonymous	
		Password		Blank	
		Target Path		/	
		FTP Length of Image		5 sec	5, 6, 7, 8, 9, 10 sec
	FTP Trigger Setting	Sensor	CH1~CH4	OFF	
		Motion	CH1~CH4	OFF	
	E-Mail Address Setting	Receiver Address	1~4	Blank	
		Sender Address	1	Blank	
	E-Mail Setting	Send (Period)		NO	
		Prohibition Setting	YES / NO	NO	
			Start Hour	01	
			End Hour	01	
		SMTP Server IP		Blank	
		Authentication	YES / NO	NO	
			Password	Blank	
	Event Log				
Playback Setup	Channel			CH1	
	Starting Point			LAST	
	Audio			ON	
Display Setup	Camera Name			ON	
	Date/Time			ON	
	HDD Status			ON	
	Borders			ON	
	Alpha Blending			4 Level	8 Levels
Network Setup	DDNS Setup	DDNS Server1		211.104.85.235	
		Port		7100	

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		DDNS Server2		**221.139.14.109**	
		Port		**7100**	
	Remote Connection Login Password	Admin		**111111**	
		User		**111111**	
	Network Type	STATIC	DDNS Link	**OFF**	
			Port	**80**	
			IP Address	**192.168.1.200**	
			Subnet Mask	**255.255.255.0**	
			Gateway	**192.168.1.1**	
			DNS IP	**0.0.0.0**	
		DHCP	Port	**80**	
		PPPoE	Port	**80**	
			ID	**dvr**	Registered ID
			Password	**111111**	Registered PW
			DNS IP	**0.0.0.0**	
System Setup	DVR Name			**4CH DVR**	
	System Password	Password Setting		******	111111
		Password Apply	Record Stop	**OFF**	
			Menu Enter	**OFF**	
			System Off	**ON**	
		Auto Key Lock		**OFF**	
	Time/Date	Time Setup(h/m/s)		**Current Time**	
		Date Setup		**Current Date**	
		Format	Time Format	**24**	
			Date Format	**YYYY/MM/DD**	
		Day Light Saving Time	ON / OFF	**0FF**	
			Start Date (m/d)	**01/01**	
			End Date (m/d)	**01/01**	
			Apply Hour	**00**	
	Buzzer	Sensor		**OFF**	
		Motion		**OFF**	
		Video Loss		**OFF**	
	Language			**ENGLISH**	
	System Log				
	HDD Setup	Mounted HDD		**1 or 2**	
		Write Mode		**Overwrite**	
		Forced Deletion (days ago)		**OFF**	1~100
		Internal HDD	Capacity	**Used Cap. / Total Cap.**	
			Format		
		Removable HDD	Capacity	**Used Cap. / Total Cap.**	
			Function	**EXTENSION**	
			Format		
	Aux Port	Active	HIGH / LOW	**HIGH**	
		Function	IN	**UNUSED**	
			Out	**UNUSED**	
	Factory Default				
	S/W Upgrade	Ramdisk			
		Kernel			
Backup	Device	HDD / USB / CD RW		**HDD**	

	Start Time			**Date : Date of Yesterday** **Time : Current Time**	
	End Time			**Date : Date of Today** **Time : Current Time**	
	Channel			**CH1**	
	Event			**NONE**	
	Format				CD RW only
System Info	Video Type			**Current Type**	NTSC, PAL
	H/W Version			**1.2.XX**	
	S/W Version			**2.XX**	
	Kernel Version			**2.4.17_96**	
	Mac Address			**00:09:F8:XX:XX:XX**	
	Audio				
	Language				

6. Installing HDD

6.1   Installing single hard disk drive

The following procedure is for installing either one internal HDD or one removable HDD.

Please note that the Jumper setting must be set to MASTER.

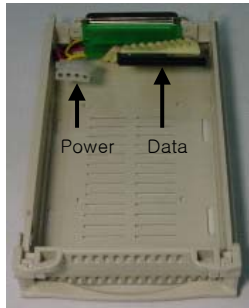To Install a single HDD in the Removable Bay, please follow these steps

● Prepare one HDD.   Verify the Jumper setting. It must be set to "Master".

Jumper Setting
(Master)

● Open the cover of the Removable Bay.　Connect the HDD power cable and the Data signal cable.

Power　　Data

● Insert the HDD in the Rack and close the cover.

● Slide-in the Removable Bay in to the DVR

● Lock the Removable Bay.

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6.2　Installing two hard disk drives.

- The Jumper setting should be done as follows:

  - The Internal HDD:　　　　　　Master

  - The Removable Bay HDD:　　Slave

- Mount the HDD in the internal slot.

- Once the HDD has been firmly mounted in the DVR, connect the power cable and the data cable.


- To install the second HDD in the Removable Bay, set the Jumper setting on the removable HDD to Slave.　Follow the procedure as listed in paragraph 7.1

6.3 Installing CD-RW drives.

- To install the CD-RW drive in the Removal Bay as backup purpose, set the Jumper setting on the CD-RW drive to Slave.

- Mount the CD-RW drive in the Removable Bay then connect to DVR system.
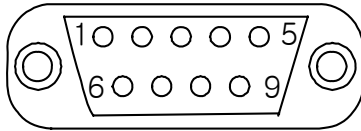

- Once the CD-RW drive has been firmly mounted in the DVR, connect the power cable (4pin) and the data cable(40pin).
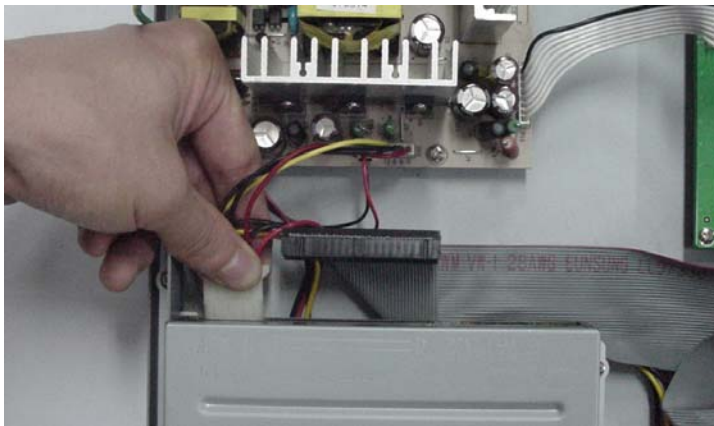
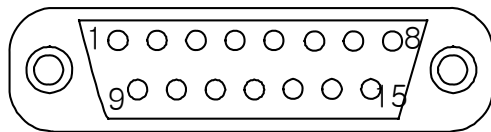- The CD-RW drive installed in the DVR system.

7. **Terminal Information**

7.1   **DSUB-9P (RS-232)**

No	Name	Description
2	RXD	Receive Data
3	TXD	Transmit Data
5	GND	Signal Ground

7.2   **DSUB-15P (PTZ / AUX / ALARM / SENSOR)**

No	Name	Description	No	Name	Description
1	RS-485+	RS-485 Transmit Data +	9	Alarm Out	Alarm Out (NO)
2	RS-485-	RS-485 Transmit Data -	10	Alarm Out	Alarm Out (COM)
3	AUX1	Auxiliary In Port	11	Alarm Out	Alarm Out (NC)
4	AUX2	(RSI, ARI, RONOFFI)*	12	Sensor1	
5	AUX3	Auxiliary Out Port	13	Sensor2	
6	AUX4	(ARO, RSTO, ERRO, DFO, RSO)*	14	Sensor3	NO/NC
7	AUX5		15	Sensor4	
8	GND	Signal Ground			

* Abbreviation

RSI	Record Start In	RSTO	Record Start Out
ARI	Alarm Reset In	ERRO	Error Out
RONOFFI	Record On Off In	DFO	Disk Full Out
ARO	Alarm Record Out	RSO	Record Status Out