# USER MANUAL

# 04 CHANNELS DIGITAL VIDEO RECORDER

## **INSTRUCTION MANUAL**

To obtain the best performance and ensure device function correctly, please read this instruction manual carefully and completely.

#### **INSTRUCTION MANUAL**

To obtain the best performance and ensure device function correctly, please read this instruction manual carefully and completely.

FCC Compliance

**USER-INSTALLER CAUTION:** YOUR AUTHORITY TO OPERATE THIS FCC VERIFIED EQUIPMENT COULD BE VOIDED IF YOU MAKE CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE TO PART 15 OF THE FCC RULES.

**NOTE:** 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 HIS OWN EXPENSE.

THIS CLASS A DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

#### WARNINGS, CAUTIONS & COPYRIGHT

#### WARINGS

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MISTURE.

DO NOT INSERT ANY METALLIC OBJECT THROUGH VENTILATION GRILLS.

#### CAUTION



#### **Explanation of Graphical Symbols**

•	The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of insinuated "dangerous voltage" within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
•	The exclamation point within an equilateral rhombus is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the product.

USERS OF THE SYSTEM ARE RESPONSIBLE FOR CHECKING AND COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND STATUTES COIPCERNING THE MONITORING AND RECORDING OF VIDEO AND AUDIO SIGNALS. ULTRAK SHALL NOT BE HELD RESPONSIBLE FOR THE USE OF THIS SYSTEM IN VIOLATION OF CURRENT LAWS AND STATUTES.

#### COPYRIGHT

THE TRADEMARKS MENTIONED IN THE MANUAL ARE LEGALLY REGISTERED TO THEIR RESPECTIVE COMPANIES.

## TABLE OF CONTENTS

1	INTR	RODUCTION	5
	1.1	FEATURE	5
	1.2	SPECIFICATION	5
2	HAR	DWARE OVERVIEW	8
	2.1	FRONT PANEL	8
	2.2	BACK PANEL	9
	2.3	ADVANCED AUTO SWITCH, ZOOM, PTZ, COPY KEY CONTROL	L & USB
	INFC	DRMATION	9
	2.4	EXTERAL ALARM	10
	2.5	IR REMOTE CONTROL	12
	2.6	PTZ (PAN, TILT AND ZOOM) CAMERA	13
3	SYST	TEM SETUP	14
	3.1	MENU SETUP INTERFACE(GUI)	14
	3.2	LIVE VIEWING AND POP-UP MENU	16
	3.3	CAMERA SETUP	
	3.4	MOTION SETUP	21
	3.5	RECORD SETUP	22
	3.6	ALARM SETUP	25
	3.7	HARD DISK MANAGEMENT SETUP	
	3.8	NETWORK SETUP	27
	3.9	BACKUP SETUP	29
	3.10	SYSTEM SETUP	
4	DVR	PLAYBACK	
	4.1	TIME SEARCH	
	4.2	EVENT SEARCH	
5	BAC	KUP PLAYBACK	
	5.1	MAIN SCREEN SETTING	
	5.2	CD/DVD BACKUP PLAYBACK	41
	5.3	USB & LOCAL BACKUP FILE PLAYBACK	42
	5.4	BACKUP FILE TO AVI	44
6	NET	WORK VIEWING & PLAYBACK	45
	6.1	IP ADDRESS SETUP ON PC SITE	45
	6.2	OPTIONAL MICROSOFT INTERNET EXPLORER SETUP	46
	6.3	LOGIN	49
	6.4	REMOTE CONTROL	50
	6.5	CONFIGURE	55
7	3GPI	PAPPLICATION & SETTING	63
API	PENDI	IX A: RECORDING TIME LAPSE (HOURS)	65

FULL D1-720 x 480	
Half D1- 720x240	
CIF-360x240	
APPENDIX B: HDD COMPATIBLE TABLE	
APPENDIX C: ERROR MESSAGE LIST	74

#### **1** INTRODUCTION

#### 1.1 FEATURE

- H.264 video compression.
- 120 PPS
- Recording quality/ rate adjustment per channel available.
- Support CMS (Central Management System)/ 3GPP.
- Audio Backup / Audio Streaming.
- Graphic User Interface (GUI).
- Support time-point backup function under Ethernet remote control mode. User can select any time period to process backup from remote side.
- Support time-search & event-search function under Ethernet remote control mode.
- Up to four online clients for independent remote control; individual live-time, play-back & time-search function available.
- Support PPPoE/ Static/ DHCP IP & DDNS.
- Real Triplex, recording/ live-time & playback operation at the same time available.
- ID function supplied from IR remote controller. User can control different DVRs at the same time by using one IR remote controller.

VIDEO			
MODEL NO.	04CH		
MODE	7	Friplex	
IMAGE SYSTEM	NTSC	PAL	
LIVE-TIME RESOLUTION	720x480	720×576	
LIVE-TIME DISPLAY RATE (Frame / Sec)	30	25	
SPLIT SCREEN	1, 4		
VIDEO INPUT	BNC × 4		
VIDEO LOOPING	NO		
VIDEO OUTPUT (BNC)	BNC × 1		
VIDEO OUTPUT (SPOT MONITOR)	NO		
VIDEO OUTPUT (S-VIDEO)	NO		
VIDEO OUTPUT (VGA)	Yes (Optional)		
AUDIO			
AUDIO INPUT RCA × 1			
AUDIO OUTPUT	RCA × 1		
AUDIO BACKUP	Yes		

#### **1.2 SPECIFICATION**

AUDIO STREAMING Yes				
RECORDING				
COMPRESSION TYPE H.264				
RECORDING RESOLUTION (FULL D1)	720 x 480 720 x 576			
RECORDING RESOLUTION (HALF D1)	720 x 240	720 x 288		
<b>RECORDING RESOLUTION (CIF)</b>	360 x 240	360 x 288		
RECORDING RATE (FULL D1)	720 x 480 up to 30 PPS	720 x 576 up to 25 PPS		
RECORDING RATE (HALF D1)	720 x 240 up to 60 PPS	720 x 288 up to 50 PPS		
RECORDING RATE (CIF)	360 x 240 up to 120 PPS	360 x 288 up to 100 PPS		
RECORDING MODE	Manual / Schedule / Alarm			
PL	AYBACK & SEARCH			
PLAYBACK SPEED	BACK SPEED Fast Forward X 2 X 4 X 8 Fast Backward X 2 X 4 X 8 field by field Playback Pause			
TIME SEARCH	Yes			
EVENT SEARCH	Yes			
EVENT LIST	EVENT LIST 3000 records per H.D.D (Maximum)			
OSD &	CONTROL INTERFACE			
TITLE	8 Characters			
ON SCREEN DISPLAY & SETUP	Time / Date / Setup Menu			
<b>GRAPHIC USER INTERFACE (GUI)</b>	Yes			
DVR CONTROL PANEL	Yes			
MOUSE	MOUSE Yes			
IR REMOTE CONTROLLER	CONTROLLER Yes			
IE BROWSER	Yes			
Yes				
STORAGE & BACKUP DEVICE				
INTERNAL HDD SUPPORT	SATA HDD x 1			
JSB PAN DRIVE BACKUP Yes				
CD/ DVD RW BACKUP No				
NETWORK				

ETHERNET	Yes	
ETHERNET COMPRESSION FORMAT	H.264	
DDNS	Yes	
E-MAIL & FTP	Yes	
NETWORK IP	Static/ Dynamic/ PPPoE	
MULTI-REMOTE CLIENT	Yes ( 4 Clients at the same time available)	
PDA/ CELL PHONE SUPPORT	Yes (MPEG4)	
3GPP	Yes (MPEG4)	
	ALARM	
ALARM INPUT	4 In (NO/ NC)	
ALARM OUTPUT	1 Out (NO/ NC)	
MOTION DETECTION	Yes	
VIDEO LOSS DETECTION	Yes	
ALARM RECORDING	Yes	
BUZZER	Yes	
SETUF	<b>2 &amp; OTHER FUNCTIONS</b>	
DAYLIGHT SAVING TIME	Yes	
PTZ CONTROL	Yes	
RS-232	No	
RS-485	Yes	
DIGITAL ZOOM	Yes	
PASSWORD CONTROL	Two lovels, one for system and the other for HDD format	
KEY-LOCK	Yes	
MULTI-LANGUAGE	Yes Yes	
KEY-LOCK MULTI-LANGUAGE FIRMWARE UPDATE	Yes USB Host & Update on line	
KEY-LOCK MULTI-LANGUAGE FIRMWARE UPDATE	Yes USB Host & Update on line OTHERS	
KEY-LOCK MULTI-LANGUAGE FIRMWARE UPDATE POWER INPUT	Yes Ves USB Host & Update on line OTHERS DC 12V	
KEY-LOCK MULTI-LANGUAGE FIRMWARE UPDATE POWER INPUT POWER CONSUMPTION	Yes Ves USB Host & Update on line OTHERS DC 12V 12W (without HDD)	
KEY-LOCK MULTI-LANGUAGE FIRMWARE UPDATE POWER INPUT POWER CONSUMPTION DIMENSIONS (W x H x D)	Yes Ves USB Host & Update on line OTHERS DC 12V 12W (without HDD) 230mm x 44mm x 215mm	
KEY-LOCK MULTI-LANGUAGE FIRMWARE UPDATE POWER INPUT POWER CONSUMPTION DIMENSIONS (W x H x D) WEIGHT (kg)	Yes Yes USB Host & Update on line OTHERS DC 12V 12W (without HDD) 230mm x 44mm x 215mm 1.4	

\* SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

#### 2 HARDWARE OVERVIEW

#### 2.1 FRONT PANEL



#### **DVR OPERATION**

NO.	LABEL	OPERATION	PTZ
1	Ŋ	IR Sensor For Remote Control.	
2	LED REC	Led Indicator	
3	CONTROL PANEL	Record, Playback And Control Button.	
4	1-4 & Quad	Press The Button To Display No.1~No.4 Full Screen and Quad Screen	
5	▲▼◀► & MENU	Button Of Controller. Button Of Menu Screen	UP, DOWN, LEFT & RIGHT
6	ENTER ©	ENTER and BACKUP Button	
7	÷>•	USB Connector.	

#### 2.2 BACK PANEL



NO.	LABEL	OPERATION
1	<u></u>	USB Mouse Connector (Only by supplied mouse).
2	VIDEO INPUT	Video input with BNC connector.
3	<b>MONITOR OUT</b>	Video output with BNC connector.
4	AUDIO OUT/ IN	Audio output/ input.
5	ETHERNET	RJ-45 connector for network.
6	RS-485/ ALARM/ RELAY	4 pin connector for external control unit, 5 pin connector for Alarm input and 3 pin connector for relay
7	VGA D-SUB OUT	Connect to CRT or LCD monitor.
8	POWER	Power switcher: DC 12V 5A / 50-60 Hz input.

NOTE: Please plug in the supplied mouse to DVR mouse connector before turn on the DVR. DO NOT REMOVE and PLUG IN the supplied mouse while DVR is operating.

## 2.3 ADVANCED AUTO SWITCH, ZOOM, PTZ, COPY KEY CONTROL & USB INFORMATION

**AUTO SWITCH :** In the split screen mode, use the "QUAD+ ▶▶" keys in the front panel to enable auto switch function. Moreover, press " ▶▶" key again to disable it.

- ZOOM :In the full screen mode, user can use compound key " ENTER/ COPY " on the front panel to perform ZOOM function. Press ▲ ▼ ◀ ►, located on the front panel, to move the zoom window.
- **PTZ** : When camera supported PTZ function, user can use " ▶▶ " button on the front panel to perform PTZ function. Press ▲ ▼ ◀ ▶ to select and change setup value.
- **COPY**: Within the playback mode, press "ENTER/ COPY" button to start backup record and press "ENTER/ COPY" again to end backup. The user can see the backup image approx. 3 ~5 sec.
- USB INFORMATION: Within the LIVE VIEWING, press "ENTER" key in the front panel will present the USB information. (NOTE: Please confirm that USB Device has plugged into DVR.)

#### 2.4 EXTERAL ALARM

There are three types of alarms that the system can be configured to handle. They are <u>Motion detection Alarm</u>, <u>External Alarm</u> and <u>Video Loss Alarm</u>.

#### A. Motion detection Alarm and External Alarm:

When motion detection or External Alarm was triggered, there are 5 possible actions will be taken.

- a. Changes recording speed as alarm recording speed.
- b. Monitor will display corresponding full screen alarm channel, it will switch automatic mode to manual mode if buttons pressing activity occurred in 5 seconds.
- c. Relays can be activated by motion detection or external alarm when turning on.
- d. The camera title will be transformed into color of yellow when motion is happening, "ALARM" text will show up when external alarm is triggered.
- B. Video Loss Alarm:

The default setting of Video Loss alarm is enabled.

#### **Terminal Connectors:**



D+	RS-485 sends +/ receives +
D -	RS-485 sends -/ receives -
D+	RS-485 sends +/ receives +
D -	RS-485 sends -/ receives -
ALARM1-4	Camera alarm input.
GND	GND.
N.C	Relay N.C.
COM	Relay COM
N.0	Relay N.O.





EXAMPLE 2 : Connect with Alarm Siren at Relay N.O.



#### 2.5 IR REMOTE CONTROL



ITEM		
REC	Press REC to start recording and press twice to stop.	
1 - 4	Select channel 1-4 with full screen.	
QUAD	Fast backward.	
	Picture by picture backward.	
	Picture by picture forward.	
	Fast Forward.	
	Play video forward.	
COPY	Switch channel format.	
	Move upward or increase the number.	
Move rightward or increase the number.		
▼ Move downward or decrease the number.		
•	Move leftward or decrease the number.	
┛	Enter selected items.	
MENU	Enter or Exit Main Menu.	
STOP	Stop the playback.	

#### 2.6 PTZ (PAN, TILT AND ZOOM) CAMERA

Following diagram for DVR connect between PTZ camera & joystick controller, for DVR to control PTZ camera please make sure the CAMERA ID, BANDRATE (default at 9600 bps) and RS-485 cable.

#### 2 CORE



Under "Two Core" connection, controller can control speed dome without integrated protocol into DVR. Moreover, one keyboard can connect MAX 256 units of speed dome.



#### 3 SYSTEM SETUP 3.1 MENU SETUP INTERFACE(GUI)







C. RECORD SETUP























#### 3.2 LIVE VIEWING AND POP-UP MENU



- **NOTE** : The pop-up menu can be activated by moving the mouse cruise to the bottom of the live viewing screen.
  - A. 🔟 GUI MENU BAR

With live viewing mode, press this button to get into the GUI menu.

## B. 📓 DISK INFORMATION

With live viewing mode, press this button to display disk information.

#### 

In the full screen mode, left-click the button of the mouse to pull a range to zoom in or zoom out the image. User can right-click the button of the mouse to disable this function. (NOTE: Using the mouse to operate digital zoom can zoom in to max. 16 times.) Moreover, user can also use compound key on the front panel to perform this function. (First, click ENTER/COPY Key and then click  $\blacktriangle \lor \checkmark \lor$  key to select zoom in or zoom out position. Finally, click ENTER/COPY key again to complete the setting. Moreover, click MENU Key to disable digital zoom function. Using the panel key to perform zoom in function is fixed at 2 times.)

#### D. **9** PTZ CONTROLLER

Within live-viewing mode, Clicks this button to get into the PTZ setup menu. User can also use PTZ key on the front panel to perform this function. Moreover, user can right-click the button of the mouse or press the PTZ key on the front panel again to exit PTZ Setup.

**NOTE:** Only for the camera supported PTZ function.

#### PTZ CONTROL



- SAVE PRESET NUMBER: Press SET to save preset point number and its position.
- **GO TO PRESET NUMBER:** Press **SET** to go to the setup preset point number position.

#### PTZ SETUP MENU

PTZ SETUP	
LEFT-RIGHT OPEED:	000
UP-DOWN SPEED:	
AUTO SPEED:	
BAUD RATE:	9600
PROTOCOL :	PELCO-D

LEFT-RIGHT SPEED: Use the mouse wheel to change the left-right speed. UP-DOWN SPEED: Use the mouse wheel to change the up-down speed. AUTO SPEED: Use the mouse wheel to change the auto patrol speed. BAUD RATE: Use the mouse wheel to change the BAUD rate. PROTOCOL: Use the mouse wheel to change the connection protocol.

## E. AUDIO CONTROL

Press this button to turn the audio on or off.

## 1234

#### DISPLAY CONTROL

Within live-viewing or playback mode, use display control to switch the camera channel.

## G

Ó

### RECORD AND PLAYBACK CONTROL

Same as front panel controller and remote controller.



F.

#### CAMERA SETUP



Press  $\blacktriangle$  or  $\blacktriangledown$  to select items. Press  $\blacktriangleleft$  or  $\blacktriangleright$  to change values. Press SET to see more options.

#### A. CAMERA

Press  $\blacktriangleleft$  or  $\blacktriangleright$ / mouse wheel to switch channels.

#### **B. VIDEO ADJUST**



#### **B-1. CONTRAST**

Press  $\blacktriangleleft$  or  $\blacktriangleright$ / mouse wheel to change contrast level.

- **B-2. BRIGHTNESS**
- Press  $\blacktriangleleft$  or  $\blacktriangleright$ /mouse wheel to change brightness level. B-3. HUE

Press  $\blacktriangleleft$  or  $\blacktriangleright$ / mouse wheel to change HUE level.

#### **B-4. COLOR**

Press  $\blacktriangleleft$  or  $\blacktriangleright$ / mouse wheel to change color level.

```
B-5. SHAPRNESS
```

Press  $\blacktriangleleft$  or  $\blacktriangleright$ / mouse wheel to change sharpness level.

#### C. CAMERA TITLE



Use mouse to select and change character.

#### **D. DISPLAY**

Press  $\blacktriangleleft$  or  $\triangleright$  to/ mouse wheel change value for the corresponding camera would be displayed on the screen or not.

#### E. DWELL TIME

Press  $\blacktriangleleft$  or  $\blacktriangleright$  / mouse wheel to ON/OFF auto switch and the switch sec..

#### F. PTZ SETUP



LEFT-RIGHT SPEED: Use the mouse wheel to change the left-right speed. UP-DOWN SPEED: Use the mouse wheel to change the up-down speed. AUTO SPEED: Use the mouse wheel to change the auto patrol speed. BAUD RATE: Use the mouse wheel to change the BAUD rate. PROTOCOL: Use the mouse wheel to change the connection protocol.



MOTION SETUP		
CAMERA MOTION DETECT	1 ON	
BUZZER SENSITIVITY MOTION AREA	0FF 4 50	

Press  $\blacktriangle$  or  $\lor$  to select items. Press  $\triangleleft$  or  $\triangleright$  to change values. Press SET to see more options.

#### A. CAMERA

Press  $\blacktriangleleft$  or  $\blacktriangleright$ /mouse wheel to switch channels.

#### **B. MOTION DETECT**

Press  $\blacktriangleleft$  or  $\blacktriangleright$ /mouse wheel to change value for motion detect function.

#### C. BUZZER

Press  $\blacktriangleleft$  or  $\blacktriangleright$ /mouse wheel to change value for buzzer while motion detected.

#### **D. SENSITIVITY**

Press  $\blacktriangleleft$  or  $\blacktriangleright$ /mouse wheel to change sensitivity value from 001 (minimum) to 100 (maximum).

#### E. AREA <u>SETU</u>P

1. Press **SET** to enter Motion Area Setting. (Note: The default setting of all area is "MOTION ON".)



2. Use the mouse to select which block is needed.



The green area shows the area without motion detection.

3. Left-Click the mouse to see more options or exit the setup.



SELECT: Cancel the selected area. CLEAR: Select the area without motion detection. EXIT: Exit the motion detection setup.



60

RECORD SETUP		
RESOLUTION	7200288	
NORMAL RECORD PPS		SET
ALARM RECORD PPS	10 050	SET
RECORD OUALLTY	10 SEC	
RECORD MODE	MANUAL	
AUDIO RECORD	ON	

Press ▲ or ▼ to select items.
Press ◀ or ► to change values.
Press SET to see more options.

#### A. RESOULTION

Press  $\blacktriangleleft$  or  $\blacktriangleright$ / mouse wheel to switch record resolution.

FULL D1: 720 x 480 (NTSC)/ 720 x 576 (PAL) HALF D1: 720 x 240 (NTSC)/ 720 x 288 (PAL). CIF: 360 x 240 (NTSC)/ 360 x 288 (PAL).

NOTE: If record resolution is altered in here, **DVR will reboot** automatically.

#### **B. NORMAL RECORD PPS**

Press **SET** to change the PPS in normal recording. User can click "AVERAGE" to set PPS automatically by system or change the PPS for each channel manually.

Record Resolution: FULL D1: 720 x 480 (NTSC)/ 720 x 576 (PAL) HALF D1: 720 × 240 ( NTSC ) / 720 × 288 ( PAL )



#### C. ALARM RECORD PPS

Press **SET** to change the PPS in alarm recording. User can click "AVERAGE" to set PPS automatically by system or change the PPS for each channel manually.

Record Resolution: FULL D1: 720 x 480 (NTSC)/ 720 x 576 (PAL) HALF D1: 720 × 240 ( NTSC ) / 720 × 288 ( PAL )



#### **D. ALARM RECORD DURATION**

Press  $\blacktriangleleft$  or  $\blacktriangleright$  to set dwell time of alarm recording.

#### E. RECORD QUALITY

Press **SET** to switch image quality of each channel (720 x 480 (NTSC)/ 720 x 576 (PAL); 720  $\times$  240 (NTSC) / 720  $\times$  288 (PAL)) or each two channels (360  $\times$  240 (NTSC) / 360  $\times$  288 (PAL)). User can use mouse wheel to change the image quality of each single channel: LOW/ MEDIUM/ HIGH/ BEST, or use "AVERAGE" to switch the image quality of all channels at once.

Record Resolution: FULL D1: 720 x 480 (NTSC)/ 720 x 576 (PAL) HALF D1: 720 × 240 (NTSC) / 720 × 288 (PAL)



Record Resolution: CIF:  $360 \times 240$  (NTSC) /  $360 \times 288$  (PAL)

RECORD	QUALITY		2 🛛
0H1 8	BEST	CH2 8	BEST
СНЗ :	BEST	Сн4 ₹ :	BEST
	AVE	RAGE : I	HIGH

#### F. RECORD MODE

Press  $\triangleleft$  or  $\triangleright$  to switch record mode to ALWAYS/ MOTION/ SCHEDULE / OFF. **G. AUDIO RECORD** 

Press  $\blacktriangleleft$  or  $\blacktriangleright$  to switch AUDIO RECORD ON or OFF.

#### H. SCHEDULE SETUP

Press **SET** to get into schedule setup menu •

	8	CH	BD	00	.8	9	1						
				6	8	10	12	14	16	18	20	22	24
MON													
TUE													
WED				Ц.									
THU				-									
SAT						HH							
SUN				H		ΠĒ		FF F		H.	H	h	
				_						_			-
FULL		EC			AL	AR	М	RE	C		N	0	REC
RE	C			-	-	IA						0	XU

- 1. Use mouse to select schedule day/ time/ mode.
- 2. Click for a save change and exit.

3.6

#### ALARM SETUP



Press  $\blacktriangle$  or  $\lor$  to select items. Press  $\blacktriangleleft$  or  $\triangleright$  to change values. Press SET to see more options.

#### A. EXT. ALARM MODE

Select N.C for "normal close" alarm input, or select N.O for "normal open" alarm input.

#### **B. ALARM DISPLAY MODE**

Press  $\blacktriangleleft$  or  $\blacktriangleright$ /mouse wheel to change value for ALARM DISPLAY MODE with full screen.

- C. VIDEO LOSS DETECT Press ◄ or ►/ mouse wheel to switch VIDEO LOSS ALARM ON or OFF.
- D. EVENT LOG SETUP Press SET to change value for MOTION EVENT / VIDEO LOSS EVENT to ON / OFF.
- E. BUZZER TIME SETUP Press SET to set dwell time of BUZZER/ ALARM.
- **F. RELAY TIME SETUP** Press **SET** to set dwell time of RELAY.

3.7

Q

#### HARD DISK MANAGEMENT SETUP



Press ▲ or ▼ to select items. Press ◀ or ► to change values. Press SET to see more options.

#### A. OVERWRITE MODE

Press  $\blacktriangleleft$  or  $\blacktriangleright$  to change value OVERWRITE MODE ON or OFF.

**B. CAPACITY WARNING (When Overwrite Mode is OFF, Capacity Warning will enable)** 

Press  $\triangleleft$  or  $\triangleright$  to change value to 20/15/10 or 5% with non-overwrite mode. When LEFT RATIO is below the setting, it will enable AUDIBLE ALARM (If AUDIBLE ALARM of BUZZER of ALARM SETUP is ON).

#### **C. HDD INFORMATION**

Press SET to display HDD information.

#### **D. HDD FORMAT SETUP**



#### **D-1. HDD PASSWORD PROTECT**

Press  $\blacktriangleleft$  or  $\blacktriangleright$ /mouse wheel to change value for hard disk format password protection.

#### D-2. HDD PASSWORD

Press **SET** then use mouse to change password. Default password : 1111

#### D-3. HDD <u>FOR</u>MAT

Press **SET** to get into FORMAT setup. Press YES or NO to execute.



IP MODE         STATIC           HTTP PORT         80           IPADDR         192.168.1.220           NETMASK         255.255.255.0           GATEWAY         192.168.1.254           DNS 1         168.95.1.1           DNS 2         168.95.192.1           PPP0E         DNS           DNS         S	NETWORK	SETUP	<b>e x</b>
DDNS RVSP	IP MODE HTTP PORT IPADDR NETMASK GATEWAY DNS 1 DNS 2 PPPOF	STATIC 80 192.168.1.220 255.255.255.0 192.168.1.254 168.95.1.1 168.95.192.1	SET SET SET SET SET SET
N	DDNS BVSP	×	SET

Press  $\blacktriangle$  or  $\blacktriangledown$  to select items. Press  $\blacktriangleleft$  or  $\blacktriangleright$  to change values. Press SET to see more options.

#### A. IP MODE

Press  $\blacktriangle$  or  $\checkmark$  to select items and  $\triangleleft$  or  $\blacktriangleright$ / mouse wheel to change to STATIC IP or DHCP.

**B. HTTP PORT** 

Press  $\blacktriangle$  or  $\checkmark$  to select items and  $\triangleleft$  or  $\triangleright$ / mouse wheel to change WEB PAGE PORT.

C. IP ADDR

Press  $\blacktriangle$  or  $\triangledown$  to select items and **SET** to change IP ADDRESS.

**D. NETMASK** 

Press  $\blacktriangle$  or  $\checkmark$  to select items and **SET** to change SUBNET MASK.

**E. GATEWAY** 

Press  $\blacktriangle$  or  $\triangledown$  to select items and **SET** to change Default GATEWAY.

F. DNS1

Press  $\blacktriangle$  or  $\triangledown$  to select items and **SET** to change DNS.

G. DNS2

Press  $\blacktriangle$  or  $\checkmark$  to select items and **SET** to change OTHER DNS.

H. PPPoE



#### H-1. PPPoE SETTING

Press  $\blacktriangleleft$  or  $\blacktriangleright$  / mouse wheel to ENABLE / DISABLE PPPoE.

#### H-2. USER NAME

Use mouse to setup user name for ADSL account.

H-3. PASSWORD

Use mouse to setup password for ADSL account.

#### H-4. STATE

Press SET to display status of PPPoE  $\,\circ\,$ 

#### I. DDNS SETUP



I-1. DDNS SETTING : Press or / mouse wheel to set DDNS ENABLE / DISABLE.

**I-2. PROVIDER** : Press ◀ or ►/ mouse wheel to select DDNS provider.

I-3. USER NAME : Press **SET** to setup user name.

I-4. UPDATE SCHEDULE: Use **SET** to dwell time of updating schedule.

**I-5. STATE** : Press **SET** to display status of DDNS.

#### J. RTSP SETUP

																						_	~			
	RT	s	Ρ		Ρ	0	R	т	:										55	4						S
6	BT	P		8	8	۵	B	8		P	0	B	7	8					10	12	3					S
F	RΤ	Ρ		Ε	Ν	D		Ρ	0	R	Т	:							10	2	5					S
N	V I	D	E	0		Q	U	A	L		Т	Y							HI	G	н					
For	r	Ε	×	a	m	p	\$	e																		
rts	s p			1		Ρ		C	н	0	1		Т	h	e	L	۷	е	C	H	1	S	t	e	a	m
rts	s p			1		Ρ	1	C	н	0	2		T	h	e	L	۷	e	C	H	2	S	t	e	a	m
rts	s p			1		Ρ		C	н	0	3		Т	h	e	L	٧	е	C	H	3	S	t	e	a	m
rts	s P		1	1		Ρ		C	H	0	4		T	h	0	L	۷	8	C	H	4	S	t	8	a	m

J-1. RTSP PORT: Press SET to setup RTSP port. The default value is 554.

J-2. RTP START PORT: Press SET to setup RTP start port.

J-3. RTP END PORT: Press SET to setup RTP end port.

J-4. VIDEO QUALITY: Press ◀ or ►/ mouse wheel to select video quality. There are BEST, HIGH, STANDARD, MEDIUM & LOW five options.





#### NOTE: \*For function stability, Ethernet remote control function (IE) will be stopped when processing backup function. \*USB DEVICE BACKUP: 3.2MB/ per sec.

#### A. USB BACKUP

Due to each USB device with different USB driver ICs, their compatibilities differ, too. This system is compatible with most of USB flash memory. If there is compatible issue, please refer to **APPENDIX B**. In addition, please format USB flash memory with FAT32.

#### **BEFORE BACKUP**

- A. In live viewing mode, insert USB device into a USB port of the DVR.
- B. Get into playback mode by PLAY TIME SEARCH or EVENT LIST SEARCH and play back videos that are going to be as backup.

#### **VIDEO BACKUP**

In multiplexer or full screen mode, press **w** to start backup and press **w** to end backup. The system will backup automatically.

#### PICTURE BACKUP

#### **USB BACKUP MENU**

USB	BACKUP	22
R'E'C'O'R D	-I-M-E-:	
START	2008/03/2	28 17:01:16
	200070070	
BACKUP 1	IME:	
STARI	2008/03/2	8 17:01:16
E'NI	): 2008/03/2	28 17:12:37
BACKUP (	CAPACITY:	1 0 2 M B
USE	CAPACITY	983MB
USE	USED SIZE	: 172MB 17%
LEF	T RATIO :	811MB 83%

• User can use the mouse wheel to change the backup Start/ End time •



• Click a to start backup, the total process will be shown on screen.



#### **BACKUP FILE NAME**

Each backup file will be named as START TIME. EXAMPLE: 174624.264 is 17:46:24

#### **AFTER BACKUP**

After backup, the system will copy "R6VIEWER.EXE" automatically on USB device for the user to play back backup file.

#### 3.10 SYSTEM SETUP SYSTEM SETUP 1 DATE / TIME SETUP EM NIT SC BOARD LOCK OFF ID NUMBER 0 SPLAY SETUP NGU/AGE ENGLUSH TEM PASSWORD GRADE SET SAVING IME SET OHOF19 .D1.0.15

Press  $\blacktriangle$  or  $\lor$  to select items. Press  $\triangleleft$  or  $\triangleright$  to change values. Press SET to see more options.

#### A. DATE / TIME SETUP

Press **SET** to set DATE / TIME.

#### A-1. TIME

Use mouse wheel to change DATE/ TIME.

#### **A-2. DATE FORMAT**

Use mouse wheel to change DATE. There are DD/MM/YYYY, YYYY/MM/DD and MM/DD/YYYY three modes.

#### A-3. NTP MODE

Use mouse wheel to change NTP. When NTP is enable, use **SET** to change SERVER IP and use  $\triangleleft$  or  $\triangleright$ / mouse wheel to change GMP and UPDATE TIME.

THOLE.		
TIME SETUP		R
TIME	2008/04/07 13	34:43
DATE FORMAT	AAAA\WW\OD	
NTP MODE	ENABLE	
S'E'R'V'E R I P	198.123.30.1	-3-2 SET
GMT	+08:00	
UPDATE TIME	12 HOUR	

#### **B. SYSTEM TYPE**

Press  $\blacktriangleleft$  or  $\blacktriangleright$ / mouse wheel to change the system type. Moreover, **DVR will reboot** while changing the system type.

#### C. KEYBOARD LOCK

Press  $\blacktriangleleft$  or  $\blacktriangleright$ / mouse wheel to switch ON/ OFF. There are OFF, TYPE 1 and TYPE 2 three options.

OFF : UNLOCK.

- TYPE 1 : Only can switch split screen and full screen. The user can operate AUTO and MENU functions as well. However, the password has to be filled in to implement playback mode.
- TYPE 2 : LOCK (Except MENU button). The password has to be filled in to implement playback mode.

After KEYBOARD LOCK mode setup, please set up **PASSWORD** 

Without password, un-authorized users could access into SYSTEM SETUP and make changes of settings easily.

#### **D. DVR ID NUMBER**

Press  $\blacktriangleleft$  or  $\blacktriangleright$ /mouse wheel to change values.

ID NUMBER is required to make difference of each DVR.

#### **E. DISPLAY SETUP**

Press SET to ENABLE or DISABLE display of CAMERA TITLE / DVR STATUS / DATE / TIME.

#### F. LANGUAGE

Press  $\blacktriangleleft$  or  $\blacktriangleright$  to change on-screen-display (OSD) language.

#### G. SYSTEM PASSWORD

Press  $\blacktriangle$  or  $\blacktriangledown$  to select items and  $\blacktriangleleft$  or  $\blacktriangleright$  to change values. Default password: 1111.

#### H. FIRMWARE UPDATE

Press **YES** to start firmware update. After updated, the DVR will reboot automatically. At this moment, please do not turn off the DVR manually.

#### NOTE: 1. Please format USB flash memory with FAT32.

2. For function stability, we suggest user to STOP recording function before processing firmware update function.

#### I. LOAD DEFAULT

Press **SET** button to entry CONFIGURE SET screen. There are LOAD SETUP FROM DEFAULT, LOAD SETUP FROM USB and BACKUP SETUP TO USB three parts.

CONFIGURE SET	2
LOAD SETUP FROM DEFAULT	SET
BACKUP SETUP TO USB	SET

- I-1. LOAD SETUP FROM DEFAULT: Press **SET** button to load the setting back to factory default.
- I-2. LOAD SETUP FROM USB: Press SET button to load the pen drive setting to the current DVR.
- **I-3. BACKUP SETUP TO USB:** Press **SET** button to backup the current DVR setting into pen drive.

#### J. DAYLIGHT SAVING TIME SETUP

Press  $\blacktriangleleft$  or  $\blacktriangleright$ /mouse wheel to change the DAYLIGHT MODE option: Disable, Manual and Auto.



#### J-1. MANUAL MODE

Use **SET** to change the Day Light Saving start and end time.

AYLIGHT	MODE	MANUAL	60
START	MAR LAST	SUN 1:00	SET
END:	OCT 1ST	SUN 2:00	SET
DELAY TO	Me	0 8 8 0	

#### J-2. AUTO MODE

Press ◀ or ►/ mouse wheel to change CITY option. Different CITY will have different START, END and DELAY TIME.

DAAF 100	t mode	OTUA
TTY	LONDON	
TART	MAR LAST	SUN 1:00
ND :	OCT 18T	SUN 2:00
ELAY T	IME 1:00	GMT +00:00

#### 4 DVR PLAYBACK



Click the playback button on the pop-up menu.

Note: the pop-up menu can be activated by moving the mouse cruise to the bottom of the live viewing screen.

## **DISK INFORMATION**

With playback mode, press this button to display disk and pen drive information.

## B. RECORD BACKUP

With playback mode, press this button to backup record (.264 video backup) and press this button again to finish backup. For performing the single image backup (.Y42 single image backup), press first and then click this button to backup the necessary image.

### C. 🌒 AU

A.

AUDIO CONTROL

Press this button to turn the audio on or off

## D. 🗄 1 2 3 4

#### **DISPLAY CONTROL**

Within playback mode, use display control to switch the camera channel.

#### 

#### **RECORD AND PLAYBACK CONTROL**

Same as front panel controller and remote controller.

#### 4.1 TIME SEARCH

Double click Left button of mouse to trigger play time search.



Please set the start and end time to search.



#### 4.2 EVENT SEARCH

Double click Left button of mouse to trigger event search.



Please select the event to playback.

	E	V	E	N	T		C	0	ST		s	E	A	R	C	H							5		2	<			
			I																										
YY	Υ	Y	1	M	M	1	D	D	- H	Н	18	М	M	a.	S	S		C		н		T	Y	P	E				
2 0	0 0	7		0	9		1	9	1	0		5	0		4	2						P	0	1	E	R			
2 0	0 0	7		0	9		1	9	1	0		4	9		0	5	C	ł	1	0	6	V		ι	0	S	S		
2 0	0 0	7		0	9		1	9		0		4	6		0	8						P	0	1	E	R			
2 0	0 0	7		0	9			9	0	9		4	6			4						P	0	1	E	R			
2 0	0 0	7		0	9			7	1	6		3	6		4	8						P	0	W	E	R			
2 0	0 0	7		0	9		1	7	1	5		5	5		4	4	C	ł	1	0	6	A	L	A	R	M			
2 0	0 0	7		0	9		1	7	1	5		1	6		4	2	C	ł	ł	1	6	N		L	0	S	S		
20	00	17	0	0	9	0	1	Ø	1	6	8	1	6	8	8	8	0		X	0	8	6		6	R	M			
20	0 0	7	1	0	9	1	1	7	1	2		1	4		3	5	-	-		-	-	R	E	C	0	R	D	)	
2 0	0 0	7		0	9			5	0	0		0	0		5	1						R	E	C	0	R	D		
																							-						

**NOTE**: Display the type of the event as follows.

POWER	If the DVR got power loss, it will record the date and time of
	rebooting.
RECORD	If <b>REC.</b> button has been pressed, it will record the date and time in the
	event list.
V.LOSS	When a camera signal is lost, it will record the date, time, and
	corresponding channel. Moreover, the 💟 icon will display on the
	corresponding channel.
ALARM	When ALARM is triggered, it will record the date, time, and
	corresponding channel. Moreover, the 🔲 icon will display on the
	corresponding channel.
MOTION	When MOTION is detected, it will record the date, time, and
	corresponding channel. Moreover, the 🛃 icon will display on the
	corresponding channel.
# **5 BACKUP PLAYBACK**

#### SYSTEM REQUIREMENT

CPU: Intel Celeron 1.6G MEMORY: 256MB. VGA: 32MB VGA RESOLUTION: 1024 x 768. OS: Windows XP / 2000

## SUGGESTED REQUIREMENT

CPU:Intel P4 2.8G MEMORY:512MB or above VGA:64MB or above VGA RESOLUTION:1024 x 768 OS: Windows XP / 2000

#### 5.1 MAIN SCREEN SETTING A. MAIN SCREEN



**Control Panel** 

#### **B. HDD PLAY**

Play about all the data from the Hard disk of DVR or perform the specific Time and Event Search to play.

Note: Remove the DVR HDD and connect to the PC first. Then, use DVR

player **FOVEWERE** (R6Viewer.exe) to play the data of HDD. DVR player (R6Viewer.exe) can be attained from the attached CD or via the Internet; moreover, while performing USB backup and DVD-RW backup, the software will be built automatically as well.



#### **B-1. TIME SEARCH**

Insert search Date and Time and then click Time Search to play all the searched film.

R6 Viewer	
Source Select About	
Ch 1         2008/06/23         14/29/33         Ch 2         2008/06/23         14/29/33         Ch 4         2008/06/23         <	HDD Play HDD Select Device_1 PlayBack
[Ch 9] [1601/01/01-00:00:00] [Ch 10] [1601/01/01-00:00:00] [Ch 11] [1601/01/01-00:00:00] [Ch 12] [1601/01/01-00:00:00]	CH01 VI Slice Backup CH01 Save AVI SnapShot
[ch 13] 1601/01/01-00:00:00] [ch 14] 1601/01/01-00:00:00] [ch 15] 1601/01/01-00:00:00] [ch 16] 1601/01/01-00:00:00]	Search 2009/6/23 ÷ 14:28:00 ÷ Time Search Event Search Full Screen PlayAudio
Start : 2008/06/19_09:55:52 End : 2008/06/23_14:37:59	1 4 9 16 Language English 💌 Close

## **B-2. EVENT SEARCH**

It will display all the events which are reserved within the DVR HDD after

press Event Search (Shown in the following) and double click left button of mouse to trigger event.

Even				
Num	Channel	Time	Туре	18
1	255	2008/02/25_09:53:29	POWER ON	- 1
2	255	2008/02/25_09:53:38	POWER ON	
3	255	2008/02/25_09:54:56	POWER ON	
4	255	2008/02/25_09:56:09	POWER ON	
5	255	2008/02/25_09:58:05	POWER ON	
6	255	2008/02/25_10:02:45	POWER ON	
7	255	2008/02/25_10:13:05	POWER ON	
8	255	2008/02/25_10:15:33	POWER ON	
9	255	2008/02/25_10:35:06	POWER ON	
10	255	2008/02/25_10:37:42	POWER ON	
11	255	2008/02/25_10:47:21	POWER ON	
12	255	2008/02/25_10:49:25	POWER ON	
13	255	2008/02/25_10:51:11	POWER ON	
14	255	2008/02/25_10:54:16	POWER ON	
15	255	2008/02/25_10:58:08	POWER ON	
16	255	2008/02/25_11:00:02	POWER ON	
17	255	2008/02/25_11:04:15	POWER ON	
18	255	2008/02/25_11:05:35	POWER ON	
19	255	2008/02/26_10:28:44	POWER ON	1.

# **B-3. HDD COPY**

Copied and reserved the DVR HDD data to other data storage device.

11 1607/01/01 00:00:00 2h2 1601/01/01 00:00:00 2h3 1601/01/01 00:00:00 2h4 1601/0 Coyy 15 1601/01/01 00:00:00 2h6 160 8tettime 2006/ 6/19 ± 03:55:52 ± 1601/01	HDD Play           HDD Select           Device_1           PloyBack           III II II II II II III III
ni 1601/01/01 00:00:00 Ch 2 1601/01/01 00:00:00 Ch 3 1601/01/01 00:00:00 Ch 4 1601/0 Copy 15 1601/01/01 00:00:00 Ch 6 160 8tettime 2006/ 6/19 - 09:55:52 - 1601/01	1/01 00:00000 HDD Play HDD Select □Pevice_1 ▼ PlayBack ↓ ◀ ◀ Ⅱ ■ ▶ ▶ ▶
Conyy 15 1501/01/00 000000 216 160 Stettime 2006/ 6/19 🛨 09:55 52 😋 1601/01	HDD Select Device_1
Copy 15 1601/01/01 00:00:00 2h6 160 Sterline 2008/ 6/19 - 09: 55: 52 - 1601/0	PlayBack
Copy 15 1601/01/01 00:00:00 2h6 160 Sterline 2008/ 6/19 - 09: 55: 52 - 1601/0	PlayBack
n5 1601/01/01 00:00:00 Ch 6 160 Startime 2008/ 6/19 🗐 03:55:52 🔤 1601/0	
StatTime 2008/ 6/19 🛨 09:55:52	
2008/ 6/23 - 14:37:59 -	C Only   Sice
	Backup
Save Stop	CH01 - Save AVI SnapShot
h 9 1601/01/01 00:00:00 Ch 10 160 Close 1601/0	1/01 00:00:00
	Сору
	Search 2008/ 6/23 + 16 : 22 : 00 +
	Time Search
	Event Search
	Full Screen PlayAudio
	1 4 9 16
rt : 2008/06/19_09:55:52 End : 2008	3/06/23_14:37:59 Language English 💌



StartTime	2008/ 6/23	12 : 🜆 : 52	÷
EndTime	2008/ 6/23	14 : 37 : 59	÷
Save	Stop		
			Close



Save to start reserving.

After that, press

iave As					2 🛛
Save in:	l⇒¶v <sup>b</sup> ≋ <b>r</b> €	±⊗± (E:)	•	+ 🗈 💣 📰-	
My Recent Documents Desktop My Documents	16rp Combo DVR 11.2.23_JPro JPigWero S new product New product P1.2.23_th Uthpserver 展發専用 载育U線 國 140216.264	Secu onny report 聖_繁中			
My Network Places	File name:	20080619_095552.26	4	. [	Save
	Save as type:	264 files (*.264)		-	Cancel

Сору			
StartTime	2008/ 6/23	÷ 12 : 🜆 : 52	*
EndTime	2008/ 6/23	÷ 14 : 37 : 59	÷
Save	Stop	1	
			LIUSC

Finally, the complete information will pop-up while finished storage.

ell
1

(R6 Viewer.exe) can play not only DVR H.D.D. but also the \*.264 and \*.Y42 files which are reserved within the data storage devices. (i.e. CD/DVD disc, pen drive and the PC H.D.D which the data backup from DVR H.D.D)

C. File (\*.264) Play

Source Select	About				
Ch1 200	8/06/23 12:56:08	Ch 2 2009/06/23 12:56:08	2h 3 2009/06/23 1256.08	Ch 4 2008/06/23 12:56:08	File(*.264) File Select Open File PlayBack
Ch5 160	1/01/01 00:00:00	Ch 13    1601/01/01 00:00:00	<u>en 7</u> [1601/01/01 00:00:00]	Ch 12 1601/01/01 00:00:00	CHOI Save AVI SnapShot
<u>Ch 13 160</u>	1/01/01 00:00:00	Ch 14 1601/01/01 00:00.00	Ch 15) 1601/01/01 00:00.00	Ch 16 1601/01/01 00:00:00	Search           [25/12/2008 ≟ 12:22:53 ≟           Time Search           Event Search           Full Screen           Flag Audio
					1 4 9 16 Longuage V

D. File (\*.Y42) Play



## 5.2 CD/DVD BACKUP PLAYBACK

A. Insert the CD/DVD disk into CD/DVD ROM, the software will auto pop out, and select "Open File" and pick up the file.



**B.** Press the **i** con to play the video.



#### 5.3 USB & LOCAL BACKUP FILE PLAYBACK

A. Plug the USB disk into PC or check the local backup folder.

If using USB mode, please double click the player.exe from the pop-up diagram. (As below)



B. The play backup program would appear on the screen, select "Open File".



**C.** Open the USB disk located driver letter. (Example E:) or the local backup folder, and pick the file to playback.

The backup file will named as the time when backup, as like: 170319.264 will be 17:03:19



**D.** Press the play icon to play the video or still picture.

Source Select About	
Ch1 2008/03/28 17.03.52 Ch2 1601/01/01 00.00.00 Ch3 1601/01/01 00.00.00 Ch4 1601/01/01 00.00.00	File(*.264)
	File Select
	PlayBack
Ch 5 [1601/01/01 00:00:00] Ch 6 [1601/01/01 00:00:00] Ch 7 [1601/01/01 00:00:00] Ch 8 [1601/01/01 00:00:00	<b>╡┽║╸┝</b> ┝┝
	Dnly I Slice
	Backup CH01  Save AVI SnapShot
Eng (1601/01/01/00/000) Ent() (1601/01/01/00/0000) Ent() (1601/01/01/00/0000) Ent() (1601/01/01/00/0000)	Copy
	Search 25/12/2008 ÷ 12:22:53 ÷
	Time Search
Ch 13 1601/01/01 00:00:00 Ch 14 1601/01/01 00:00:00 Ch 15 1601/01/01 00:00:00 Ch 16 1601/01/01 00:00:00	Event Search
	1 4 9 16
	Close
	Close

# 5.4 BACKUP FILE TO AVI

A. Please select specific channel to backup.

Source Select About           Ch1         2008/06/23         12:57:46         Ch2         2008/06/23         12:57:46         Ch4         2008/06/23         12:57:46         File(*.264)           File Select         File Select
Ch1 2008/06/23 12:57:46 Ch2 2008/06/23 12:57:46 Ch3 2008/06/23 12:57:46 Ch4 2008/06/23 12:57:46 File(*.264)
- File Select
Upen File
Plankack
🖵 Only I Slice
CHUT Save XVI SnapSho
Search
25/12/2008 🛨 12:22:53
Time Search
Ch 13 1601/01/01 00:00:00 Ch 14 1601/01/01 00:00:00 Ch 15 1601/01/01 00:00:00 Ch 16 1601/01/01 00:00:00 Event Search
Full Screen Flay Audio
Close

**B.** During video playback mode please press AVI bottom Save AVI to start.

**C.** Make up a filename and path than press **Save** bottom to start AVI backup.

**D.** Press AVI bottom **StopAVI** to finish backup.

# 6 NETWORK VIEWING & PLAYBACK

#### SYSTEM REQUIREMENT

CPU: Intel Celeron 1.6G MEMORY: 256MB. VGA: 32MB VGA RESOLUTION: 1024 x 768. OS: Windows XP / 2000

#### SUGGESTED REQUIREMENT

CPU:Intel P4 2.8G MEMORY:512MB or above VGA:64MB or above VGA RESOLUTION:1024 x 768 OS: Windows XP / 2000

## 6.1 IP ADDRESS SETUP ON PC SITE

Install cameras inside in LAN or use network cable to connect with PC. This is for IPInstallerEng.exe to set up IP address of cameras. If OS is Windows XP SP2 or above, the following Windows Security Alert will popup. Then, please click on <u>Unblock</u>.



Then, IPInstallerEng.exe will popup: DVR default IP address is 192.168.1.220

192.168.001.239 192.168.001.225 192.168.001.220		Name		D/	/R	
192.168.001.225 192.168.001.220						
192.168.001.220		TT)	100	140		
		IP	192	168	1	22
192.168.003.233		Netmask	255	255	255	0
192.168.001.218				11/05/201	1000000	0.00
192.168.001.155	_	Gateway	192	168	1	25
192.168.001.160		DNS 1	168	95	1	া
192.168.001.226		DIG I	1 100	23	1	
192.168.003.248		DNS 2	168	95	192	1
192.168.003.246		D 14				
192.168.003.222		Portl	1	8	U	
192.168.003.221		MAC	00.0F.0D.10.6B.B2			· B2
192.168.001.158	×		1			
Search Devic	;e				Subr	nit
	192.168.001.218 192.168.001.155 192.168.001.160 192.168.003.246 192.168.003.248 192.168.003.246 192.168.003.222 192.168.003.221 192.168.001.158 Search Devic	192.168.001.218         192.168.001.155         192.168.001.160         192.168.001.226         192.168.003.248         192.168.003.246         192.168.003.246         192.168.003.221         192.168.001.158         Search Device         drace and Cataway:	192.168.001.218       Gateway         192.168.001.155       DNS 1         192.168.001.226       DNS 1         192.168.003.248       DNS 2         192.168.003.246       Port1         192.168.001.158       MAC	192.168.001.218       Gateway       192         192.168.001.155       Gateway       192         192.168.001.160       DNS 1       168         192.168.001.226       DNS 1       168         192.168.003.248       DNS 2       168         192.168.003.221       Port1       192.168.003.221         192.168.001.158       MAC       00:	192.168.001.1218       Gateway       192       168         192.168.001.160       DNS 1       168       95         192.168.003.246       DNS 2       168       95         192.168.003.246       DNS 2       168       95         192.168.003.246       DNS 2       168       95         192.168.003.221       DNS 2       168       95         192.168.003.221       MAC       00:0F:0D       00:0F:0D         Search Device	192.168.001.155       Gateway       192       168       1         192.168.001.155       Gateway       192       168       1         192.168.001.160       DNS 1       168       95       1         192.168.001.226       DNS 1       168       95       1         192.168.003.246       DNS 2       168       95       192         192.168.003.221       DNS 2       168       95       192         192.168.003.221       Port1       80       80         192.168.001.158       MAC       00:0F:0D:10:6B       Subn

**NOTE:** Please input correct network parameters without blank spaces.

On Device Lists, it lists all servers. Click on one server and then its IP setting will show on the right side. After editing the parameters and clicking on Submit, the following dialogue box will popup. And, it will reboot the device with new parameters.

IPInstallerEng 🛛 🛛
Device Rebooting,Please wait
ОК

## 6.2 OPTIONAL MICROSOFT INTERNET EXPLORER SETUP OPTION 1: DISABLE ACTIVEX WARNING

- A. IE → Tools → Internet Options → Security → Custom Level → Security Settings → Download unsigned ActiveX controls → Enable or Prompt (recommend).
- B. IE → Tools → Internet Options → Security → Custom Level → Security Settings → Initialize and script ActiveX controls not marked as safe → Enable or Prompt (recommend).



5

Above three options are all based on select as the prompt. As indicated in the dialogue box. Please select "YES."

Internet	Explorer 🛛 🔀	
ß	An ActiveX control on this page might be unsafe to interact with other parts of the page. Do you want to allow this interaction?	
	Yes <u>N</u> o	

# **OPTION 2: ADD TO TRUSTED SITES** IE → Tools → Internet Options → Security → Trusted sites → Site

IE $\rightarrow$ Tools $\rightarrow$ Internet Options $\rightarrow$	Security $\rightarrow$ Trusted sites $\rightarrow$ Sites
Internet Options	Trusted sites
General       Security       Privacy       Content       Connections       Programs       Advanced         Select a Web content zone to specify its security settings.       Image: Connection of the security settings.       Image: Connection of the security settings.         Internet       Local intrane       Trusted sites       Bestricted         Trusted sites       This zone contains Web sites that you trust not to damage your computer or data.       Sites         No sites are in this zone.       Security level for this zone	You can add and remove Web sites from this zone. All Web sites in this zone will use the zone's security settings.
Custom Custom settings. - To change the settings, click Custom Level. - To use the recommended settings, click Default Level.	Require server verification (https:) for all sites of this zone
Custom Level Default Level	ОК Сапсе

# 6.3 LOGIN

# A. INSTALL ACTIVEX

→  e http://192.168.1.231/	V 🐓 🗙 Live Search
ile Edit View Favorites Tools Help	
C C DVR-04CH-Java&RTSP	🦾 🔹 🗟 🔹 🎰 Page 🔹 🎯 Tools 🔹
This website wants to install the following add-on: 'WATCH_16R.cab' from 'Video System co., Ltd.'. If	f you trust the website and the add-on and want to install it, click here

# **B.** START INSTALL ACTIVEX

Live Search
🏠 🔹 🔝 👘 🖶 🖓 Page 🔹 🎯 Tools 🔹 🎽
nstall ActiveX Control 🔥 e add-on and want to install it, click here 🗙 🗙
What's the Risk?
tore information

## C. ACCOUNT & PASSWORD LOGIN

After IP setup and connect to network or LAN, type IP address on IE Browser directly. The following User name & Password Login window will popup.

Connect to 192.1	68.1.212
	GPA
IP Camera	
<u>U</u> ser name:	😰 admin 💌
Password:	••••
	Remember my password
	OK Cancel

Default user name: admin Default password: admin

## 6.4 REMOTE CONTROL

## LIVE VIEWING





# **C.** SYSTEM TIME

Live viewing mode: The current live viewing time.

# **D. SCREEN FORMAT**

Switch screen format and click twice to switch different channels with full screen.

- **E. Full Screen.** Click again to return.
- **F. REC.** Videos are saved as AVI file.
- G. PLAY Playback
- H. 📕 Time-Point Backup
- Click and playback window will popup

# PLAYBACK by TIME SEARCH & EVENT SEARCH

Playba	ack Time ↑ Time Search ←	Ŷ
Com Out Com In   Auto Pan Co   Image: Com In	CH2 Search	

#### A. HDD Select

User can select HDD1 or HDD2 for playback

#### **B.** Playback Time

User can select the time then press "Time Search" for playback.

# C. Time Search

User can select the time then press "Time Search" for playback.

# **D. Event Search**

User can select event item by pressing "Event Search" for playback.

Click **I** to operate Time-Point backup.

# TIME-POINT BACKUP

First, select Start and End backup time which have to among the Record Time.

Record Time:	2008/05/23 11	1:32:58 ~ 2008/0	5/26 16:20:08	
Start End	2008/ 5/26	<ul> <li>■ 11:32:</li> <li>■ 12:20:</li> </ul>	58 · . 08 · .	
Save	Stop			

Then, click Save button to select the position on PC where the user is going to backup the data. After that, press OK button to start the backup.



Finally, double-click the left button of the mouse to open the saved backup file. The backup file

20080526113258.264 264 檔案 5,525 KB

will named as the time when start to backup, such as, (20080526113258.264) will be 2008/05/26 11:32:58.

# **OTHER FUNCTIONS**



# User can use other functions by clicking the left of mouse

## A. Snapshot:

User can save any single picture from image.

#### **B.** Performance:

User can select image quality (high, medium & low).

#### C. Use Overlay:

User can use Overlay function.

## **D. Play audio:**

User can play audio function by channel.

Note: remote user can receive audio from DVR & the audio will be saved with image when processing video backup.

#### 6.5 CONFIGURE

#### A. System - System Information

	System Information	
Server Information		
Server Name:	DVR-04CH	
MAC Address:	00:0f:0d:00:11:8e	
NTP Setting		
Time zone:	GMT-08:00	
NTP Server:	198.123.30.132	
Interval:	12Hours	

#### **A-1 SYSTEM INFORMATION**

SERVER NAME: This name will show on the IP Installer.

## **A-2 NTP Setting**

NTP SERVER: Revise the time of DVR via different NTP Server.

Note: Time zone and Interval cannot adjust in here (User can adjust both in DATE and TIME SETUP option of DVR Menu).

# **B. SYSTEM – USER MANAGEMENT**

	User Man	agement	
Anonymous Use	r Login		
	💿 YES	🔘 NO	Setting
Add User			
Username:			
Password:			
Confirm:			
			Add/Set
User List			
Username	User Group	Modify	Remove
admin	Administrator	Edit	

User Management provides 3 levels of limits of authority: Administrator (the highest), User, and Guest.

- Administrator: Possessing the highest level of authority to operate full functions within network.
- User: Having Live Image and Video Playback authority. Moreover, PTZ controlled is included as well.

Guest: Only have Live Image authority.

Default administrator account: Username: admin Password: admin

## **B-1. ANONYMOUS USER LOGIN:**

YES: Accept anonymous user login without password as guest login.

NO: Anonymous login unacceptable.

#### **B-2. USER MANAGEMENT:**

Add: Input Username and Password and then click on Add/Set to save.

Modify: Click on selected User name on User List and the following window

will popup. After inputting Password and Confirm Password, click on **OK**.

Remove: Click on selected User name on the user list and click on Remove.

	User Setup	
Username:	admin	
Password:		
Confirm:		ОК

#### C. SYSTEM / SYSTEM UPDATE

**C-1. Firmware Upgrade:** Click on the "Browse" button to select the latest firmware and then press "Upgrade" button to upgrade the firmware.

	System Upda	ate
Firmware Upgrade		
Firmware Version:	S1.0.10	
New Firmware:		瀏覽
		Upgrade

C-2. Load Default: There are three kinds of Settings. One is Load Setup From Default, another is Load Setup From and the other is Backup Setup

Load Default	
Load Setup From Default	Setting
Load Setup From:	瀏覽
	Setting
Backup Setup	Download

 Load Setup From Default: Press "Setting" button to load factory default.
 Load Setup From: Click on "Browse..." button to select DVR setting file and then press "Setting" button to upload the setting file to DVR.
 Backup Setup: Click on "Download" button to download the DVR setting file into the specific storage device.

#### **D. NETWORK – IP SETTING**

	IP Setting	
IP Assignment		
ODHCP		
💿 Static		
IP Address:	192.168.1.231	
Subnet Mask:	255.255.255.0	
Gateway:	192.168.1.254	
DNS 0:	168.95.1.1	
DNS 1:	168.95.192.1	
Port Assignment		
Web Page Port:	80	
UPnP		
UPnP:	Enabled Oisabled	ply

# **D-1. IP ASSIGNMENT**

- **DHCP:** In Dynamic Host Configuration Protocol (DHCP) mode, DHCP server will get setting done automatically.
- **STATIC IP:** Please input IP address, Subnet Mask, and Gateway based on network environment.

#### **D-2. PORT ASSIGNEMENT**

With IP Share (Router), the following Ports needed to be adjusted in case of conflict.

#### D-3. UPnP

If UPnP service is enabled on your computer, the DVR will automatically be detected and a new icon will be added to "My Network Places". However, if UPnP service is disabled, the DVR will not be detected automatically. **Note:** UPnP must be enabled on your computer.

#### E. NETWORK – PPPoE

	PPPoE	
PPPoE Setting		
🔵 Enabled 🛛 💿 🛛	lisabled	
Username:		
Password:		
Send mail after diale	d	
Enabled		
Subject:		Apply

## E-1. PPPoE SETTING

Click on Enabled to enable ADSL dial function. Username: Username for ADSL account. Password: Password for ADSL account.

After dialed successfully, new IP address will appear.

## E-2. SEND MAIL AFTER DIALED

Click on Enabled to enable SEND MAIL AFTER DIALED function.

#### **E-3. SUBJECT**

Mail subject.

## F. NETWORK / DDNS SETTING

	DDNS		
DDNS Setting			
🔵 Enabled 🛛 💿	Disabled		
Provider:	dyndns.org	*	
Hostname:			
Username:			
Password:			
Schedule Update:	0	Minutes	
State			
			Apply
Note:			

 Schedule Update: Feature of DDNS schedule update is designed for IP products which installed behind the ICS or NAT devices. Update range from every 5 (minutes) to 5000 (minutes) and 0 remain to off.

 Please note that the hostname will be blocked by DynDNS.org if schedule update is more than once every 5 minutes to 60 minutes. In general, schedule update in every 1440 minutes is recommended.

Click on Enabled to enable DDNS function.

#### F-1. DYNDNS.ORG

	DDNS		
DDNS Setting			
💿 Enabled 🛛 🔘	Disabled		
Provider:	dyndns.org	· ·	
Hostname:		]	
Username:		]	
Password:		]	
Schedule Update:	0	Minutes	
State			
			~
			~
			Apply

## **DDNS SETTING - DYNDNS.ORG**

PROVIDER: Select dyndns.org HOSTNAME: The registered hostname in DYNDNS.ORG. USERNAME: The registered username in DYNDNS.ORG. PASSWORD: The registered password in DYNDNS.ORG. SCHEDULE UPDATE: A period of time to update IP address.

#### STATE

- 1. Updating: Information update.
- 2. Idle: Stop service.
- 3. DDNS registered successfully, now log by http://<username>.ddns.com: Registered successfully.
- 4. Updating Failed, the name is already registered.
- 5. Updating Failed, please check your internet connection.

# F-2. DDNS.CAMNNDS.COM

	D	DNS
DDNS Setting		
OEnabled ③ Provider: Username:	Disabled ddns.camd	ldns.com 👻
Schedule Update:	10	Minutes
State		
IDEL.		~ ~
		Apply
Note:		
1. Schedule Update: I	Feature of DD	DNS schedule update is designed for

- Schedule update: Feature of DDNS schedule update is designed for IP products which installed behind the ICS or NAT devices. Update range from every 5 (minutes) to 5000 (minutes) and 0 remain to off.
- Please note that the hostname will be blocked by DynDNS.org if schedule update is more than once every 5 minutes to 60 minutes. In general, schedule update in every 1440 minutes is recommended.

## DDNS SETTING – DDNS.CAMDDNS.COM

PROVIDER: Select ddns.camddns.com USERNAME: The registered username in DDNS.CAMDDNS.COM. SCHEDULE UPDATE: A period of time to update IP address.

#### STATE

- 1. Updating: Information update.
- 2. Idle: Stop service.
- 3. DDNS registered successfully, now log by http://<username>.ddns.com: Registered successfully.
- 4. Updating Failed, the name is already registered.
- 5. Updating Failed, please check your internet connection.

## **DDNS Setting Steps:**

Press (1) "ENABLE" option to enable DDNS function and select (2)

"ddns.camddns.com" of the provider drop down list which is suggested to use. In

the following, insert (3) the username which the user wants to apply

(i.e. **DVR\_GODDNS** in here). After that, click (4) "Apply" button to apply a

DDNS domain name.

	DDNS	
DDNS Setting		
Enabled	Disabled	
Provider: 2.	ddns.camddns.c	com 💌
Username: 3.	DVR_GODDNS	
Schedule Update:	60	Minutes
State		
Updating		~
		~
1		4. Apply

Finally, the DVR domain name(5)(http://DVR\_GODDNS.ddns.camddns.com)

will be shown on the state block.

Enabled	Disabled	
Provider:	ddns.camddns.com	n 🗸
Jsername:	DVR_GODDNS	
Schedule Update:	60	Minutes
ite		
http://DVR_GODDN	S.ddns.camddns.com	n 🗠

- **NOTE:** 1. If the user selects another provider which is ddns2.ydsdvr.com, all of the setting steps are the same with ddns.camddns.com setting.
  - 2. However, if dyndns.org provider is selected, please go to <u>www.dyndns.org</u> website to register the account first. The user has to fill in the username, password and hostname for applying the account. After the user applied the account successfully, the dyndns.org will give the user a complete DDNS domain name.
  - 3. If setting up IP schedule update too frequently, the IP may be blocked. In general, schedule update every day (1440 minutes) is recommended.

# G. NETWORK / Mail & FTP

Click on "Motion" or "Alarm" option to enable Mail Setting and FTP Setting function.

	Mail & FTP	
Mail Setting: 🗌 Mot	ion 🗌 Alarm	
Mail Server:		
SMTP Port:	25	
Username:		
Password:		
Sender's Mail:		
Receiver's Mail:		
Bcc Mail:		
Event Subject:		
FTP Setting: 🗌 Mot	ion 🗌 Alarm	
FTP Server:		
Username:		
Password:		
Port:	21	
Path:		
		Apply

Mail Server: The IP address of Mail Server (i.e. mail.huntelec.com.tw).
SMTP Port: The port of SMTP (known as Simple Mail Transfer Protocol). (Default value is 25)
Username: The username while log in to the mail server.
Password: The password while log in to the mail server.
Sender's Mail: The sender's account when send the mail via this mail server.
Receiver's Mail: The receiver's mail address.
Bcc Mail: The receiver's mail address for Bcc Mail.
Event Subject: The subject of this mail. (Default value is ALARM MAIL)

FTP Server: The IP address of FTP Server.Username: The username while log in to the ftp server.Password: The password while log in to the ftp server.Port: The port number of file transmission. (Default value is 21)Path: The ftp path where the user wants to reserve the information.

## Finally, click on Apply button to reserve the setting. H. OTHERS / Player Downloaded

User can click "Run" button to download the player to local PC.

File Dow	nload - Security Warning	×
Do you	want to run or save this file?	
	Name: RéViewer.exe Type: Application From: 192.168.1.233 Run Save Cancel	
1	While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do n run or save this software. <u>What's the sisk?</u>	sot

## I. OTHERS/ Mobile Viewer

Click the drop down list of connection mode to select the sort of mobile viewer connection. Then click <u>Apply</u> to reserve the setting. There are JAVA / IPhone and 3GPP (MPEG4) two options. Moreover, the video quality can be setup as well.

	Mobile Viewer Setting	
Connection Mode:	JAVA & iPhone 🔽	
Video Quality:	High 🔽	
	[	Apply

## J. OTHERS / DVR Setting

DVR setting can be changed via the Internet.



# 7 3GPP APPLICATION & SETTING

3GPP (also known as 3<sup>rd</sup> Generation Partnership Project) is a corporation which formulate 3<sup>rd</sup>-generation communication standard specification. Via this wireless communication protocol, the 3G mobile can perform the remote control. The following example is operated by Sony Ericsson 3G mobile phone:





- \* 1. 3GPP BANDWIDTH: Minimum 30kbit /sec. per channel.
  2. CONNECTION NUMBERS: Maximum 16 people per channel.

# APPENDIX A: RECORDING TIME LAPSE (HOURS) FULL D1-720 x 480

	_ 0 11 1						160 GB	Ha	ard Di	sk			U	nit: Hour
	PICTURE QUALITY (KB)													
Recording Speed		LOW				MEDIUM	1			HIGH			Best	
(IPS)	simple	complex	average		simple	complex	average		simple	complex	average	simple	complex	average
	0.80	5.63	3.52		4.38	10.38	6.78		3.64	13.43	8.98	5.60	17.06	15.66
60	970	137	553		190	74	132		213	57	135	138	45	91
30	1941	275	1108		380	149	264		426	115	270	277	91	184
15	3883	551	2217		761	299	530		853	231	542	554	182	368
8	7281	1034	4157		1427	560	993		1600	433	1016	1040	341	690
4	14563	2068	8315		2855	1121	1988		3200	867	2033	2080	683	1381
250 GB Hard Disk Unit: Ho										nit: Hour				
						F	PICTURE	วบ	ALITY (	(KB)		 		
Recording Speed		LOW				MEDIUM	1			HIGH			Best	
( <b>IPS</b> )	simple	complex	average		simple	complex	average		simple	complex	average	simple	complex	average
	0.80	5.63	3.52		4.38	10.38	6.78		3.64	13.43	8.98	5.60	17.06	15.66
60	1517	215	866		297	116	206		333	90	211	216	71	143
30	3034	430	1732		594	233	413	ĺ	666	180	423	433	142	287
15	6068	861	3464		1189	467	828		1333	361	847	866	284	575
8	11377	1616	6496		2230	876	1553		2500	677	1588	1625	533	1079
4	22755	3232	12993		4461	1753	3107		5001	1355	3178	3250	1067	2158
							400 GB	H	ard Di	sk			U	nit: Hour
					-	F	PICTURE	วบ	ALITY (	(KB)		 -		
Recording Speed		LOW				MEDIUM	1			HIGH			Best	
(IPS)	simple	complex	average		simple	complex	average		simple	complex	average	simple	complex	average
	0.80	5.63	3.52		4.38	10.38	6.78		3.64	13.43	8.98	5.60	17.06	15.66
60	2427	344	1385		475	186	330		533	144	338	346	113	229
30	4854	689	2771		951	373	662		1066	289	677	693	227	460
15	9709	1379	5544		1903	747	1325		2133	578	1355	1387	455	921
8	18204	2585	10394		3569	1402	2485		4000	1084	2542	2600	853	1726
4	36408	5171	20789		7138	2804	4971		8001	2168	5084	5201	1707	3454
							500 GB	Η	ard Di	sk			U	nit: Hour
					r.	F	PICTURE	วบ	ALITY	(KB)		 L		
Recording Speed		LOW				MEDIUM	1			HIGH			Best	
(IPS)	simple	complex	average		simple	complex	average		simple	complex	average	simple	complex	average
	0.80	5.63	3.52		4.38	10.38	6.78	ľ	3.64	13.43	8.98	5.60	17.06	15.66

60	3034	430	1732		549	233	413		666	180	423		433	142	287	
30	6068	861	3464	1	1189	467	828	ĺ	1333	361	847		866	284	575	
15	12136	1723	6929		2379	934	1656		2667	722	1694		1733	569	1151	
8	22755	3232	12993		4461	1753	3107		5001	1355	3178		3250	1067	2158	
4	45511	6464	25987		8923	3506	6214		10002	2710	6356		6501	2134	4317	
750 GBHard Disk Unit: H										nit: Hour						
						F	PICTURE	ງບ	ALITY (	KB)						
Recording Speed		LOW				MEDIUN	1		HIGH				Best			
(IPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average	
	0.80	5.63	3.52		4.08	10.38	6.78	ĺ	3.64	13.43	8.98		5.60	17.06	15.66	
60	4551	646	2598		892	350	621	ĺ	1000	271	635		650	213	431	
30	9102	1292	5197		1784	701	1242	ĺ	2000	542	1271		1300	426	863	
15	18204	2585	10349		3569	1402	2485		4000	1084	2542		2600	853	1726	
8	34133	4848	19490		6692	2629	4660		7501	2032	4766		4876	1601	3238	
4	68266	9696	38981		13385	5259	9322		15003	4065	9534		9752	3202	6477	
							1THard	D	isk					U	nit: Hour	
				_	_	F	PICTURE	טב	ALITY (	KB)		_	-			
Recording Speed		LOW	_			MEDIUM			HIGH				Best			
(IPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average	
	0.80	5.63	3.52		4.08	10.38	6.78		3.64	13.43	8.98		5.60	17.06	15.66	
60	6068	861	3464		1189	467	828		1333	361	847		866	284	575	
30	12136	1723	6929		2379	934	1656	ĺ	2667	722	1694		1733	569	1151	
15	24272	3447	13859		4759	1869	3314		5334	1445	3389		3467	1138	2302	
8	45511	6464	25987		8923	3506	6214		10002	2710	6356		6501	2134	4317	
4	91022	12929	51975		17847	7012	12429		20004	5421	12712		13003	4269	8636	

# Half D1- 720x240

Network         Network         Network         Network         Network         Network         Network           Network         Network         Network         Network         Network           Network         Network         Network         Network           Network         Network         Network         Network         Network           Network         Network         Network         Network         Network           Network         Network         Network         Network         Network           Network         Network         Network         Network         Network           Network         Network         Network         Network           Network         Network         Network         Network           Network         Network         Network         Network           Network         Network<		80 GB Hard Disk Unit: Hou													nit: Hour		
Recording (PFS)         Imple         ormple         average         simple         ormplex         average         simple         ormplex         average           100         380         240         2.00         6.00         4.00         5.00         1.00         7.00         1.00								PICTURE	QI	JALITY	(KB)						
speed (PF)         simple         complex         average average         simple         complex         average average         simple         complex         average average         simple         complex         average average         simple         complex         average         simple         complex         simple         complex         simple         complex         simple         complex         simple         complex         simple	Recording		LOW				MEDIUM HIGH								BEST		
(+7)         1.00         3.80         2.40         2.00         6.00         4.00         5.00         10.00         7.50         6.00         17.00         11.50           120         194         51         122         245         194         64         120         38         19         28         32         11         21           60         388         102         245         194         64         120         77         38         57         64         22         43           30         776         204         490         388         129         258         115         77         116         129         45         87           30         776         204         490         388         129         258         115         175         116         129         455         171         328           4         563         3679         912         191         1165         520         191         486         171         328           8         102         246         193         192         281         116         500         10.00         7.50         64         22         43 <tr< td=""><td></td><td>simple</td><td>complex</td><td>average</td><td></td><td>simple</td><td>complex</td><td>average</td><td>ĺ</td><td>simple</td><td>complex</td><td>average</td><td></td><td>simple</td><td>complex</td><td>average</td></tr<>		simple	complex	average		simple	complex	average	ĺ	simple	complex	average		simple	complex	average	
120         194         51         122         97         32         64         38         19         28         32         11         21           60         388         102         245         194         64         129         38         57         64         22         43           30         776         204         490         388         129         258         155         77         116         129         45         87           15         153         406         980         146         485         970         165         232         291         436         465         171         328           4         562         1533         3679         2912         970         1941         116         562         291         436         465         171         328           60         76         0         800         200         600         4.00         500         10.00         7.50         64         22         43           30         1553         408         980         776         258         517         116         129         45         87           30         1553<	(FF3)	1.00	3.80	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50	
60         388         102         245         194         64         129         77         38         67         64         22         43           30         776         204         490         388         129         258         155         77         116         129         45         87           15         1553         408         980         776         258         517         38         77         166         155         232         582         171         328         970         342         656           4         5825         1533         3679         2912         970         1941         165         582         673         970         342         656           LOW         MEDUM         HIGH         882         171         328         171         328           100         3.80         2.40         600         4.00         500         10.00         7.50         6         6.00         170         16         6.00         170         15         577         116         129         45         77         16         129         45         77         16         129         45	120	194	51	122		97	32	64	ĺ	38	19	28		32	11	21	
30         776         204         490         388         129         258         155         77         116         129         45         87           15         1553         408         980         776         258         517         310         155         232         258         91         174           8         2912         766         1339         776         258         517         166         582         873         970         342         656           COUNT STORE QUALITY (KB         Unit: Hour           Recording (PPS)         100         3.80         2.40         80.00         4.00         80.00         4.00         80.00         4.00         80.00         4.00         80.00         7.70         38         57         6.0         10.00         7.60         6.00         17.00         11.60         6.00         17.00         11.60         6.00         17.00         11.60         80.00         17.00         11.60         6.00         17.00         11.60         6.00         17.00         11.60         6.00         17.00         11.60         6.00         17.00         10.00         1.00         1.00         1.00	60	388	102	245		194	64	129	ĺ	77	38	57		64	22	43	
151534089807762585173101552322589111748291276618301466485970582201430485171328458215333679201297019111165582873970342666Conspan="6">Conspan="6"Speed (prsy)Conspan="6">Conspan="6">Conspan="6">Conspan="6">Conspan="6">Conspan="6"20150010.007.004.001.001203.881022.45194641297773.88577642.204.0012103.881022.45194641291557.711161294.57.713001554.089.007.762.685171061206.001.007.506.001.001.0031015515336795635711061557.711161294.57.711.61206.01.013.01.013.001.013.001.013.01.013.011.013.01.013.01.013.01.013.01.013.0	30	776	204	490		388	129	258	Ì	155	77	116		129	45	87	
82912768183914564859705822914304851713284582153336792912297019111165582873970342666Recording (PPS)LOWFICTURE ULITY (KB)Unit: HIGHInit: HIGHInit: HIGHRecording (PPS)1.003.802.402.006.004.005.0010.007.506.0017.0011.501203881022.451946412977385.771161296.0017.0011.501203881022.4519464129773101552.3263010.017.50642.24.311453106817196115535171051557.771161294.5613130015534089807762.5851713101552.327003.426.563068171961155351710516213101651713.426.5630681719611553517105112301165174719416.5613130715630667358582519413882.301165174719416.5613130852515333	15	1553	408	980		776	258	517		310	155	232		258	91	174	
45821533679291297019411165582873970342656Recording Speed (PPS)verage simpleverage simplecomplexverage simplecomplexverage simplecomplexverage simplecomplexverage simplecomplexverage simplecomplexverage 	<td>8</td> <td>2912</td> <td>766</td> <td>1839</td> <td></td> <td>1456</td> <td>485</td> <td>970</td> <td></td> <td>582</td> <td>291</td> <td>436</td> <td></td> <td>485</td> <td>171</td> <td>328</td>	8	2912	766	1839		1456	485	970		582	291	436		485	171	328
Ideal Bir U bit is the control of th	4	5825	1533	3679		2912	970	1941		1165	582	873		970	342	656	
PICTURE QUALITY (KB)           PICTURE QUALITY (KB)           HIGH         HIGH         HIGH         Marpine Complex average input i		160 GB Hard Disk													Un	it: Hour	
Networking Speed (PPS)         Imple         Imple         Nomplex         Nomplex <td>Peoperding</td> <td colspan="10">PICTURE QUALITY (KB)</td> <td></td> <td></td> <td></td> <td></td>	Peoperding	PICTURE QUALITY (KB)															
simple (PB)         simple 1.00         3.80         2.40         simple 2.00         6.00         4.00         5.00         10.00         7.50         6.00         17.00         11.50           120         388         102         245         194         64         129         5.00         10.00         7.50         6.00         17.00         11.50           300         1553         408         980         776         258         517         155         7.77         116         120         455         87           300         1553         408         980         776         258         517         1035         232         258         91         177         38         577         116         120         455         87           300         1553         408         980         776         258         517         1035         621         310         465         91         177         38         777         1941         680         313           4         1650         306         738         5825         191         308         230         1165         517         1941         680         3131           8	Speed		LOW	1			MEDIUM	1			HIGH	L.			BEST		
1.00       3.80       2.40       2.00       6.00       4.00       5.00       10.00       7.50       6.00       17.00       11.50         120       388       102       245       194       64       129       77       38       57       64       22       43         60       776       204       490       388       129       258       155       77       116       129       45       87         30       1553       408       980       776       258       517       1035       621       310       465       517       182       349         8       5625       1533       3679       2912       970       1941       1165       582       873       970       342       666         4       1165       306       7358       5825       1941       388       2330       1165       1747       1941       685       1313         EVENTER OWELITY (KB)       IDOW       MEDUM       HIGH       800       17.00       11.50         800       1606       159       382       303       101       202       101       355       680         120<	(PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average	
120         388         102         245         194         64         129         77         38         57         64         22         43           60         776         204         490         388         129         258         155         77         116         129         455         87           300         1553         408         980         776         258         517         106         129         45         87           3106         817         1961         1553         517         1035         621         310         465         232         258         117         182         349           8         5825         1533         3679         626         191         383         233         1165         174         194         685         1313           4         1165         366         756         5625         1941         383         233         1165         174         194         685         1313           5         507         164         129         77         164         222         43           6         100         3.06         756         562	、 <i>,</i>	1.00	3.80	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50	
60         776         204         490         388         129         258         155         77         116         129         455         87           30         1553         408         980         776         258         517         105         221         310         155         232         258         91         174           15         3106         817         1961         155         517         1035         621         310         465         517         182         349           4         1165         306         733         3679         2912         970         1941         1165         582         873         970         342         656           4         1165         3066         7358         5825         1941         3883         203         1165         1747         1941         685         1313           EVENTER VENTER	120	388	102	245		194	64	129		77	38	57		64	22	43	
30         155         408         980         776         258         517         101         155         232         258         91         174           15         3106         817         1961         1553         517         1035         621         310         465         517         182         349           8         5825         1533         3679         2912         970         1941         165         582         873         970         342         656           4         1165         3066         7358         5825         1941         3883         230         1165         1747         1941         665         1313           CUTCUP UNLITY (KB)         101         572         1941         5825         1941         1165         582         873         517         1941         685         1313           VECURE UNLITY (KB)           FICTURE UNLITY (KB)           5969         100         3.03         101         202         101         316         686         1103         166         1101         35         686           120         606         159         382	60	776	204	490		388	129	258		155	77	116		129	45	87	
15         3106         817         1961         1553         517         1035         621         310         465         517         182         349           8         5825         1533         3679         2912         970         1941         1165         582         873         970         342         656           4         11650         3066         7358         5825         1941         388         230         1165         1747         1941         685         1313           USE USE BATE DISE         1941         388         230         1165         1747         1941         685         1313           USE	30	1553	408	980		776	258	517		310	155	232		258	91	174	
8         5825         1533         3679         2912         970         1941         1165         582         873         970         342         656           4         11650         3066         7358         5825         1941         3883         2330         1165         1747         1941         685         1313           USE	15	3106	817	1961		1553	517	1035		621	310	465		517	182	349	
4116503066735858251941388323301165174719416851313Recording Speed (PPS)LOWFUETURE UALITY (KB)10.03.802.40MEDIUMHIGHsimplecomplexaverage\$implecomplexaverage\$implecomplexaverage\$implecomplexaverage\$implecomplexaverage1.003.802.402.006.004.005.0010.007.506.0017.0011.50120606159382303101202121606901013568600121331976660620240448524236340414227330324276381532121340480848524236340414227331548541277306524278091618970485727809285547418201147114710230341606120211615351026418204790114919023034606818401820273030341070205245151730341618161618601860186018601860180010702052 <t< td=""><td>8</td><td>5825</td><td>1533</td><td>3679</td><td></td><td>2912</td><td>970</td><td>1941</td><td></td><td>1165</td><td>582</td><td>873</td><td></td><td>970</td><td>342</td><td>656</td></t<>	8	5825	1533	3679		2912	970	1941		1165	582	873		970	342	656	
250 GB Hard Disk         Unit: Hour           Recording Speed (PPS)         Imple complex average         Imple Complex Avera	4	11650	3066	7358		5825	1941	3883		2330	1165	1747		1941	685	1313	
PICTURE QUALITY (KB)           Recording Speed (PPS)         LOW         MEDIUM         B         HIGH         simple         simple         complex         average         simple         simple         complex         average         simple         complex         simple         comple								250 GB	Η	ard Di	sk				Un	it: Hour	
Incoming Speed (PPS)         LOW         MEDIUM         Imple         HIGH         simple         simple         complex         average         simple         <	Recording					1		PICTURE	Ql	JALITY	(KB)						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Speed		LOW				MEDIUM	1			HIGH				BEST		
1.00       3.80       2.40       2.00       6.00       4.00       5.00       10.00       7.50       6.00       17.00       11.50         120       606       159       382       303       101       202       121       600       90       101       35       68         600       1213       319       766       606       202       404       485       242       121       181       202       71       136         300       2427       638       1532       1213       404       808       485       242       363       404       142       273         15       4854       1277       3065       2427       809       1618       970       485       727       809       285       547         8       9102       2395       5748       4551       1517       3034       1820       910       1365       1517       535       1026         4       18204       4790       11497       9102       3034       6068       3640       1820       2730       3034       1070       2052         LOW       MEDIUM       MEDIUM       HIGH       HIGH <td< td=""><td>(PPS)</td><td>simple</td><td>complex</td><td>average</td><td></td><td>simple</td><td>complex</td><td>average</td><td></td><td>simple</td><td>complex</td><td>average</td><td></td><td>simple</td><td>complex</td><td>average</td></td<>	(PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average	
120       606       159       382       303       101       202       121       600       90       101       35       68         60       1213       319       766       606       202       404       242       121       181       202       71       136         30       2427       638       1532       1213       404       808       485       242       363       404       142       273         15       4854       1277       3065       2427       809       1618       970       485       727       809       285       547         8       9102       2395       5748       4551       1517       3034       1820       910       1365       1517       535       1026         4       18204       4790       11497       9102       3034       6068       3640       1820       2730       3034       1070       2052         4       18204       4790       11497       9102       3034       6068       3640       1820       2730       3034       1070       2052         LOW       MEDIUM       MEDIUM       MEDIUM       HIGH       HIGH		1.00	3.80	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50	
60       1213       319       766       606       202       404       242       121       181       202       71       136         30       2427       638       1532       1213       404       808       485       242       363       404       142       273         15       4854       1277       3065       2427       809       1618       970       485       727       809       285       547         8       9102       2395       5748       4551       1517       3034       1820       910       1365       1517       535       1026         4       18204       4790       11497       9102       3034       6068       3640       1820       2730       3034       1070       2052         EVOUGEB Hard Disk       Unit: Hour         Dick       MEDIUM       HIGH       BEST       BEST	120	606	159	382		303	101	202		121	60	90		101	35	68	
30       2427       638       1532       1213       404       808       485       242       363       404       142       273         15       4854       1277       3065       2427       809       1618       970       485       727       809       285       547         8       9102       2395       5748       4551       1517       3034       1820       910       1365       1517       535       1026         4       18204       4790       11497       9102       3034       6068       3640       1820       2730       3034       1070       2052         FICTURE QUALITY (KB)         LOW       MEDIUM       HIGH       BEST	60	1213	319	766		606	202	404		242	121	181		202	71	136	
15       4854       1277       3065       2427       809       1618       970       485       727       809       285       547         8       9102       2395       5748       4551       1517       3034       1820       910       1365       1517       535       1026         4       18204       4790       11497       9102       3034       6068       3640       1820       2730       3034       1070       2052 <b>HOU GB Hard Disk</b> Unit: Hour         PICTURE QUALITY (KB)         LOW       MEDIUM       HIGH       BEST	30	2427	638	1532		1213	404	808		485	242	363		404	142	273	
8     9102     2395     5748     4551     1517     3034     1820     910     1365     1517     535     1026       4     18204     4790     11497     9102     3034     6068     3640     1820     2730     3034     1070     2052       FICTURE QUALITY (KB)       LOW     MEDIUM     HIGH     BEST	15	4854	1277	3065		2427	809	1618		970	485	727		809	285	547	
4       18204       4790       11497       9102       3034       6068       3640       1820       2730       3034       1070       2052 <b>400 GB Hard Disk</b> Unit: Hour         PICTURE QUALITY (KB)         LOW       MEDIUM       HIGH       BEST	8	9102	2395	5748		4551	1517	3034		1820	910	1365		1517	535	1026	
400 GB Hard Disk     Unit: Hour       PICTURE QUALITY (KB)       LOW     MEDIUM     HIGH     BEST	4	18204	4790	11497		9102	3034	6068		3640	1820	2730		3034	1070	2052	
PICTURE QUALITY (KB) LOW MEDIUM HIGH BEST		i						400 GB	H	ard Di	sk				Un	it: Hour	
LOW MEDIUM HIGH BEST					1	ł		PICTURE	Ql	JALITY	(KB)			i			
			LOW				MEDIUM	1			HIGH				BEST		

(PPS)	simple	complex	average	sir	mple	complex	average		simple	complex	average	simple	complex	average
	1.00	3.80	2.40	2	2.00	6.00	4.00		5.00	10.00	7.50	6.00	17.00	11.50
120	970	255	612	4	485	161	323		194	97	145	161	57	109
60	1941	511	1226	g	970	323	646	ĺ	388	194	291	323	114	218
30	3883	1022	2452	19	941	647	1294	ĺ	776	388	582	647	228	437
15	7767	2044	4905	3	883	1294	2588		1553	776	1164	1294	456	875
8	14563	3832	9197	7	281	2427	4854		2912	1456	2184	2427	856	1641
4	29127	7665	18396	14	4563	4854	9708		5825	2912	4368	4854	1713	3283
	500 GB	Ha	ard Dis	sk			Un	it: Hour						
							PICTURE	Ql	JALITY	(KB)				
Recording		LOW				MEDIUM	1			HIGH			BEST	
	simple	complex	average	sir	mple	complex	average		simple	complex	average	simple	complex	average
(FF3)	1.00	3.80	2.40	2	2.00	6.00	4.00		5.00	10.00	7.50	6.00	17.00	11.50
120	1213	319	766	6	606	202	404		242	121	181	202	71	136
60	2427	638	1532	1:	213	404	808		485	242	363	404	142	273
30	4854	1277	3065	24	427	809	1618	ĺ	970	485	727	809	285	547
15	9709	2555	6132	4	854	1618	3236		1941	970	1455	1618	571	1094
8	18204	4790	11497	9	102	3034	6068		3640	1820	2730	3034	1070	2052
Л	26409	0504	00004	4.0	2004	0000	40400	1	7001	3640	5460	0000	2141	4104
4	30408	9581	22994	18	5204	6068	12136		7201	5040	5400	6068	2141	4104
*	30408	9581	22994	18	5204	6068	12136 750 GB	Ha	ard Dis	sk	5400	6068	Un	it: Hour
	30408	9581	22994	10	5204	6068	12136 <b>750 GB</b> PICTURE	<b>На</b> QI	JALITY	<b>sk</b> (КВ)	5460	6008	Un	it: Hour
Recording	30408	LOW	22994		5204	MEDIUM	12136 <b>750 GB</b> PICTURE	Ha Ql	JALITY	<b>sk</b> (КВ) НІGH	5460	6068	Un	it: Hour
Recording Speed	simple	LOW complex	average	sir	mple	MEDIUM	12136 750 GB PICTURE 1 average	<b>H</b> a Ql	JALITY simple	(KB) HIGH	average	simple	BEST complex	it: Hour average
Recording Speed (PPS)	simple 1.00	LOW complex 3.80	average 2.40	sir 2	mple 2.00	MEDIUM complex 6.00	12136 750 GB PICTURE 1 average 4.00	Ha QI	JALITY simple 5.00	sk (KB) HIGH complex 10.00	average 7.50	simple 6.00	BEST complex 17.00	average 11.50
Recording Speed (PPS)	simple 1.00 1820	LOW complex 3.80 479	22994 average 2.40 1149	sir 2	mple 2.00	MEDIUM complex 6.00 303	12136 750 GB PICTURE 1 average 4.00 606	Ha Ql	JALITY simple 5.00 364	3040           sk           (KB)           HIGH           complex           10.00           182	average 7.50 273	simple 6.00 303	BEST complex 17.00	average 11.50
Recording Speed (PPS) 120 60	simple 1.00 1820 3640	LOW complex 3.80 479 958	22994 average 2.40 1149 2299	sir 2 9	mple 2.00 910 820	MEDIUM complex 6.00 303 606	12136 750 GB PICTURE 1 average 4.00 606 1213	<b>H</b> a QI	JALITY simple 5.00 364 728	3040           sk           (KB)           HIGH           complex           10.00           182           364	average 7.50 273 546	simple 6.00 303 606	2141 Un BEST complex 17.00 107 214	average 11.50 205 410
Recording Speed (PPS) 120 60 30	simple 1.00 1820 3640 7281	2581 LOW complex 3.80 479 958 1916	22994 average 2.40 1149 2299 4598	sir 2 11 30	mple 2.00 910 820 640	MEDIUM complex 6.00 303 606 1213	12136 750 GB PICTURE 1 average 4.00 606 1213 2426	H: QI	JALITY           simple           5.00           364           728           1456	3040           sk           (KB)           HIGH           complex           10.00           182           364           728	average 7.50 273 546 1092	simple 6.00 303 606 1213	2141 Un BEST complex 17.00 107 214 428	average 11.50 205 410 820
Recording Speed (PPS) 120 60 30 15	simple 1.00 1820 3640 7281 14563	29581 LOW complex 3.80 479 958 1916 3832	22994 average 2.40 1149 2299 4598 9197	sir 2 9 11 30 72	mple 2.00 910 820 640 281	MEDIUM complex 6.00 303 606 1213 2427	12136 750 GB PICTURE 1 average 4.00 606 1213 2426 4854	Ha Ql	JALITY           simple           5.00           364           728           1456           2912	3040           sk           (KB)           HIGH           complex           10.00           182           364           728           1456	average 7.50 273 546 1092 2184	simple 6.00 303 606 1213 2427	2141 Un BEST complex 17.00 107 214 428 856	average           11.50           205           410           820           1641
+           Recording           Speed           (PPS)           120           60           30           15           8	simple 1.00 1820 3640 7281 14563 27306	LOW complex 3.80 479 958 1916 3832 7185	22994 average 2.40 1149 2299 4598 9197 17245	sir 2 2 11 30 7/ 13	mple 2.00 910 820 640 281 3653	MEDIUM complex 6.00 303 606 1213 2427 4551	12136 750 GB PICTURE 1 average 4.00 606 1213 2426 4854 9102	<b>Н</b> а Q(	7261           ard Dis           JALITY           simple           5.00           364           728           1456           2912           5461	3040           sk           (KB)           HIGH           complex           10.00           182           364           728           1456           2730	average 7.50 273 546 1092 2184 4095	simple 6.00 303 606 1213 2427 4551	2141 Un BEST complex 17.00 107 214 428 856 1606	4104 it: Hour average 11.50 205 410 820 1641 3078
+           Recording           Speed           (PPS)           120           60           30           15           8           4	simple 1.00 1820 3640 7281 14563 27306 54613	LOW complex 3.80 479 958 1916 3832 7185 14371	22994 average 2.40 1149 2299 4598 9197 17245 34492	sir 2 3 11 13 27	mple 2.00 910 820 640 281 3653 7306	MEDIUM complex 6.00 303 606 1213 2427 4551 9102	12136 750 GB PICTURE 1 average 4.00 606 1213 2426 4854 9102 18204		7261           ard Dis           JALITY           simple           5.00           364           728           1456           2912           5461           10922	3040           5k           (KB)           HIGH           complex           10.00           182           364           728           1456           2730           5461	average 7.50 273 546 1092 2184 4095 8191	simple 6.00 303 606 1213 2427 4551 9102	2141 Un BEST complex 17.00 107 214 428 856 1606 3212	4104 it: Hour average 11.50 205 410 820 1641 3078 6157
+           Recording           Speed           (PPS)           120           60           30           15           8           4	simple 1.00 1820 3640 7281 14563 27306 54613	LOW complex 3.80 479 958 1916 3832 7185 14371	22994 average 2.40 1149 2299 4598 9197 17245 34492	11 sir 2 9 11 30 77 13 27	mple 2.00 910 820 640 281 3653 7306	MEDIUM complex 6.00 303 606 1213 2427 4551 9102	12136 750 GB PICTURE 1 average 4.00 606 1213 2426 4854 9102 18204 1T Hard	<b>H</b> וווווווווווווווווווווווווווווווווווו	7281           ard Dis           JALITY           simple           5.00           364           728           1456           2912           5461           10922           isk	3040           sk           (KB)           HIGH           complex           10.00           182           364           728           1456           2730           5461	average 7.50 273 546 1092 2184 4095 8191	simple 6.00 303 606 1213 2427 4551 9102	2141 Un BEST complex 17.00 107 214 428 856 1606 3212 Unit	4104 it: Hour average 11.50 205 410 820 1641 3078 6157 t: Hour
Free         Recording           Speed         (PPS)           120         60           30         15           8         4	simple 1.00 1820 3640 7281 14563 27306 54613	2581 LOW complex 3.80 479 958 1916 3832 7185 14371	22994 average 2.40 1149 2299 4598 9197 17245 34492	sir 2 9 11 30 72 13 27	mple 2.00 910 820 640 281 3653 7306	MEDIUM complex 6.00 303 606 1213 2427 4551 9102	12136 750 GB PICTURE 1 average 4.00 606 1213 2426 4854 9102 18204 18204 1T Hard PICTURE	н. QI О О О О О	7281           ard Dis           JALITY           simple           5.00           364           728           1456           2912           5461           10922           isk           JALITY	3040         sk         (KB)         HIGH         complex         10.00         182         364         728         1456         2730         5461         (KB)	average 7.50 273 546 1092 2184 4095 8191	simple 6.00 303 606 1213 2427 4551 9102	2141 Un BEST complex 17.00 107 214 428 856 1606 3212 Unit	4104 it: Hour average 11.50 205 410 820 1641 3078 6157 t: Hour
Recording Speed (PPS) 120 60 30 15 8 4 4 Recording	simple 1.00 1820 3640 7281 14563 27306 54613	LOW complex 3.80 479 958 1916 3832 7185 14371 LOW	22994 average 2.40 1149 2299 4598 9197 17245 34492	18 sir 2 9 11 30 72 13 27	mple 2.00 910 820 640 281 3653 7306	MEDIUM complex 6.00 303 606 1213 2427 4551 9102 MEDIUM	12136 750 GB PICTURE 1 average 4.00 606 1213 2426 4854 9102 18204 18204 1T Hard PICTURE	<b>Η</b> : Qι Ο Ο Ο Ο	7281           ard Dis           JALITY           simple           5.00           364           728           1456           2912           5461           10922           isk	3040         5k         (KB)         HIGH         complex         10.00         182         364         728         1456         2730         5461         (KB)         HIGH	average 7.50 273 546 1092 2184 4095 8191	simple 6.00 303 606 1213 2427 4551 9102	2141 Un BEST complex 17.00 107 214 428 856 1606 3212 Unit BEST	4104 it: Hour average 11.50 205 410 820 1641 3078 6157 t: Hour
Recording Speed (PPS) 120 60 30 15 8 4 4 Recording Speed (PPS)	simple 1.00 1820 3640 7281 14563 27306 54613 simple	2581 LOW complex 3.80 479 958 1916 3832 7185 14371 LOW complex	22994 average 2.40 1149 2299 4598 9197 17245 34492 34492	18 sir 2 9 11 30 72 13 27	mple 2.00 910 820 640 281 3653 7306 mple	MEDIUM complex 6.00 303 606 1213 2427 4551 9102 MEDIUM complex	12136 750 GB PICTURE 1 average 4.00 606 1213 2426 4854 9102 18204 18204 1T Hard PICTURE	<b>H</b> ווו ג ג ג ג ג ג ג ג ג ג ג ג ג	7281           ard Dis           JALITY           simple           5.00           364           728           1456           2912           5461           10922           isk           JALITY	3040           5k           (KB)           HIGH           complex           10.00           182           364           728           1456           2730           5461           (KB)           HIGH           complex	average 7.50 273 546 1092 2184 4095 8191 average	simple 6.00 303 606 1213 2427 4551 9102 simple	2141 Un BEST complex 17.00 107 214 428 856 1606 3212 Unit BEST complex	4104         it: Hour         average         11.50         205         410         820         1641         3078         6157         t: Hour         average
Recording Speed (PPS) 120 60 30 15 8 4 4 Recording Speed (PPS)	simple 1.00 1820 3640 7281 14563 27306 54613 54613 simple 1.00	Jose           LOW           complex           3.80           479           958           1916           3832           7185           14371           LOW           complex           3.80	22994 average 2.40 1149 2299 4598 9197 17245 34492 average 2.40	18 sir 2 9 11 30 72 13 27	mple 2.00 210 281 3653 7306 mple 2.00	MEDIUM complex 6.00 303 606 1213 2427 4551 9102 MEDIUM complex 6.00	12136 750 GB PICTURE 1 average 4.00 606 1213 2426 4854 9102 18204 11 Hard PICTURE 1 average 4.00		7281           ard Dis           JALITY           simple           5.00           364           728           1456           2912           5461           10922           isk           JALITY	3040         5k         (KB)         HIGH         complex         10.00         182         364         728         1456         2730         5461         (KB)         HIGH         complex         10.00	average 7.50 273 546 1092 2184 4095 8191 average 7.50	simple 6.00 303 606 1213 2427 4551 9102 simple 6.00	2141 Un BEST complex 17.00 107 214 428 856 1606 3212 Unit BEST complex 17.00	4104         it: Hour         average         11.50         205         410         820         1641         3078         6157         t: Hour         average         11.50
Recording Speed (PPS) 120 60 30 15 8 4 4 Recording Speed (PPS) 120	simple 1.00 1820 3640 7281 14563 27306 54613 54613 simple 1.00 2427	9581           LOW           complex           3.80           479           958           1916           3832           7185           14371           LOW           complex           3.80           638	22994 average 2.40 1149 2299 4598 9197 17245 34492 average 2.40 1532	sir 2 9 11 30 77 13 27 5 13 27 13 27 13 27 13 27	mple 2.00 210 281 3653 7306 mple 2.00 213	MEDIUM complex 6.00 303 606 1213 2427 4551 9102 MEDIUM complex 6.00 404	12136 750 GB PICTURE 1 average 4.00 606 1213 2426 4854 9102 18204 11 Hard PICTURE 1 average 4.00 808	<b>Η</b> : αι Ο Ο Ο Ο Ο Ο	7281           ard Dis           JALITY           simple           5.00           364           728           1456           2912           5461           10922           isk           JALITY           simple           5.00           485	3040         5k         (KB)         HIGH         complex         10.00         182         364         728         1456         2730         5461         (KB)         HIGH         complex         10.00         242	average 7.50 273 546 1092 2184 4095 8191 average 7.50 363	simple 6.00 303 606 1213 2427 4551 9102 simple 6.00 404	2141 Un BEST complex 17.00 107 214 428 856 1606 3212 Unit BEST complex 17.00 142	4104         it: Hour         average         11.50         205         410         820         1641         3078         6157         t: Hour         average         11.50         223

30	9709	2555	6132	4854	1618	3236	1941	970	1455	1618	571	1094
15	19418	5110	12264	9709	3236	6472	3883	1941	2912	3236	1142	2189
8	36408	9581	22994	18204	6068	12136	7281	3640	5460	6068	2141	4104
4	72817	19162	45989	36408	12136	24272	14563	7281	10922	12136	4283	8209

# CIF-360x240

	80 GB Hard Disk Unit: Hour													t: Hour	
							PICTURE	QL	JALITY	(KB)					
Recording		LOW				MEDIUM	1			HIGH				BEST	
Speed	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
(PPS)	0.50	1.90	1.20		1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88
240	194	51	122		97	32	64		38	19	28		32	11	21
120	388	102	245		194	64	129		77	38	57		64	22	43
60	776	204	490		388	129	258		155	77	116		129	44	86
30	1553	408	980		776	258	517		310	155	232		258	88	173
15	3106	817	1961		1553	517	1035		621	310	465		517	177	347
8	5825	1533	3679		2912	970	1941		1165	582	873		970	332	651
4	11650	3066	7358		5825	1941	3883		2330	1165	1747		1941	665	1303
	160 GB Hard Disk													Uni	it: Hour
							PICTURE	Q	JALITY	(KB)					
Recording		LOW				MEDIUM	1			HIGH				BEST	
	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
(FF3)	0.50	1.90	1.20		1.00	3.00	2.00	ĺ	2.50	5.00	3.75		3.00	8.75	5.88
240	388	102	245		194	64	129		77	38	57		64	22	43
120	776	204	490		388	129	258	ĺ	155	77	116		129	44	86
60	1553	408	980		776	258	517		310	155	232		258	88	173
30	3106	817	1961		1553	517	1035		621	310	465		517	177	347
15	6213	1635	3924		3106	1035	2070		1242	621	931		1035	355	695
8	11650	3066	7358		5825	1941	3883		2330	1165	1747		1941	665	1303
4	23301	6132	14716		11650	3883	7766		4660	2330	3495		3883	1331	2607
							250 GB	Ha	ard Dis	sk				Uni	it: Hour
				-	_		PICTURE	Q	JALITY	(KB)					
Recording		LOW				MEDIUM	1			HIGH				BEST	
(PPS)	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
( -)	0.50	1.90	1.20		1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88
240	606	159	382		303	101	202		121	60	90		101	34	67
120	1213	319	766		606	202	404		242	121	181		202	69	135
60	2427	638	1532		1213	404	808		485	242	363		404	138	271
30	4854	1277	3065		2427	809	1618		970	485	727		809	277	543
15	9709	2555	6132	Į	4854	1618	3236	ļ	1941	970	1455		1618	554	1086
8	18204	4790	11497		9102	3034	6068	ļ	3640	1820	2730		3034	1040	2037
4	36408	9581	22994		18204	6068	12136		7281	3640	5460		6068	2080	4074
							400 GB	Ha	ard Dis	k				Uni	t: Hour

						PICTURE	Q	UALITY	(KB)					
Recording		LOW			MEDIUM	1			HIGH				BEST	
Speed	simple	complex	average	simple	complex	average	ĺ	simple	complex	average	ĺ	simple	complex	average
(PPS)	0.50	1.90	1.20	1.00	3.00	2.00	Ì	2.50	5.00	3.75		3.00	8.75	5.88
240	970	255	612	485	161	323	ĺ	194	97	145	ĺ	161	55	108
120	1941	511	1226	970	323	646		388	194	291	l	323	110	216
60	3883	1022	2452	1941	647	1294	ĺ	776	388	582	ĺ	647	221	434
30	7767	2044	4905	3883	1294	2588	ĺ	1553	776	1164	ĺ	1294	443	868
15	15534	4088	9811	7767	2589	5178	ĺ	3106	1553	2329	ĺ	2589	887	1738
8	29127	7665	18396	14563	4854	9708		5825	2912	4368	ĺ	4854	1664	3259
4	58254	15330	36792	29127	9709	19418	ĺ	11650	5825	8737	ĺ	9709	3328	6518
		-	-	-	ļ	500 GB	Ha	ard Dis	sk	-			Uni	t: Hour
						PICTURE	Q	UALITY	(KB)					
Recording		LOW			MEDIUM	1			HIGH				BEST	
	simple	complex	average	simple	complex	average		simple	complex	average	ĺ	simple	complex	average
(110)	0.50	1.90	1.20	1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88
240	1213	319	766	606	202	404	ĺ	242	121	181	ĺ	202	69	135
120	2427	638	1532	1213	404	808	ĺ	485	242	363	ĺ	404	138	271
60	4854	1277	3065	2427	809	1618	ĺ	970	485	727	ĺ	809	277	543
30	9709	2555	6132	4854	1618	3236		1941	970	1455	ĺ	1618	554	1086
15	19418	5110	12264	9709	3236	6472		3883	1941	2912		3236	1109	2172
8	36408	9581	22994	18204	6068	12136		7281	3640	5460		6068	2080	4074
4	72817	19162	45989	36408	12136	24272		14563	7281	10922		12136	4161	8148
	-					750 GB	Ha	ard Dis	sk				Uni	t: Hour
Deservites						PICTURE	Q	UALITY	(KB)					
Recording		LOW			MEDIUM	1			HIGH				BEST	
(PPS)	simple	complex	average	simple	complex	average		simple	complex	average		simple	complex	average
(110)	0.50	1.90	1.20	1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88
240	1820	479	1149	910	303	606		364	182	273		303	104	203
120	3640	958	2299	1820	606	1213	ĺ	728	364	546	ĺ	606	208	407
60	7281	1916	4598	3640	1213	2426		1456	728	1092		1213	416	814
30	14563	3832	9197	7281	2427	4854		2912	1456	2184		2427	832	1629
15	29127	7665	18396	14563	4854	9708		5825	2912	4368		4854	1664	3259
8	54613	14371	34492	27306	9102	18204		10922	5461	8191		9102	3120	6111
4	109226	28743	68984	54613	18204	36408		21845	10922	16383		18204	6241	12222
				 		1T Hard	D	isk					Un	it: Hour
Recording						PICTURE	Q	UALITY	(KB)					

Speed		LOW		MEDIUM					HIGH		BEST		
(PPS)	simple	complex	average	simple	complex	average		simple	complex	average	simple	complex	average
	0.50	1.90	1.20	1.00	3.00	2.00		2.50	5.00	3.75	3.00	8.75	5.88
240	2427	638	1532	1213	404	808		485	242	363	404	138	271
120	4854	1277	3065	2427	809	1618		970	485	727	809	277	543
60	9709	2555	6132	4854	1618	3236		1941	970	1455	1618	554	1086
30	19418	5110	12264	9709	3236	6472		3883	1941	2912	3236	1109	2172
15	38836	10220	24528	19418	6472	12945		7767	3883	5825	6472	2219	4345
8	72817	19162	45989	36408	12136	24272		14563	7281	10922	12136	4161	8148
4	145635	38325	91980	72817	24272	48544		29127	14563	21845	24272	8322	16297

\* The value is for reference only
## **APPENDIX B: HDD COMPATIBLE TABLE**

Brand	Model	Capacity	others
SEAGATE	STM3250820AS	250 GB	7200 10
	ST3250310SV	250GB	SV35.3
	ST3400620AS	400 GB	7200 10
	ST3500320SV	500GB	SV35.3
	ST3500320AS	500GB	7200 11
	ST3500418AS	500GB	7200 12
	ST3750640AS	750 GB	7200 10
	ST3750330AS	750 GB	7200 11
	ST31000333AS	1TB	7200 11
	ST31000340AS	1TB	7200 11
	ST31000340NS	1TB	Barracuda ES.2
	ST31000340SV	1TB	SV35.3
	ST31500341AS	1.5TB	7200 11
WD	WD1600AAJS	160 GB	7200 CB
	WD2500AAKS	250 GB	7200 CB
	WD2500AVVS	250 GB	7200 GP
	WD5000AACS	500 GB	7200 GP
	WD5000AVVS	500 GB	7200 GP
	WD5000AAKS	500GB	7200 CB
	WD6400AAKS	640 GB	7200 BLUE
	WD6400AVVS	640 GB	7200 GP
	WD7500AACS	750GB	7200 GP
	WD7500AVVS	750GB	7200 GP
	WD10EACS	1TB	7200 GP
	WD10EADS	1TB	Caviar Green
	WD10EVDS	1TB	Green Power
	WD10EVVS	1TB	7200 GP
	WD15EADS	1.5TB	7200 GP
	WD15EARS	1.5TB	7200 GP
	WD20EADS	2.0TB	7200 GP
HITACHI	HDS721616PLA380	160 GB	7200
	HDT725025VLA380	250 GB	7200
	HDT725032VLA360	320 GB	7200
	HDP725050GLA360	500 GB	7200
	HCP725050GLA380	500GB	7200
	HDT721010SLA360	1TB	7200

\* The compatible table is for reference only

## APPENDIX C: ERROR MESSAGE LIST

ERROR MESSAGE	ERROR STATUS & REASON	NOTE
DISK ACCESS ERROR!	H.D.D. Data structure Un-normal.	
	Data does not record into DVR or bad sector on DVR	
	H.D.D. Please install another H.D.D. and perform the record	
	again.	
UPDATE FILE ERROR!	Please re-download the update file and update again.	
FIRMWARE UPGRADE	Please reboot the DVR and upgrade the firmware. Please	
FAILED	send the DVR back to repair when DVR is disability.	
MEDIA ACCESS FAIL!	The USB file format is incorrect (Please format the pen	
	drive to FAT32) or Pen Drive is setup to ONLY READ mode	
	(Please annul ONLY READ mode) when reserve the data by	
	using Pen Drive. The data cannot be burn into CD/DVD	
	disc. Please change another CD/DVD disc and backup the	
	file in CD/DVD disc storage.	
NO FILE!	There is no upgrade file within Pen Drive or the name of	
	upgrade file does not correspond with DVR format. Please	
	adjust the upgrade file name based on the following	
	information.	
	16CH -> UpdateR.bin	
	08CH -> Update8.bin	
	04CH -> Update4.bin	
USB DEVICE NOT FOUND	Pen Drive undetected. Please Unplug the Pen Drive and plug	
NO USB	it again.	
BACKUP START TIME	Backup start time error.	
ERROR		
BACKUPEND TIME ERROR	Backup end time error.	
DISK ERROR	The data cannot be burn into CD/DVD disc. Please change	
	another CD/DVD disc and backup the file.	
FAN FAILED	Fan Error Warning.	
NO LOG DATA	No Events Record.	
SCHEDULE RECORD	The condition is caused by trying to stop recording when	
	perform the schedule record. Please setup the record to	
	manual mode and then stop the record.	
PLEASE SELECT ONE	The message will be shown while using the ZOOM function	
CAMERA	under split screen condition. Please switch the screen into	
	full screen mode and then operate the ZOOM function.	