

HDV-16CDR

User's Manual

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

WARNINGS



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

	CAUTION	
RISK OF ELECTRIC SHOCK DO NOT OPEN		
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		

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.

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1 INTRODUCTION

1.1 FEATURE

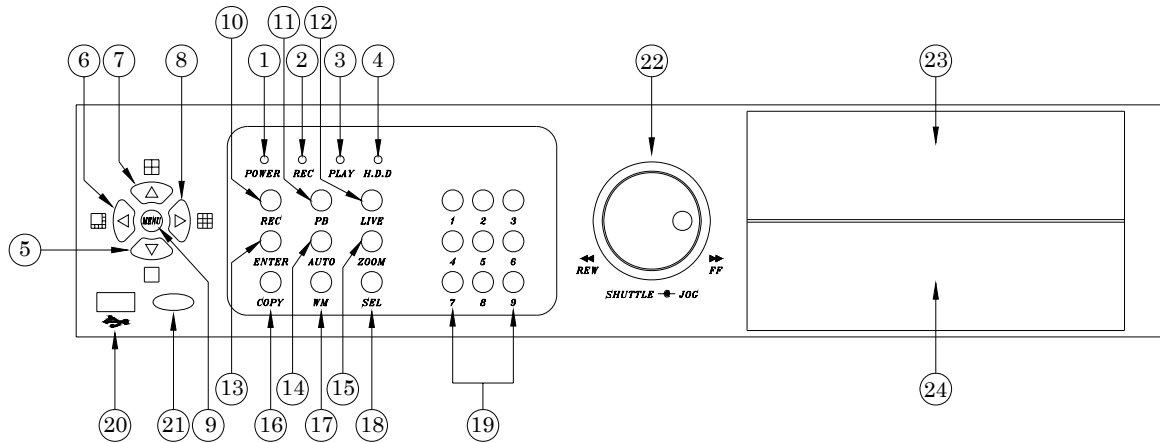
- EASY OPERATION, SETTING CAN BE EASILY MODIFIED ON SCREEN DISPLAY.
- MULTI-SPEED RECORDING SELECTION ON NORMAL OR ALARM RECORDING MODE UP TO 60/50 (NTSC / PAL) FIELDS.
- SHUTTLE FOR FAST/SLOW VIEWING, JOG DIAL FOR FIELD BY FIELD PLAYBACK.
- BUILD-IN RS-232 AND RS-485 PORTS ARE READY FOR SUB-CONTROL PANELS ADD ON IN THE FUTURE.
- OPTIONAL CDRW & VGA OUTPUT FUNCTION.

1.2 SPECIFICATION

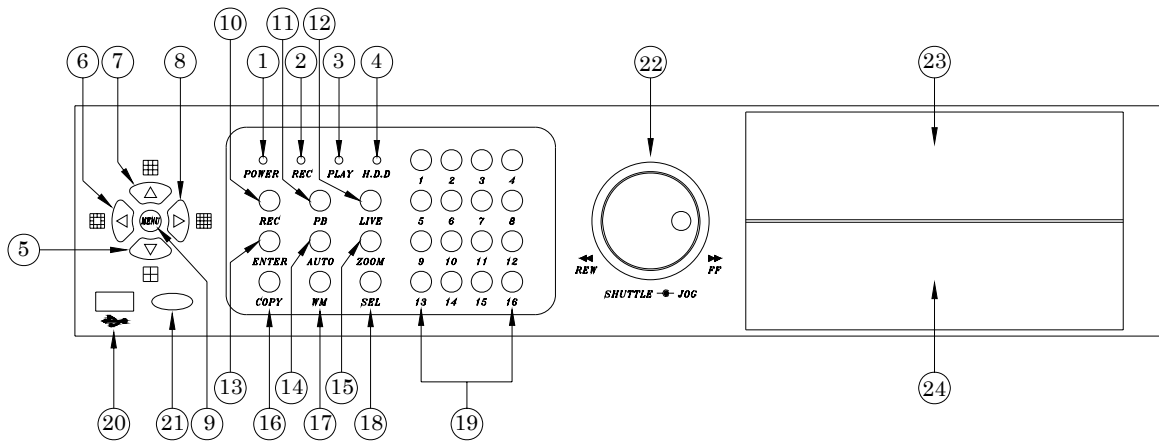
IMAGE SYSTEM	NTSC	PAL
RESOLUTION-LIVE	720×480	720×576
RESOLUTION-PLAYBACK	720×240	720×288
VIDEO INPUT	BNC × 9 / BNC x16	
VIDEO LOOPING	BNC × 9 / BNC x16	
VIDEO OUTPUT	BNC × 1	
SPOT OUTPUT	BNC × 1	
AUDIO INPUT	RCA × 1	
AUDIO OUTPUT	RCA × 1	
STORAGE MEDIA	MAX 2 IDE HARD DISKS (ONE REMOVABLE)	
IMAGE FORMAT	M-JPEG	
RECORDING RATE	UP TO 60 FIELDS/SEC	UP TO 50 FIELDS/SEC
RECORDING MODE	MANUAL / ALARM / SCHEDULE	
PLAYBACK SPEED	FAST FORWARD ×2 ×4 ×6 ×8 ×16 x32 FAST BACKWARD ×2 ×4 ×6 ×8 ×16 FIELD BY FIELD PLAYBACK	
TITLE	6 CHARACTERS FOR EACH CAMERA	
OSD & SETUP	TITLE / TIME / DATE / SETUP MENU	
ALARM INPUT	×9 / x16 N.O. OR N.C. PROGRAMMABLE	
RELAY OUTPUT	N.O. OR N.C. PROGRAMMABLE CONTACT ×1	
RS-232 & RS-485 PORT	YES	
PTZ CONTROL	YES	
ETHERNET	YES	
IR REMOTE CONTROL	YES	
BACKUP	USB & CDRW (OPTION)	
VGA OUTPUT	OPTION	
PASSWORD CONTROL	ONE FOR SYSTEM, ONE FOR HDD FORMAT	
KEY LOCK	YES	
POWER INPUT	AC 100-240V INPUT (47-63 HZ)	
DIMENSIONS MM	430(W) × 91(H) × 380(D)	
RACK MOUNTABLE	EIA 19" 2U STANDARD MOUNTING RACK	

2 HARDWARE OVERVIEW

2.1 FRONT PANEL





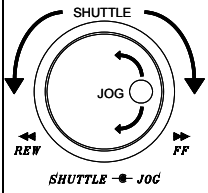
Front Panel of 9-ch DVR



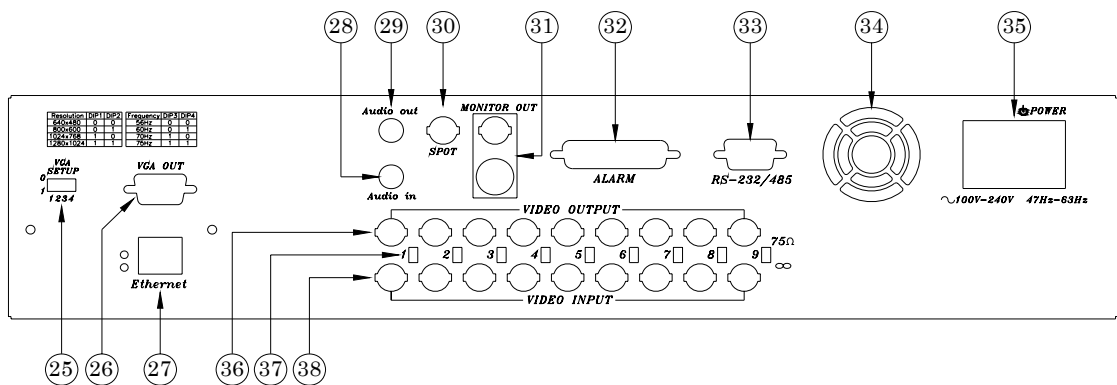
Front Panel of 16-ch DVR

DVR OPERATION

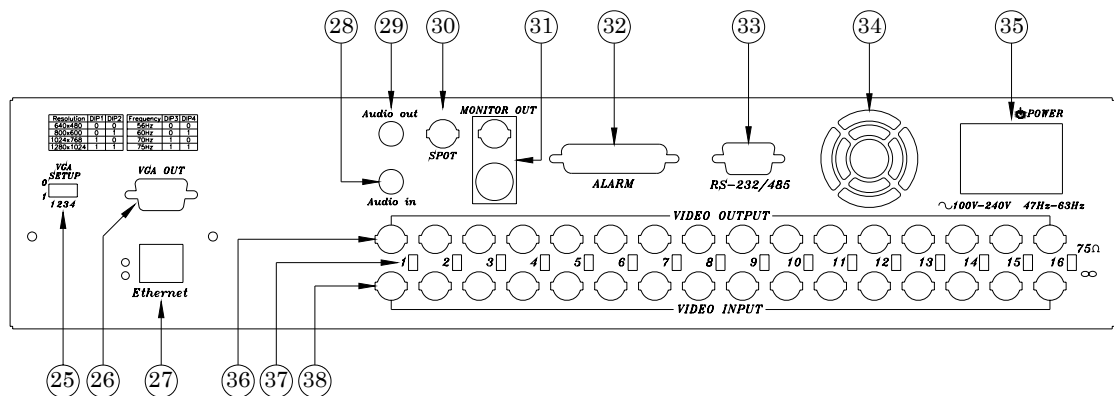
NO.	LABEL	OPERATION	PTZ
1	POWER	Power LED	
2	REC	Recording LED	
3	PLAY	Play LED	
4	H.D.D	H.D.D LED	
5	▼	Move down or decrease the number. Select full/quad formats at 9/16-ch DVR model.	Down
6	◀	Move left or decrease the number Select 8/13 camera formats at 9/16-ch DVR model.	Left
7	▲	Move up or increase the number. Select quad/9 camera formats at 9/16-ch DVR model.	Up
8	▶	Move right or increase the number Select 9/16 camera formats at 9/16-ch DVR model.	Right
9	MENU	Press MENU to <u>go into</u> or <u>exit</u> main menu	PTZ setup
10	REC	Press REC to start recording. Press again to stop.	
11	PB	Playback for TIME SEARCH or EVENT LIST.	
12	LIVE	Live viewing	
13	ENTER	Press ENTER button to make choose or move cursor	Home

		forward or make confirmation in MENU system	
14	AUTO	Press AUTO to switch channel by channel automatically.	Auto Scan
15	ZOOM	Zooming	
16	COPY	Backup the videos to USB or CD-RW	
17	WM	Water mark	
18	SEL	Press this button to select the different assembled of camera formats.	Enter or exit PTZ mode
19	1-9 / 1-16	Press the button to display full screen.	
20		USB connector	
21		IR Sensor for remote control	
22	SHUTTLE & JOG	 <p>SHUTTLE: FAST FORWARD ×2 ×4 ×6 ×8 ×16 ×32 FAST BACKWARD ×2 ×4 ×6 ×8 ×16</p> <p>JOG: FIELD BY FIELD PLAYBACK</p>	
23	HDD	Location of installation for removable HDD.	
24	CDRW	Slot for CDRW.	

2.2 BACK PANEL



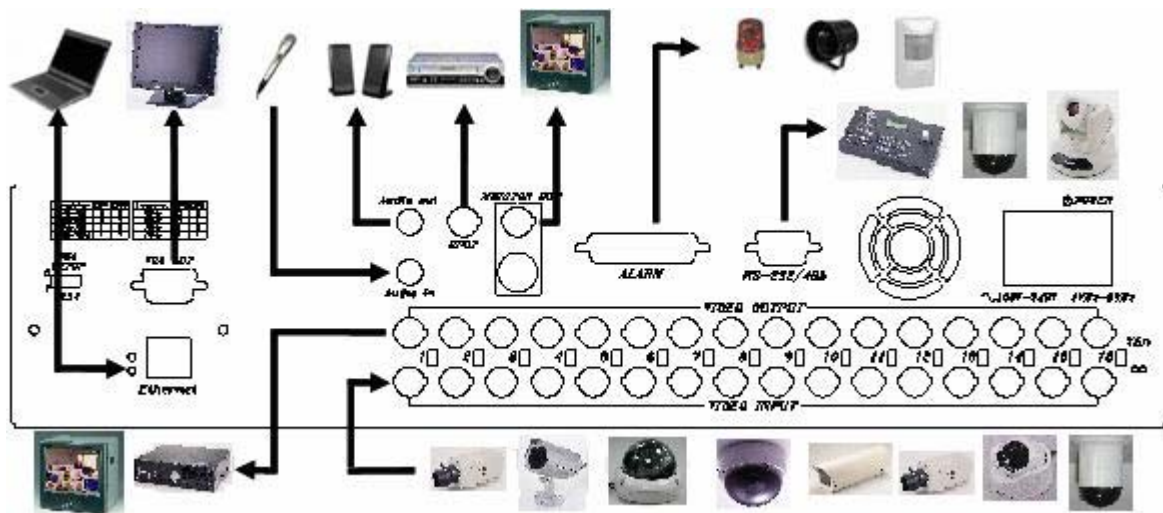
Back panel of 9-ch DVR



Back panel of 16-ch DVR

NO.	LABEL	OPERATION
25	VGA SETUP DIP	Setting Resolution & Frequency
26	VGA D-SUB OUT	Connect to CRT or LCD monitor.
27	Ethernet	RJ-45 connector for networking.
28	AUDIO IN	Audio input for 1 channel
29	AUDIO OUT	Audio output for 1 channel
30	SPOT	SPOT Video output
31	MONITOR OUT	Video output with BNC & Y/C signal Din connector.
32	ALARM	25 pin D-Sub connector. Alarm input connector.
33	RS-232 / RS-485	9 pin D-Sub connector. For external control of unit.
34	FAN	Cooling fan.
35	POWER	Power switch: AC100V~AC240V / 47-63Hz input.
36	Video output	Video output with BNC connector.
37	75 ohm	Switch between 75 ohm and high resistance.
38	Video input	Video input with BNC connector.

3 SYSTEM CONNECTION



3.1 CAMERA & MONITOR LOOPING

75 Ω: If camera looping to other devices or channels and video single are instable, please switch to this position.

∞: In case of camera input over bright, please switch to this position.

3.2 EXTERAL ALARM

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

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. External alarm will be recorded in the event list. Motion detection can be set to yes or no.
- e. The camera title will be transformed into color of yellow when motion is happening, "ALARM" text will show up when external alarm is triggered.

Video Loss Alarm:

The default setting of Video Loss alarm is enabled and cannot be changed. Although buzzer action can be disabled, an ALM record will still be added to the Event List that indicates the precise time of video loss.

25 PIN D-Sub connector is used for external alarm input. It will accept TTL/CMOS type trigger signals where the **9ch & 16ch DVR** alarm inputs will be set by signal polarity. It also accepts contact type devices. For example, N.O. relay input, the Alarm Polarity should set to LOW in the ALARM SETUP menu. For N.C. relay input, the Alarm Polarity should set to HIGH in the ALARM SETUP menu.

Connector pins 1-16 are for TTL/CMOS compatible alarm signals or for connect one side of the contact type devices. Connector pins 20-21 are for input signal grounding or the remaining side of the contact type devices.

The alarm hold input accept TTL/COMS alarm signal as well as contact device. The connector pin 22 connected to Alarm Reset. The Alarm Reset signal return connects to ground pin (pin 20-21).

Alarm output is Relay Type, Pin 23 is Normal Close and Pin 25 is Normal Open. These outputs can be used to control external devices.

D-SUB25	PIN	DEFINE
	1-9, (1-16)	Alarm 1-Alarm 9 (16) Camera alarm input
	10-19, (17-19)	N/A
	20, 21	GND (connecting to ground)
	22	Alarm Reset
	23	Alarm output, N.C.
	24	Relay COM
	25	Alarm output, N.O.

EXAMPLE 1: Connect with PIR (Passive Infrared) device from ALARM1 INPUT.
EXAMPLE 2: A Normal off (Normal Open) alarm siren at Alarm Output.

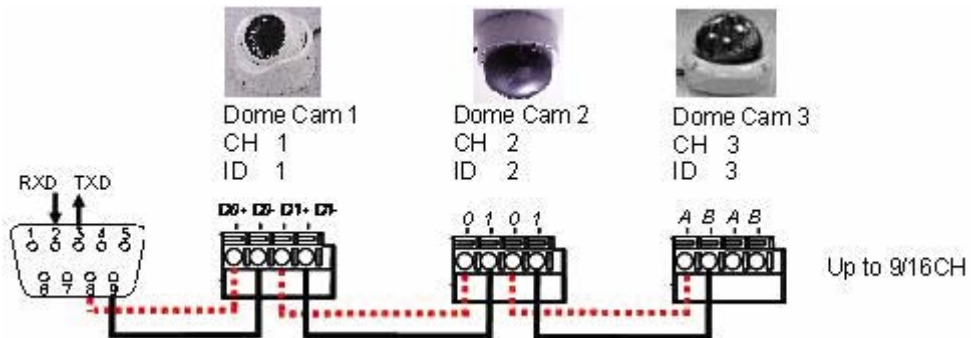


3.3 IR REMOTE CONTROL

		ITEM	
	AUTO	Press AUTO to switch channel by channel automatically.	
	SEL	Press this button to select the different assembled of camera formats.	
	REC	Press REC to start or stop recording.	
	1-16	Select the single channel for full screen.	
		Fast backward	
		Field by field backward play	
		Field by field forward play	
		Fast forward	
		Play video backward	
		Play video forward	
			Move up, increase or change screen format.
			Move right, increase or change screen format.
			Move down, decrease or change screen format.
			Move left, decrease or change screen format.
			To enter item or make choose.
MENU		Display the main menu or exit the main menu	
STOP		Stop the playback	

3.4 RS-232/485 CONTROLLER

	PIN	DEFINE	
RS-232	2	RXD	
	3	TXD	
	5	GND	
RS-485	6	RXDA	R+
	7	RXDB	R-
	8	TXDZ	T+
	9	TXDY	T-



Data format

Data: 1 Byte / Parity: None / Start bit: 1 / Baud: 9600

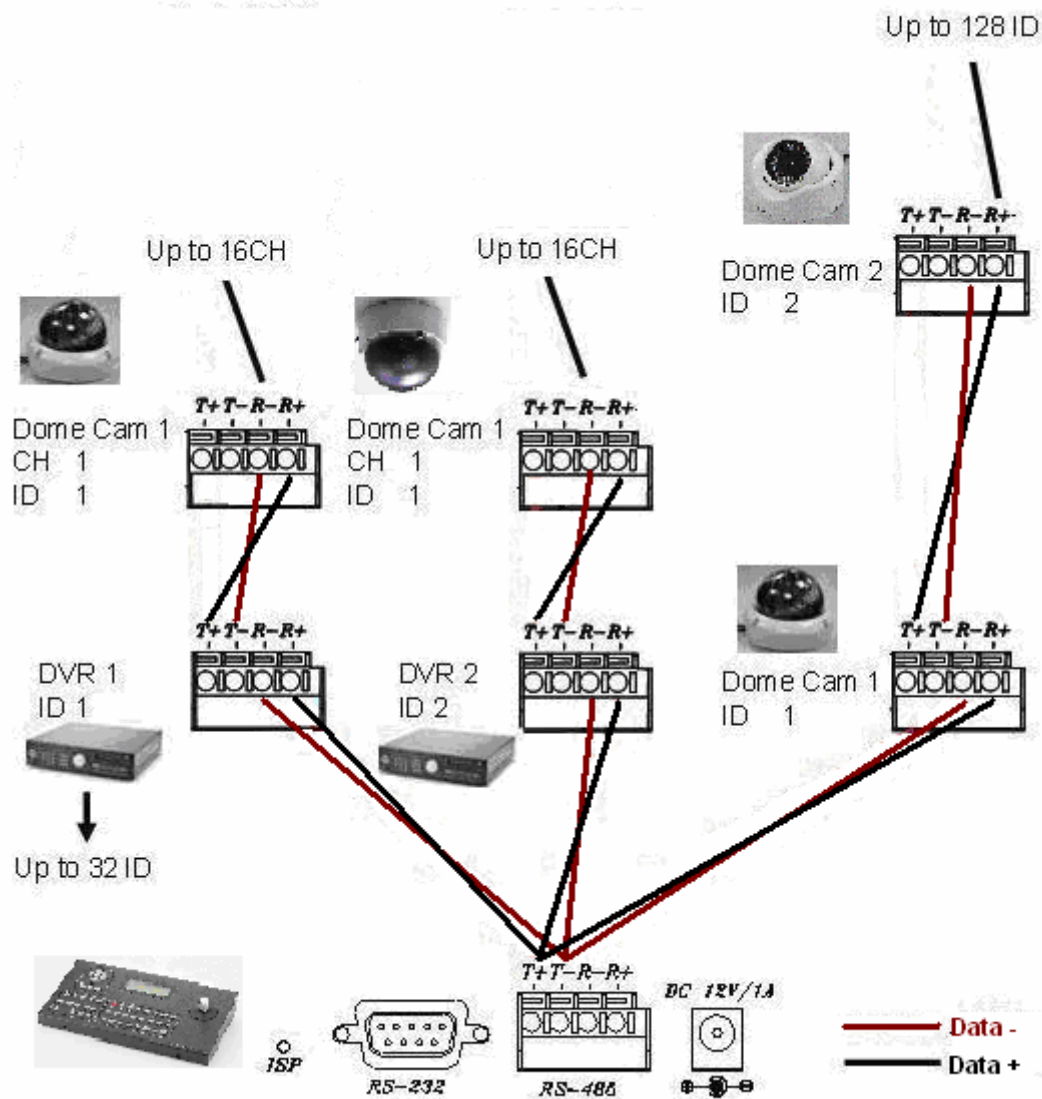
Totally 3 bytes in data frame:

1. Byte=0x10 :Broadcasting DVR
 Byte=0x80+ID Number :Remote Control DVR (ID number range: 5~21)
2. Byte=Refer to below table :Command for each key string
3. Byte=First byte plus Second byte :Command for confirm checksum

9-ch DVR	16-ch DVR	Command	9-ch DVR	16-ch DVR	Command
F.Rew	F.Rew	0x38	Rew	Rew	0x3a
Field Rew	Field Rew	0x3b	STOP	STOP	0x3c
Field Fwd	Field Fwd	0x3d	PLAY	PLAY	0x39
F.Fwd	F.Fwd	0x3e			
		0x32			0x31
		0x33			0x34
ENTER	ENTER	0x35	AUTO	AUTO	0x37
SEL	SEL	0x36			
1	1	0x11	2	2	0x12
3	3	0x13	4	4	0x14
5	5	0x15	6	6	0x16
7	7	0x17	8	8	0x18
9	9	0x19		10	0x1a
	11	0x1b		12	0x1c
	13	0x1d		14	0x1e
	15	0x1f		16	0x30

3.5 PTZ (PAN, TILT AND ZOOM) CAMERA & JOYSTICK CONTROLLER

In the following diagram, DVR connects between PTZ camera & joystick controller, if DVR controls PTZ camera please make sure the CAMERA ID, Baud rate (default at 9600 bps) and RS-485 cable, if linking with joystick controller please confirm your DVR ID number. Every DVR ID & the PTZ camera ID behind DVR must be unique.

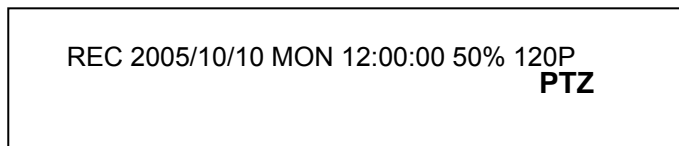


PTZ SETUP & FRONT PLANE CONTROL

EXAMPLE :

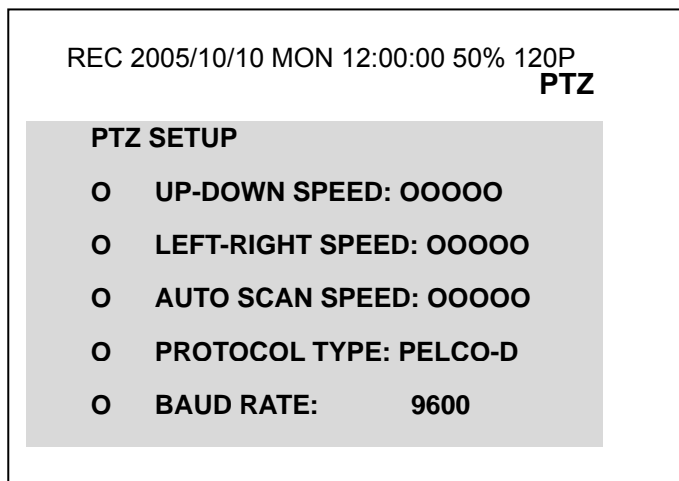
A PTZ camera at channel 3 with PELCO-D, 9600bps.

1. Press the channel button **3** into full screen mode.
2. And a "PTZ" mark appeared at left upper corner.



3. Press the **MENU** button into setup mode.

By ▲ or ▼ to switch item & by ◀ or ▶ to change SPEED/ PROTOCOL & BAUD RATE.



4. Press the **MENU** button again back to PTZ control mode.
5. With the following label to control PTZ camera.

NO.	LABEL	PTZ
5	▼	Down
6	◀	Left
7	▲	Up
8	▶	Right
9	MENU	PTZ setup

NO.	LABEL	PTZ
11	PB	Zoom in
13	ENTER	Home
14	AUTO	Auto Scan
17	WM	Zoom out
18	SEL	Enter or exit PTZ mode

6. Press the **SEL** button quite to PTZ control mode.

3.6 VGA OUTPUT

VGA output is optional, please ensure that you have proper DVR model for VGA output installation. By D-SUB connector to CRT or LCD monitor, DIP switch definition & suggestion table as below:

Resolution	DIP1	DIP2	Frequency	DIP3	DIP4
640×480	0	0	56Hz	0	0
800×600	0	1	60Hz	0	1
1024×768	1	0	70Hz	1	0
1280×1024	1	1	75Hz	1	1

DIP1	DIP2	DIP3	DIP4	Resolution	Frequency	Monitor
0	0	0	0	640×480	60	15 inch or below
0	0	0	1			
0	0	1	0			
0	0	1	1			
0	1	0	0	800×600	56	15 inch or below
0	1	0	1			
0	1	1	0			
0	1	1	1			
1	0	0	0	1024×768	60	15~17 inch
1	0	0	1			
1	0	1	0			
1	0	1	1			
1	1	0	0	1280×1024	60	17 inch or above
1	1	0	1			
1	1	1	0			
1	1	1	1			

3.7 NETWORK

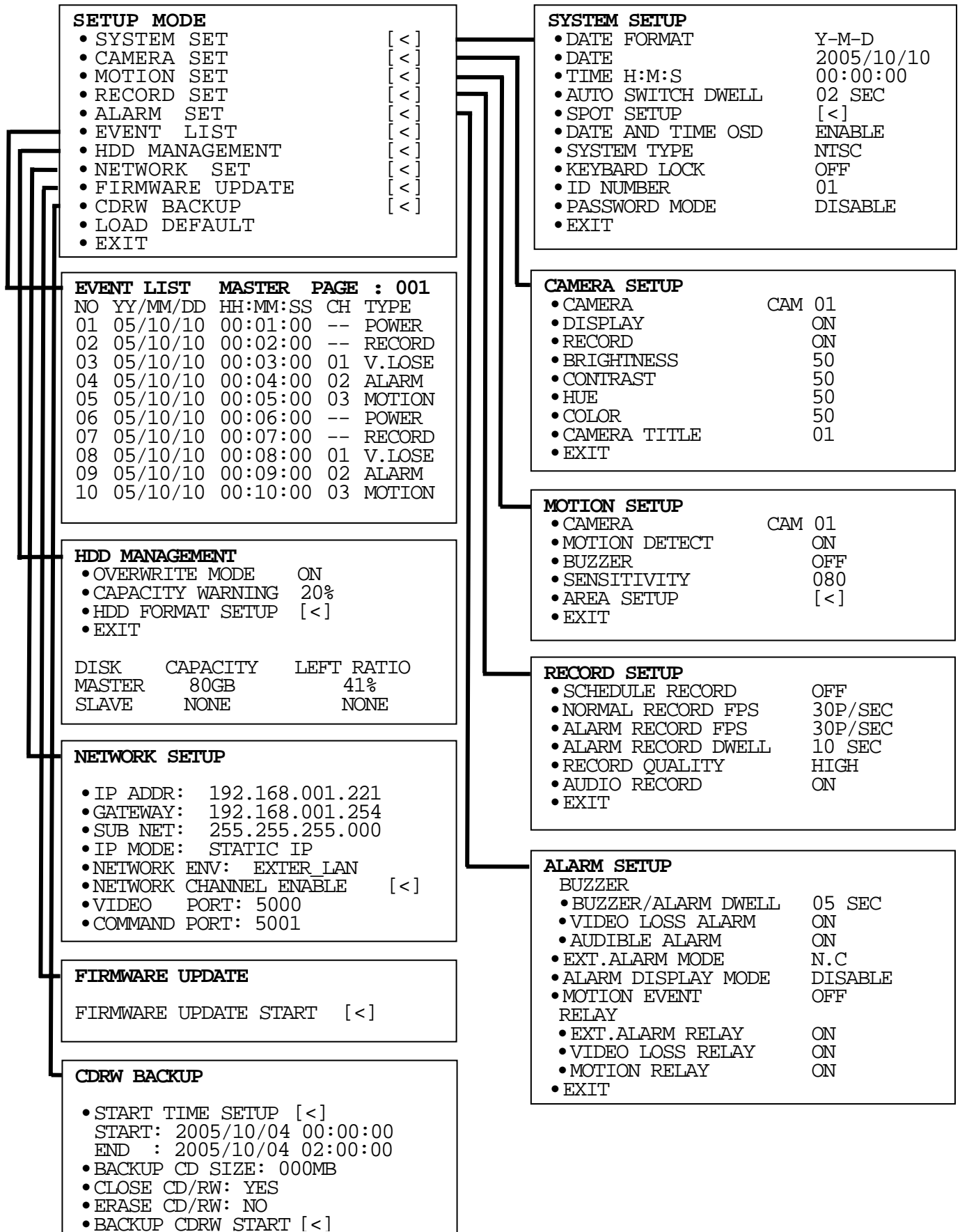
Before starting the network application software, please confirm the RJ-45 cable has been connected, and then turn the power on.

DVR would check network connection status while DVR power is on, thus without network connection, the network function will be disabled.

Please make sure your network environment is enabled and RJ-45 cable has been connected, before turning on the power!

4 SYSTEM SETUP

4.1 SETUP MENU DIAGRAM



4.2 LIVE VIEWING

A. Status indicator:

To press **ENTER** key to switch live display indicator in the live viewing mode.

	REC	TIME & DATE	CHANNEL ID	HDD STATUS & FPS
1	O	O	O	O
2	O	O		O
3		O	O	
4		O		

B. Quick playback search

To press **PB** key and access into the quick time search or the event list search mode in the live viewing mode.

C. Single channel zoom in:

- Press the channel key in full screen mode.
- Press **ZOOM** key into zoom in mode and select the area you want to magnify.
- Press **ENTER** key to magnified, or press **ZOOM** key again to quit.

D. PTZ control:

- Press the channel key in full screen mode.
- Press **SEL** key into PTZ mode, and a yellow PTZ mark at right upper corner.
- Press **MENU** key to setup PROTOCOL & BAUDRATE between DVR & PTZ.
- Press direction key to control the PTZ camera.
- Press **SEL** key to exit PTZ mode.

E. Channel AUTO switch

To press **AUTO** key and access into full screen auto switch mode, and press **AUTO** key again back to normal screen.

F. Channel selection

The windows will be limited in the split channel mode, thus using the **SEL** key to switch other channels on the screen.

G. WATER MARK

Press the **WM** key for water mark function in the live viewing mode, but this function is for live viewing only. It does not include in recorded video and wording change.

H. USB button

During live viewing mode, press the **USB** key to check the USB disk volume which connected on USB port.

4.3 SYSTEM SETUP

SYSTEM SETUP	
• DATE FORMAT	Y-M-D
• DATE	2005/10/10
• TIME H:M:S	00:00:00
• AUTO SWITCH DWELL	02 SEC
• SPOT SETUP	[<]
• DATE AND TIME OSD	ENABLE
• SYSTEM TYPE	NTSC
• KEYBOARD LOCK	OFF
• ID NUMBER	01
• PASSWORD MODE	DISABLE
• EXIT	

▲ or ▼ to change item
◀ or ▶ to change value

A. DATA FORMAT

By ◀ or ▶ to switch Y-M-D, M-D-Y or D-M-Y mode.

B. DATE

By ▲ or ▼ to switch item & by ◀ or ▶ to change value.

C. TIME

By ▲ or ▼ to switch item & by ◀ or ▶ to change value.

D. AUTO SWITCH DWELL

By ◀ or ▶ to change volume.

E. SPOT SETUP

Press **ENETR** into SOPT STEUP mode or **MENU** to exit,

By ▲ or ▼ to switch item & by ◀ or ▶ to change value.

F. DATE AND TIME OSD

By ▲ or ▼ to switch item & by ◀ or ▶ to change value.

G. SYSTEM TYPE

By ◀ or ▶ to change value between NTSC / PAL / EIA / CCIR.

The DVR could switch system type automatically, after press **MENU** key.

H. KEYBOARD LOCK

By ◀ or ▶ to change value between OFF / TYPE1 / TYPE 2.

TYPE 1: Block all function but channel switch.

TYPE 2: Block all function.

After KEYBOARD LOCK mode setup, please setup the **PASSWORD** !

If without password, the un-authorized user would access into SYSTEM SETUP and remove keyboard lock function easily!

I. ID NUMBER

By ◀ or ▶ to change value.

This ID number identifies the DVR location between DVR & remote controller or joystick controller.

J. PASSWORD MODE

By ▲ or ▼ to switch item & by ◀ or ▶ to change value.

Default password number is "1111".

4.4 CAMERA SETUP

CAMERA SETUP	
• CAMERA	CAM 01
• DISPLAY	ON
• RECORD	ON
• BRIGHTNESS	50
• CONTRAST	50
• HUE	50
• COLOR	50
• CAMERA TITLE	01
• EXIT	

▲ or ▼ to change item
◀ or ▶ to change value

A. CAMERA

Select the camera channel.

B. DISPLAY

Select On to display this camera. Select OFF to hide this camera.

C. RECORD

Select ON to enable the camera recording. Select OFF to disable the camera recording.

D. BRIGHTNESS

Change the brightness level.

E. CONTRAST

Change the contrast level.

F. HUE

Change the HUE level.

G. COLOR

Change the color level.

H. CAMERA TITLE

By ▲ or ▼ to switch item & by ◀ or ▶ to change wording.

4.5 MOTION SETUP

MOTION SETUP	
• CAMERA	CAM 01
• MOTION DETECT	ON
• BUZZER	OFF
• SENSITIVITY	080
• AREA SETUP	[<]
• EXIT	

▲ or ▼ to change item
◀ or ▶ to change value

A. CAMERA

Select camera number for motion setup.

B. MOTION DETECT

Select ON to enable the motion detection. Select OFF to disable the motion detection.

C. BUZZER

Select ON to enable the buzzer while motion detected. Select OFF to disable the buzzer while motion detected.

D. SENSITIVITY

Change sensitivity value from 001 (min) to 100 (max).

E. AREA SETUP

Press **ENTER** key to enter motion area setting.

1. Press direction key to select which block needs to change.
2. Press **AUTO** to add a line to motion detection.
3. Press **SEL** to remove a line to motion detection.
4. Press **MENU** key to quit motion detection area setup.

4.6 RECORD SETUP

RECORD SETUP	
• SCHEDULE RECORD	OFF
• NORMAL RECORD FPS	30P/SEC
• ALARM RECORD FPS	30P/SEC
• ALARM RECORD DWELL	10 SEC
• RECORD QUALITY	HIGH
• AUDIO RECORD	ON
• EXIT	

▲ or ▼ to change item
◀ or ▶ to change value

A. SCHEDULE RECORD

Select ON to enable or OFF to disable the schedule recording function.

A1.SCHEDULE RECORD SETUP

While SCHEDULE RECORD is ON, press **ENTER** key into SCHEDULE RECORD diagram.

RECORD SETUP			
WEEKDAY: MON-FRI			
START-STOP	TYPE	FPS	ALM FPS
01-00	[X]	30P	60P
00-01	[0]	30P	60P
WEEKEND: SAT-SUN			
START-STOP	TYPE	FPS	ALM FPS
ALL-TIME	[X]	30P	60P
EXIT			

▲ or ▼ to change item
◀ or ▶ to change value

A1.1 WEEKDAY & WEEKEND

The week days separated into weekday & weekend.

EXAMPLE 1:

If weekday are from Monday to Friday, thus the weekend must be from Saturday to Sunday.

EXAMPLE 2:

If weekday are from Wednesday to Friday, thus the weekend must be from Saturday to Tuesday.

EXAMPLE 3:

If weekday are from Monday to Wednesday, thus the weekend must be from Wednesday to Sunday.

EX3	WEEKDAY				WEEKEND		
	MON	TUE	WEB	THU	FRI	SAT	SUN
EX1	WEEKDAY					WEEKEND	
EX2	WEEKEND		WEEKDAY			WEEKEND	

**A1.2
START-STOP**

The 24 hours can be ALL TIME & separated hour's mode.

ALL TIME

Using the same recording type & FPS in whole day.

Separated hour's

As like weekday & weekend setting, every 24 hours can be separated 2 areas.

EXAMPLE 1:

Business hours form 8am-16pm, and 16pm-8am off.

EXAMPLE 2:

Business hours form 10am-20pm, and 16pm-10am off.

	2	4	8	6	10	12	14	16	18	20	22	24	
EX1	OFF		BUSINESS HOURS						OFF				
EX2	OFF			BUSINESS HOURS						OFF			

**A1.3
TYPE**

By ◀ or ▶ to change recording type mode.

A	Alarm recording only.
O	Full time recording.
X	No recording.

**A1.4
FPS**

By ◀ or ▶ to change normal recording field per second 60 / 30 / 15 / 10 / 5 / 3 / 2 / 1 FPS.

**A1.5
ALM FPS**

By ◀ or ▶ to change alarm recording field per second 60 / 30 / 15 / 10 / 5 / 3 / 2 / 1 FPS.

B. NORMAL RECORD FPS

By ◀ or ▶ to change how many fields per second in normal recording.

C. ALARM RECORD FPS

By ◀ or ▶ to change how many fields per second in alarm recording.

D. ALARM RECORD DWELL

By ◀ or ▶ to change how many seconds recording while alarm occurs.

E. RECORD QUALITY

By ◀ or ▶ to change recording quality for LOW / MEDIUM / HIGH / BEST.

F. AUDIO RECORD

By ◀ or ▶ to decide included with audio recording or not.

4.7 ALARM SETUP

ALARM SETUP	
BUZZER	
•BUZZER/ALARM DWELL	05 SEC
•VIDEO LOSS ALARM	ON
•AUDIBLE ALARM	ON
•EXT.ALARM MODE	N.C
•ALARM DISPLAY MODE	DISABLE
•MOTION EVENT	OFF
RELAY	
•EXT.ALARM RELAY	ON
•VIDEO LOSS RELAY	ON
•MOTION RELAY	ON
•EXIT	

▲ or ▼ to change item
◀ or ▶ to change value

BUZZER

A. BUZZER/ALARM DWELL

By ◀ or ▶ to change how many seconds buzzer while alarm occurs.

B. VIDEO LOSS ALARM

By ◀ or ▶ to change value for video loss alarm.

C. AUDIBLE ALARM

By ◀ or ▶ to change value for audible alarm.

D. EXT. ALARM MODE

By ◀ or ▶ to change value for external alarm device.

N.C: For Normal Close device as like

N.O: For Normal Open device as like alarm siren or etc.

E. ALARM DISPLAY MODE

By ◀ or ▶ to change value for alarm display mode.

F. MOTION EVENT

By ◀ or ▶ to change value for adds the detected motion into event list or not.

RELAY

G. EXT. ALARM RELAY

By ◀ or ▶ to change a value for triggered the relay from the external alarm device.

H. VIDEO LOSS REPLAY

By ◀ or ▶ to change a value for triggered the relay while the video loss occurs.

I. MOTION RELAY

By ◀ or ▶ to change a value for triggered the relay if the motion has been detected.

4.8 EVENT LIST

EVENT LIST MASTER PAGE : 001				
NO	YY/MM/DD	HH:MM:SS	CH	TYPE
01	05/10/10	00:01:00	--	POWER
02	05/10/10	00:02:00	--	RECORD
03	05/10/10	00:03:00	01	V.LOSE
04	05/10/10	00:04:00	02	ALARM
05	05/10/10	00:05:00	03	MOTION
06	05/10/10	00:06:00	--	POWER
07	05/10/10	00:07:00	--	RECORD
08	05/10/10	00:08:00	01	V.LOSE
09	05/10/10	00:09:00	02	ALARM
10	05/10/10	00:10:00	03	MOTION

▲ or ▼ to change item
 ◀ or ▶ to change page

A. NO

By ▲ or ▼ to switch event item & by ◀ or ▶ to pages.

In the event list, each hard disk would stored 2000 pieces events, with 2 hard disks would be up to 4000 pieces, and the header information bar would show the event belongs to which hard disk.

B. DD/MM/YY

The Year/Month/Day, Month/Day/ Year or Day/Month/Year depend on date format from SYSTEM SETUP.

C. HH:MM:SS

The Hour/Minute/Second for event starting time of this event.

D. CH

Channel number depends on what event type with the specific channel.

E. TYPE

Following issues would list on event list.

POWER	If DVR has been turned off, power up time would add on the list.
RECORD	If the record button has been pressed.
V.LOSE	If a camera signal lose and channel number would be on the list.
ALARM	If alarms have been triggered, this event would be on the list.
MOTION	If motion has been detected this event & channel would be on the list.

4.9 HDD MANAGEMENT

HDD MANAGEMENT			
• OVERWRITE MODE		ON	
• CAPACITY WARNING		20%	
• HDD FORMAT SETUP		[<]	
• EXIT			
DISK	CAPACITY	LEFT	RATIO
MASTER	80GB		41%
SLAVE	NONE		NONE

▲ or ▼ to change item
◀ or ▶ to change page

A. OVERWRITE MODE

Select ON to enable the overwrite mode. Select OFF to disable the overwrite mode.

B. CAPACITY WARNING

By ◀ or ▶ to change the 20 / 15 / 10 / 5% for non-overwrite alarm.

C. HDD FORMAT SETUP

HDD FORMAT SETUP			
• HDD PASSWAORD PROTECT		ENABLE	
• HDD PASSWORD		1111	
• FORMAT		[<]	
• EXIT			

C-1. HDD PASSWORD PROTECT

Enable or Disable the hard disk format password protection

C-2. HDD PASSWORD

Setup the password values.

Preset password: 1111.

C-3. FORMAT

Press **ENTER** key and access into hard disk format diagram.

[ATTENTION]	
WILL BE LOST ALL HDD-DATA	
ARE YOU SURE?	
• YES	• NO

Select YES to format the HDD, and press **ENTER** key to execute.

4.10 NETWORK SETUP

NETWORK SETUP	
• IP ADDR:	192.168.001.221
• GATEWAY:	192.168.001.254
• SUB NET:	255.255.255.000
• IP MODE:	STATIC IP
• NETWORK ENV:	EXTER_LAN
• NETWORK CHANNEL ENABLE	[<]
• VIDEO PORT:	5000
• COMMAND PORT:	5001

▲ or ▼ to change item
◀ or ▶ to change page

A. IP ADDR

By ▲ or ▼ to switch item & by ◀ or ▶ to assign an IP address number.

B. GATEWAY

By ▲ or ▼ to switch item & by ◀ or ▶ to assign a gateway number.

C. SUB NET

By ▲ or ▼ to switch item & by ◀ or ▶ to assign the sub mask.

D. IP MODE

By ◀ or ▶ to change STATIC IP or DHCP.

E. NETWORK ENV

By ◀ or ▶ to change network environment.

LOCAL	Recommend in crossover cable link to PC directly.
EXTER_LAN	Recommend in Local Area Network environment.
EXTER_WAN	Recommend in Wide Area Network environment.

F. NETWORK CHANNEL ENABLED

Press **ENTER** key into enabled the specific channel for network.

NETWORK CHANNEL SETUP	
• CH01 :	ON
• CH02 :	ON
• CH03 :	ON
• CH04 :	ON
• CH05 :	ON
• CH06 :	ON
• CH07 :	ON
• CH08 :	ON
• CH09 :	ON

▲ or ▼ to change item
◀ or ▶ to change page

G. VIDEO PORT

By ▲ or ▼ to switch item & by ◀ or ▶ to change port number.
Preset at 5000.

H.COMMAND PORT

By ▲ or ▼ to switch item & by ◀ or ▶ to change port number.
Preset at 5001.

4.11 FIRMWARE UPDATE

FIRMWARE UPDATE

FIRMWARE UPDATE START [<]

Press **ENTER** to start firmware update, but please confirm the following steps.

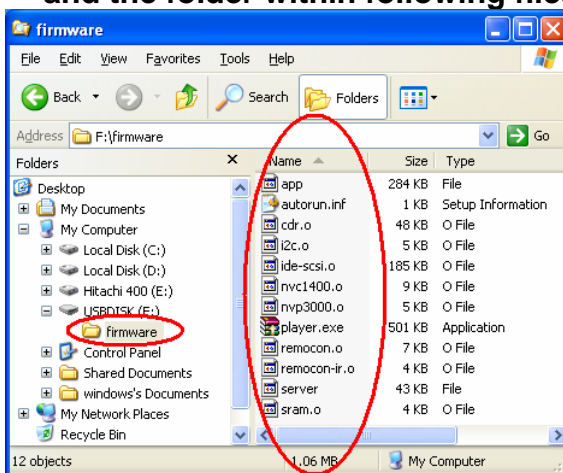
!!CAUTION!!

Please make sure your firmware mode & version!

The wrong version of firmware may make the system damaged!

Update steps:

1. Confirm the firmware must in the folder named "firmware", and the folder within following files from the picture as below:



2. Plug the USB flash disk into USB connector.
3. Get into "FIRMWARE UPDATE" item & press **ENTER** to start update.
4. The system would show "FIRMWARE UPDATEING" while updating.
5. After updated, the screen would show "PLEASE Wait For SYSTEM REBOOT", then please restart DVR.

4.12 CDRW BACKUP

```
CDRW BACKUP
• START TIME SETUP [<]
  START: 2005/10/05 00:01:00
  END   : 2005/10/05 00:05:00
• BACKUP CD SIZE: 000MB
• CLOSE CD/RW: YES
• ERASE CD/RW: NO
• BACKUP CDRW START [<]
```

▲ or ▼ to change item
◀ or ▶ to change page

A. START TIME SETUP

Press **ENTER** key to access into START TIME SETUP diagram, and by ▲ or ▼ to change number & by ◀ or ▶ to switch item, press **ENTER** key again to confirm the start time, system would check the start time automatically and back to CDRW BAKCUP.

B. BACKUP CD SIZE

By ◀ or ▶ to decide the backup size and the END time will changed automatically.

C. CLOSE CD/RW

By ◀ or ▶ to decide to close the CD disk or not.

YES: Close CD R/W disk and can't write data any more.

System would block the inner ring on the disk, and no more data can't be writing, otherwise using CDRW disk & Erase Disk function.

NO: Keep CD R/W in writable status until disk full.

D. ERASE CD/RW

By ◀ or ▶ to decide to erase the CD disk or not.

YES: Erase all data on the CD R/W before START BACKUP.

System would remove all data on the CDRW disk, CD-R can't.

NO: Keep all data on the disk and add new file on the CD R/W.

E. BACKUP CDRW START

Press **ENTER** to start CDRW backup.

If without CD disk in the CDRW recorder, please put the CD disk in and repress the **ENTER** to start CDRW backup.

After backup finished, CDRW recorder would eject automatically.

F. BACKUP FILE NAME

Each backup file will named as the time when backup, as like:
10061817.05 will be Oct 6th 18:17 channel 5.

4.13 LOAD DEFAULT

Press **ENTER** to load the system default setting, and "LOAD DEFAULT !" would shown on the screen until restore finish.

5 DVR PLAYBACK

QUICK TIME SEARCH

- PLAY TIME SEARCH
- EVENT LIST SEARCH

Press **PB** key in the live viewing mode to access into quick time search mode, by **▲** or **▼** to enter search mode.

5.1 PLAY TIME SEARCH

PLAY TIME SEARCH

```
YYYY/MM/DD  HH:MM:SS
2005/10/10  00:01:00

[MASTER HDD]
START TIME:
2005/10/01  00:00:00
END   TIME:
2005/10/10  00:00:00
[MASTER HDD]
START TIME:
2005/10/10  00:00:00
END   TIME:
2005/10/20  00:00:00
```

By **▲** or **▼** to switch item & by **◀** or **▶** to change the date or time, and then press **ENTER** key to start playback, press **LIVE** back to live viewing mode.

5.2 EVENT LIST SEARCH

```
EVENT LIST  MASTER  PAGE : 001
NO  YY/MM/DD  HH:MM:SS  CH  TYPE
01  05/10/10  00:01:00  --  POWER
02  05/10/10  00:02:00  --  RECORD
03  05/10/10  00:03:00  01  V.LOSE
04  05/10/10  00:04:00  02  ALARM
05  05/10/10  00:05:00  03  MOTION
06  05/10/10  00:06:00  --  POWER
07  05/10/10  00:07:00  --  RECORD
08  05/10/10  00:08:00  01  V.LOSE
09  05/10/10  00:09:00  02  ALARM
10  05/10/10  00:10:00  03  MOTION
```

By **▲** or **▼** to switch item and press **ENTER** key to start playback, press **LIVE** back to live viewing mode.

5.3 USB BACKUP BEFORE BACKUP

- Press the **USB** key to check the USB disk volume which connected on USB port in the live viewing mode
- Get into playback mode by time search or event list search, and playing the video.

VIDEO BACKUP

During multiplexer or single full channel mode, press the **USB** button at the time point to start the backup, and press the **USB** button again to stop backup, and then system would save video into USB disk.

PICTURE BACKUP

During single full channel mode, pause the screen and press the **USB** button, and then system would save the picture into USB disk.

BACKUP FILE NAME

Each backup file will named as the time when backup, as like:
10061817.05 will be Oct 6th 18:17 channel 5.

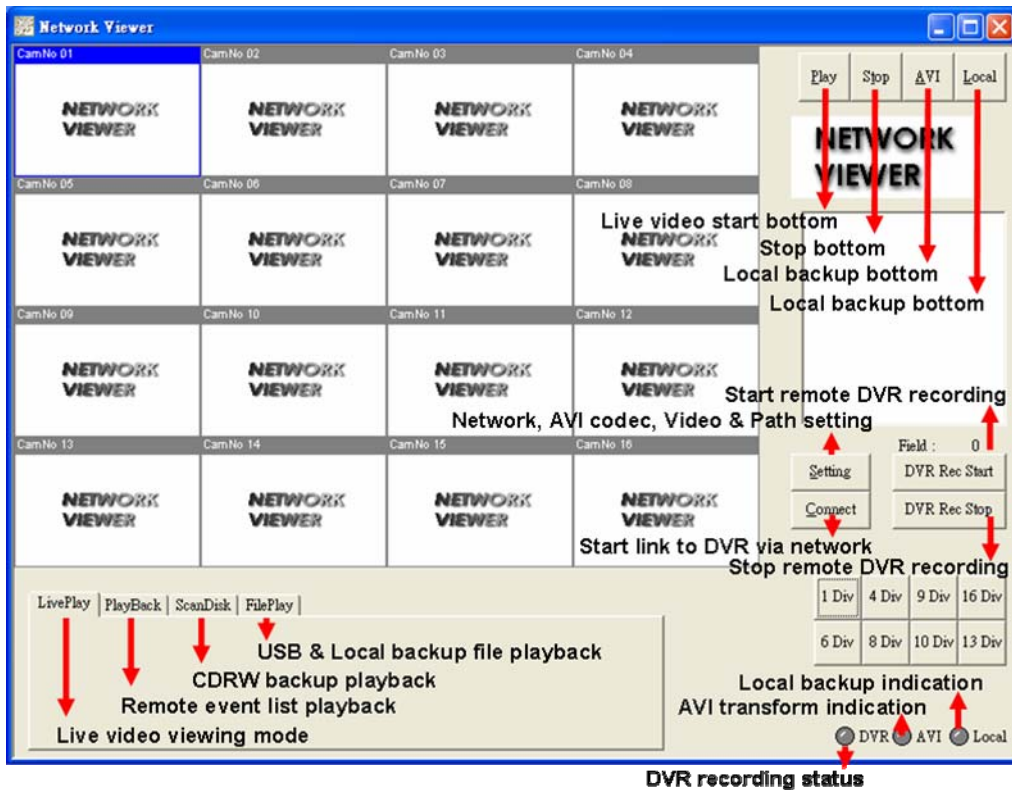
6 NETWORK & BACKUP PLAYBACK

6.1 SYSTEM REQUIREMENT

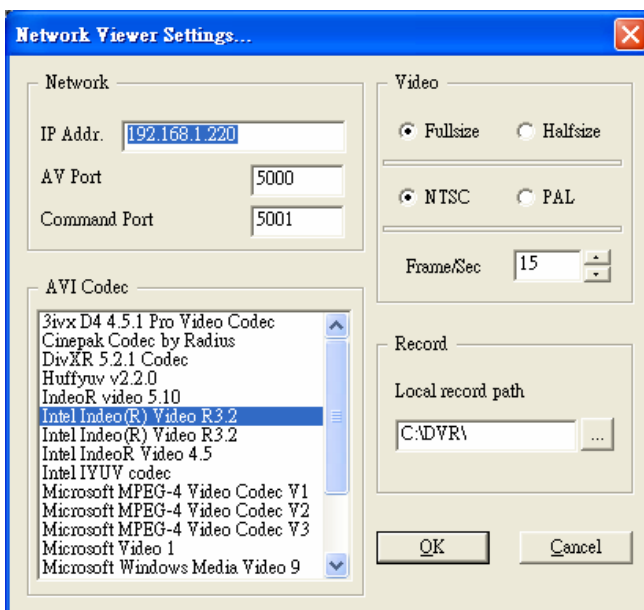
CPU: Intel Pentium III 1G or above.
 MEMORY: 256 MB or above.
 VGA: 32MB/64MB or above.
 OS: Microsoft Windows XP SP2 or above.

6.2 MAIN SCREEN SETTING

A. MAIN SCREEN



Click on **SETTING** button into Network viewer setting & confirm the following item:



Network

IP address, port numbers must be same as the DVR.

AVI Codec

Pick up a codec for the video transform into AVI, each codec has different advantage. it recommends for Microsoft or Windows for most popular usage.

Video

Check the item for video size, system & frame per second.

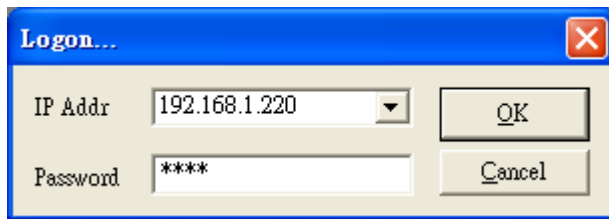
Record

The path for local PC storage.

6.3 LINK TO DVR & LIVE VIDEO

A. Click the **Connect** icon

B. Key in the password (same as DVR) and press OK connect to DVR.



C. While "Connect OK" dialog occur means connect successfully.



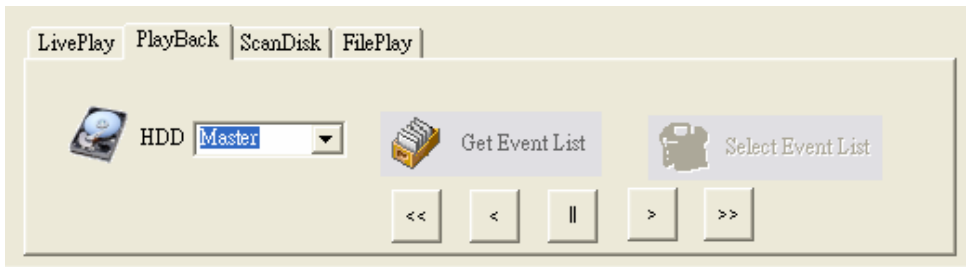
D. Select **LivePlay** folder.

E. Click **PLAY** button to start live viewing.

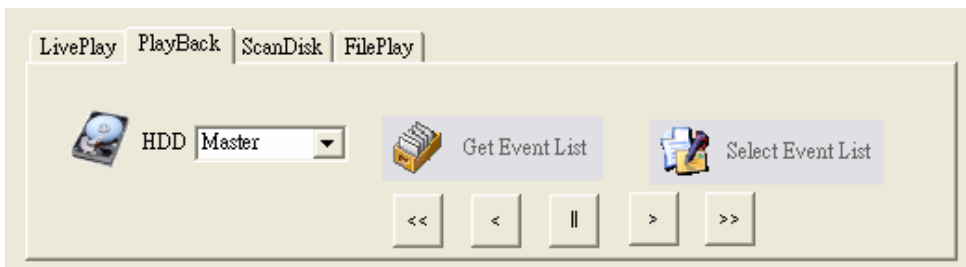
6.4 REMOTE EVENT PLAYBACK

A. Select **PlayBack** folder.

B. Select HDD for Master or Salve, and click **Get Event List** from DVR.



C. When **Select Event List** item color is from gray to black, it means DVR get the list & Click **Select Event List**.

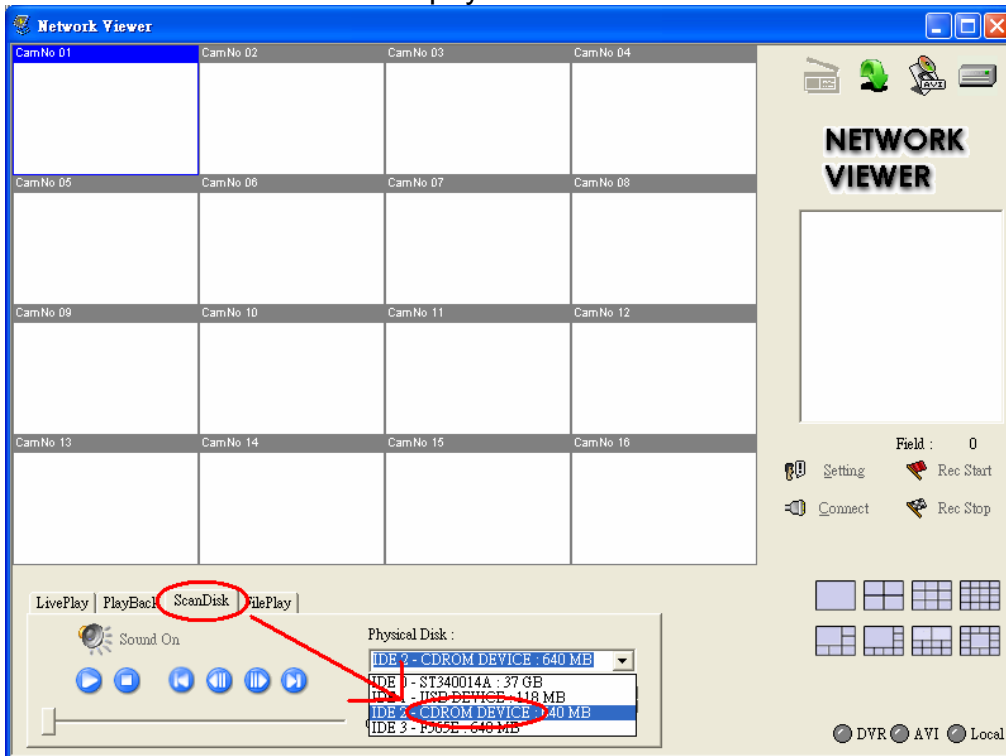


D. The event list will pop up & double click on the event which wants to playback.

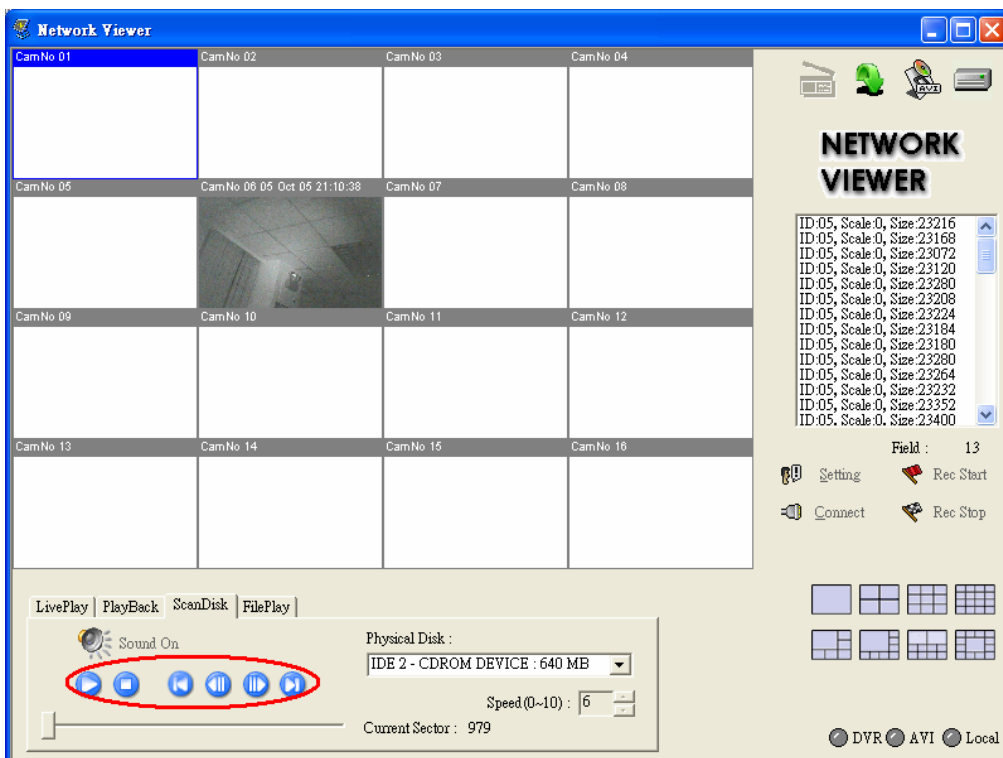
N.O	YY/MM/DD HH:MM:SS	CHANNEL	TYPE
1	05/10/05 18:07:36	--	RECORD
2	05/10/05 16:15:10	CH 06	V.LOSS
3	05/10/05 14:50:31	--	RECORD
4	05/10/05 12:05:50	--	RECORD
5	05/10/05 12:04:34	--	RECORD
6	05/10/05 12:04:19	--	RECORD
7	05/10/05 11:37:36	--	RECORD
8	05/10/05 09:30:58	--	POWER
9	05/10/05 08:26:06	--	RECORD
10	05/10/05 05:25:01	--	RECORD

6.5 CDRW BACKUP PLAYBACK

A. Insert the CD disk into CDRW, the software will pop up automatically, select "ScanDisk" and select the physical disk which CD disk is inside.

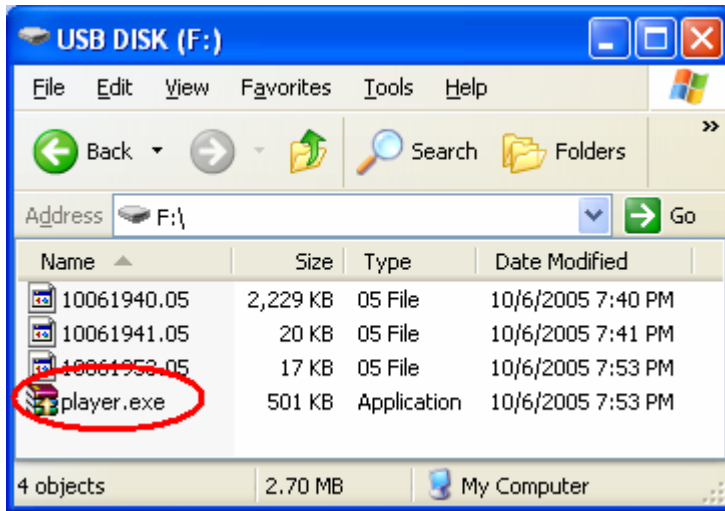


B. Press the play icon to play the video.

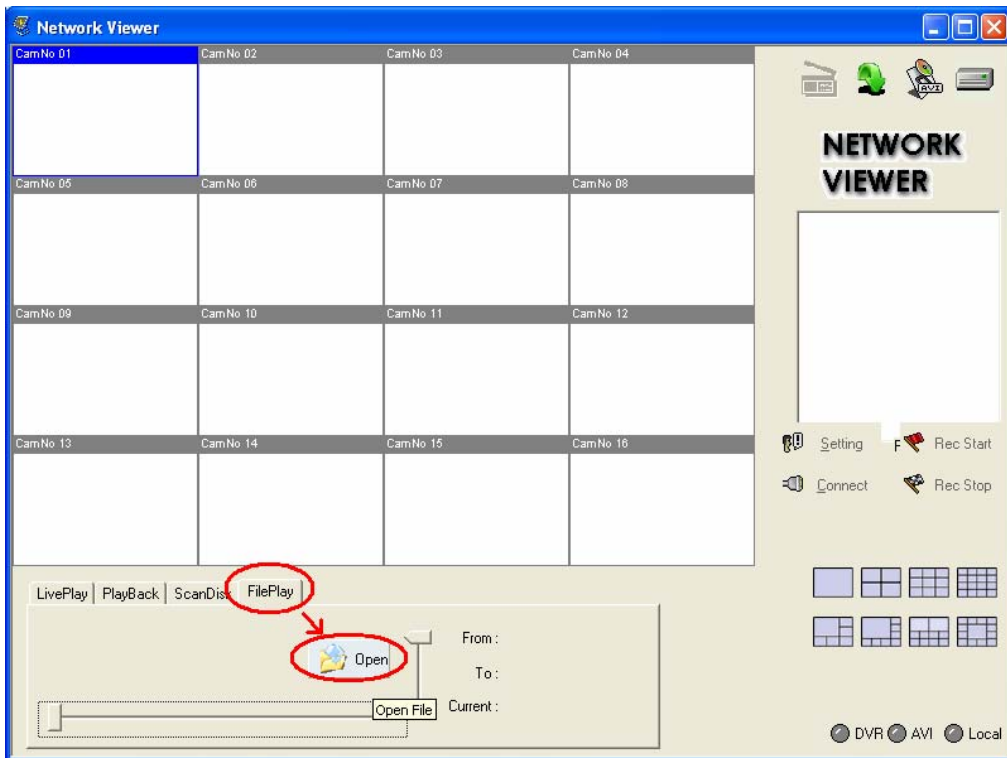


6.6 USB & LOCAL BACKUP FILE PLAYBACK

- 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)

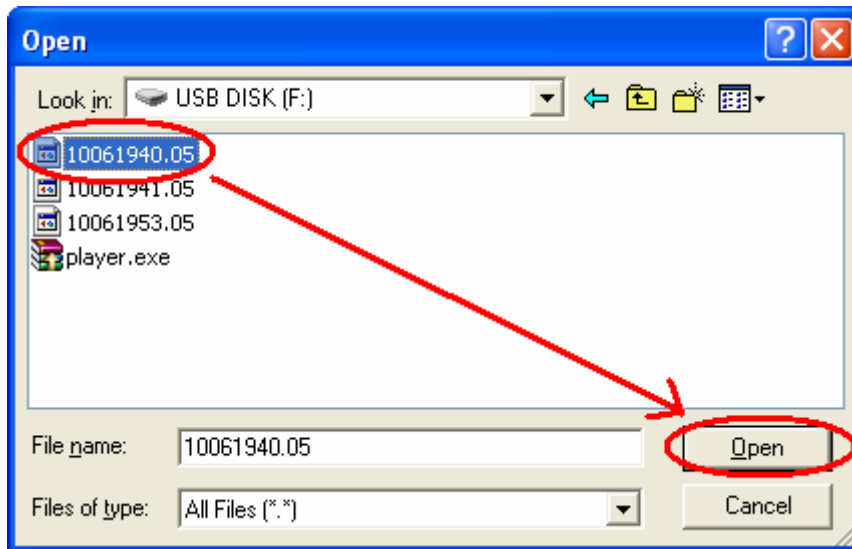


- B. The play backup program will appear on the screen, select "FilePlay" and "Open".

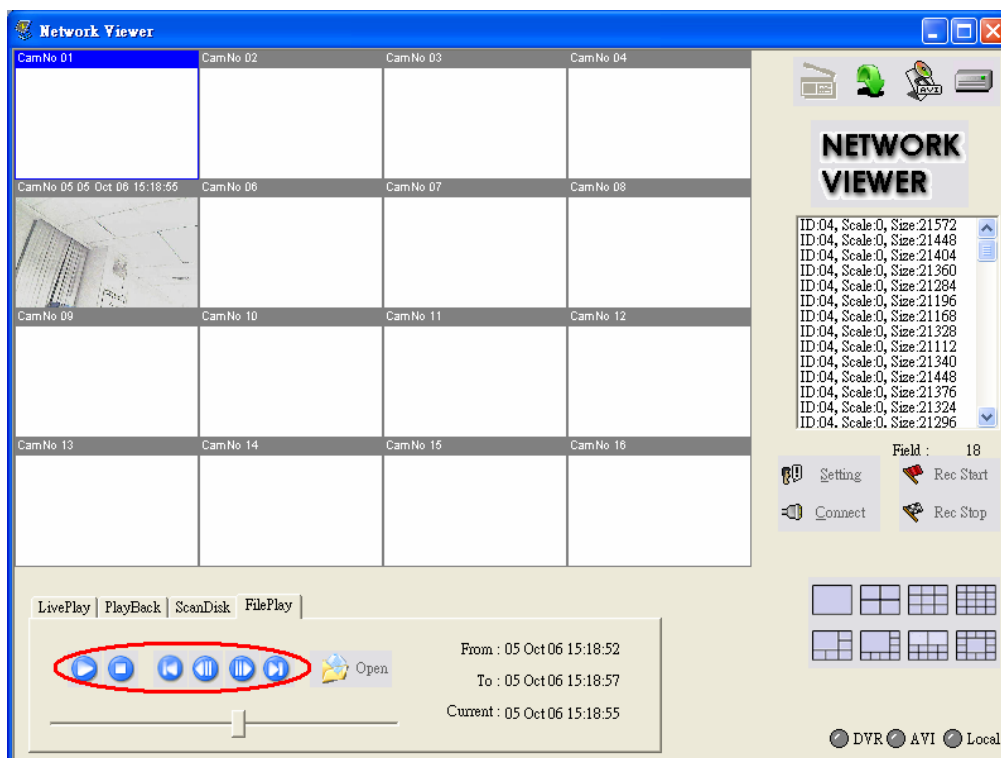


C. Open the USB disk where the drive located. (Example F:) or the local backup folder, and select the file to playback.

The backup file will be named as the time when backup, as like: 10061940.05 will be Oct 6th 19:40 channel 5.

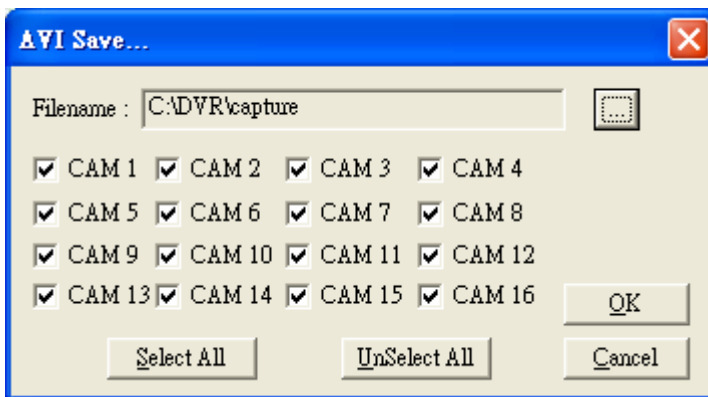


D. Press the play icon to play the video or still picture.



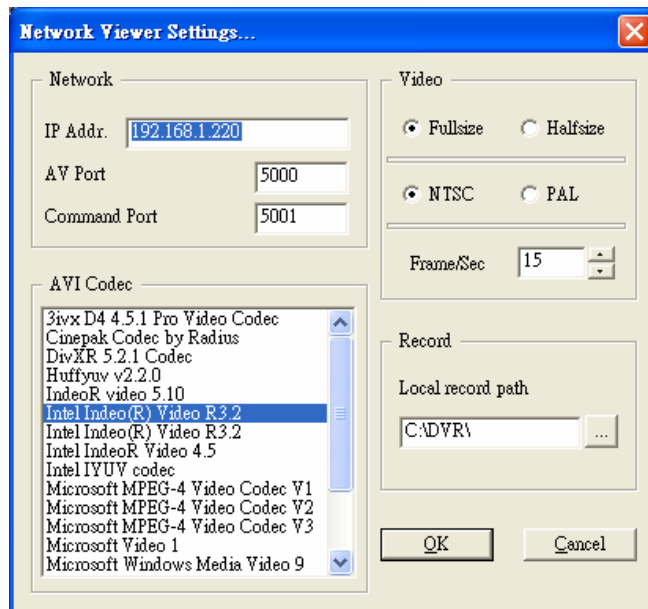
6.7 BACKUP FILE TO AVI

- A. During video playback mode, press AVI button, then the "AVI Save" dialog will appear on the screen.
- B. Make up a filename and path then press **OK** button to start AVI backup, and the AVI transform indicator light would be in green.
(Recommend to check all camera channel box, system would ignore these channels to backup if without video signal.)



6.8 LOCAL BACKUP

- A. Before backup please click on **SETTING** button into Local record path. Make up the path to save local backup file.



- B. During video playback mode and press LOCAL button and the LOCAL indicator light would be in green.

APPENDIX A: RECORDING TIME TABLE

80GB Hard Disk									
FPS (field per sec.)		60 / 50	30 / 25	15 / 12	10	5	3	2	1
Record Quality	Best	9 hr	18 hr	37 hr	56 hr	112 hr	186 hr	280hr	560 hr
	High	13 hr	27 hr	55 hr	83 hr	166 hr	277 hr	416 hr	832 hr
	Middle	17 hr	34 hr	68 hr	103 hr	206 hr	323 hr	343 hr	1031 hr
	Low	20 hr	40 hr	81 hr	122 hr	245 hr	408 hr	613 hr	1226 hr

160GB Hard Disk									
FPS (field per sec.)		60 / 50	30 / 25	15 / 12	10	5	3	2	1
Record Quality	Best	18 hr	37 hr	74 hr	112 hr	224 hr	373 hr	560 hr	1120 hr
	High	27 hr	55 hr	110 hr	166 hr	332 hr	554 hr	832 hr	1664 hr
	Middle	34 hr	68 hr	137 hr	206 hr	412 hr	687 hr	1031 hr	2062 hr
	Low	40 hr	81 hr	163 hr	245 hr	490 hr	817 hr	1226 hr	2452 hr

240GB Hard Disk									
FPS (field per sec.)		60 / 50	30 / 25	15 / 12	10	5	3	2	1
Record Quality	Best	28 hr	56 hr	112 hr	168 hr	336 hr	560 hr	840 hr	1680 hr
	High	41 hr	83 hr	166 hr	249 hr	499 hr	832 hr	1248 hr	2496 hr
	Middle	51 hr	103 hr	206 hr	309 hr	618 hr	1031 hr	1546 hr	3093 hr
	Low	61 hr	122 hr	245 hr	367 hr	735 hr	1226 hr	1839 hr	3679 hr

400GB Hard Disk									
FPS (field per sec.)		60 / 50	30 / 25	15 / 12	10	5	3	2	1
Record Quality	Best	46 hr	93 hr	186 hr	280 hr	560 hr	933 hr	1400 hr	2800 hr
	High	69 hr	138 hr	277 hr	416 hr	832 hr	1387 hr	2080 hr	4161 hr
	Middle	85 hr	171 hr	343 hr	515 hr	1031 hr	1718 hr	2577 hr	5155 hr
	Low	102 hr	204 hr	408 hr	613 hr	1226 hr	2044 hr	3066 hr	6132 hr

APPENDIX B: POWER COMSUMPTION TABLE

	110V				220V			
	NON-CDRW		CDRW		NON-CDRW		CDRW	
	NON-VGA	VGA	NON-VGA	VGA	NON-VGA	VGA	NON-VGA	VGA
1 HDD	27W	31W	29W	33W	27W	32W	29W	33W
2 HDD	33W	37W	35W	41W	34W	38W	36W	42W

APPENDIX C: HDD / USB COMPATIBLE LIST

Brand	Model	Capacity	Speed (rpm)
Seagate	ST380011A	80GB	7200 rpm
Seagate	ST3120023A	120GB	7200 rpm
Seagate	ST3160023A	160GB	7200 rpm
Seagate	ST3400832A	400GB	7200 rpm
Maxtor	6Y120L0	120GB	7200 rpm
Maxtor	6Y080L0	80GB	7200 rpm
Maxtor	6Y160P0	160GB	7200 rpm
Maxtor	7Y250P0-A	250GB	7200 rpm

Brand	Model	Capacity	Part No.
SanDisk	Cruzer Micro with Skins	256MB	SDCZ4256A10
Transcend	JetFlash 110	512MB	TS512MJF110
Transcend	JetFlash 110	1GB	TS1GJF110