USER MANUAL

9/16 CHANNELS
DIGITAL VIDEO RECORDER

INSTRUCTION MANUAL

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

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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

⚡	**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.

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

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V1.01   31/OCT/2005

11633RFMK01

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 PORT ARE READY FOR SUB-CONTROL PANELS ADD ON IN THE FUTURE.
- CDRW, USB & VGA 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	
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
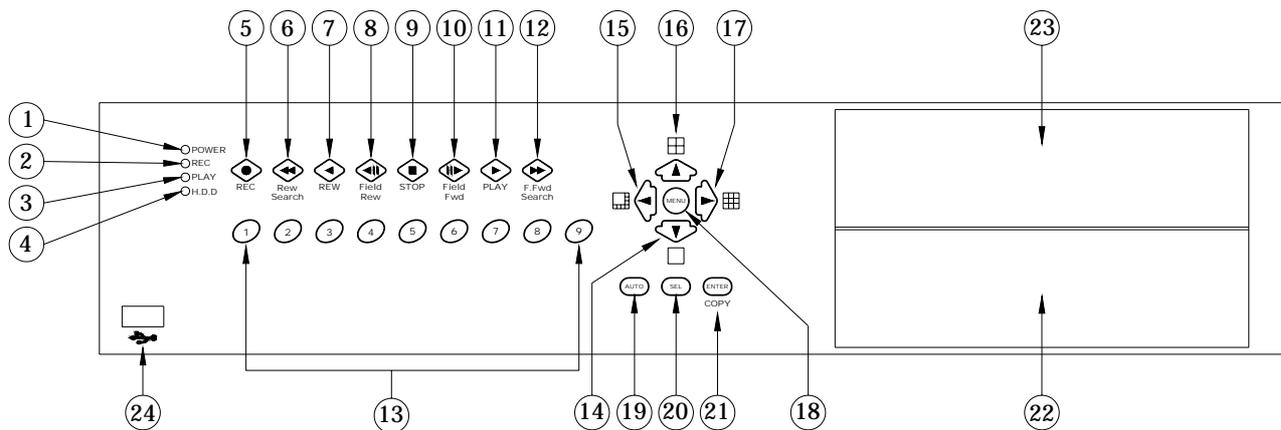
Front Panel of 9-ch DVR
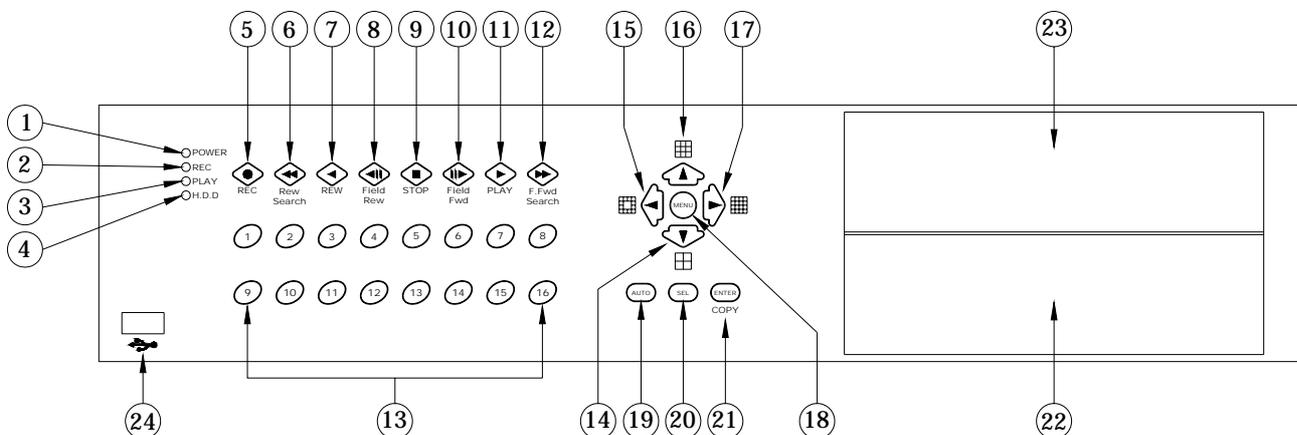
Front Panel of 16-ch DVR

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	REC	Press REC to start recording. Press again to stop.	
6	◀◀	From ×2,×4,×6,X8 to the highest ×16 speed fast rewind mode, speed and rewind sign will be indicated in top left corner on the screen.	
7	◀	Press the Rew button to play video backward.	Zoom out
8	◀❙	Press Field Rew to pause video backward	
9	■	Press Stop to stop playback	
10	❙▶	Press Field Fwd to pause video forward	
11	▶	Press the Play button to play video forward.	Zoom in

4

12	▶▶	Press F. Fwd to play video forward at high speed. Press the button again the speed will be change circulative from ×2,×4,×6,x8,x16 to the highest ×32.	
13	1-9 / 1-16	Press the button to display full screen.	
14	▼	Move downward or decrease the number. Select **full/quad** formats at **9/16-ch DVR** model.	Down
15	◄	Move leftward or decrease the number Select **8/13** camera formats at **9/16-ch DVR** model.	Left
16	▲	Move upward or increase the number. Select **quad/9** camera formats at **9/16-ch DVR** model.	Up
17	►	Move rightward or increase the number Select **9/16** camera formats at **9/16-ch DVR** model.	Right
18	MENU	Press MENU to go into or exit main menu	PTZ setup
19	AUTO	Press AUTO to switch channel by channel automatically.	Auto Scan
20	SEL	Press this button to select the different assembled of camera formats.	Enter or exit PTZ mode
21	ENTER/ COPY	Press ENTER button to make choose or move cursor forward or make confirm in MENU system. / Backup video or picture to USB or CDRW.	Home
22	CDRW	Slot for CDRW.	
23	HDD	Location of installation for removable HDD.	
24	⟵•⟶	USB connector	

2.2 BACK PANEL
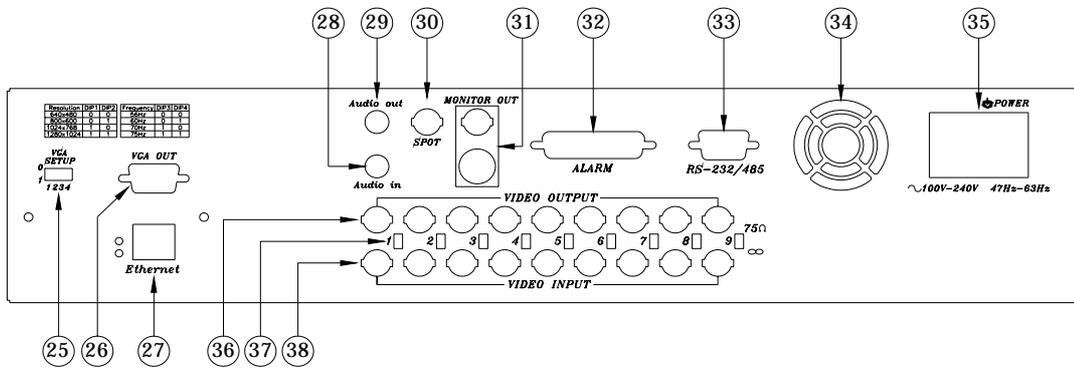
Back panel of 9-ch DVR
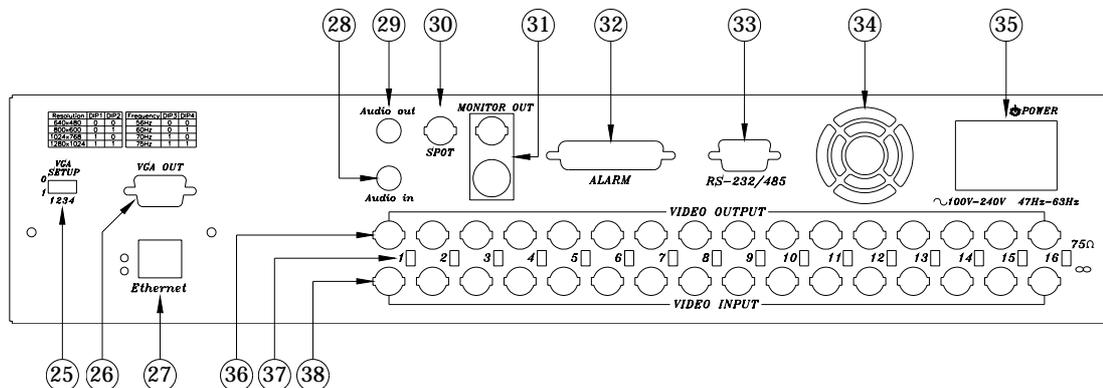
Back panel of 16-ch DVR

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 switcher: 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
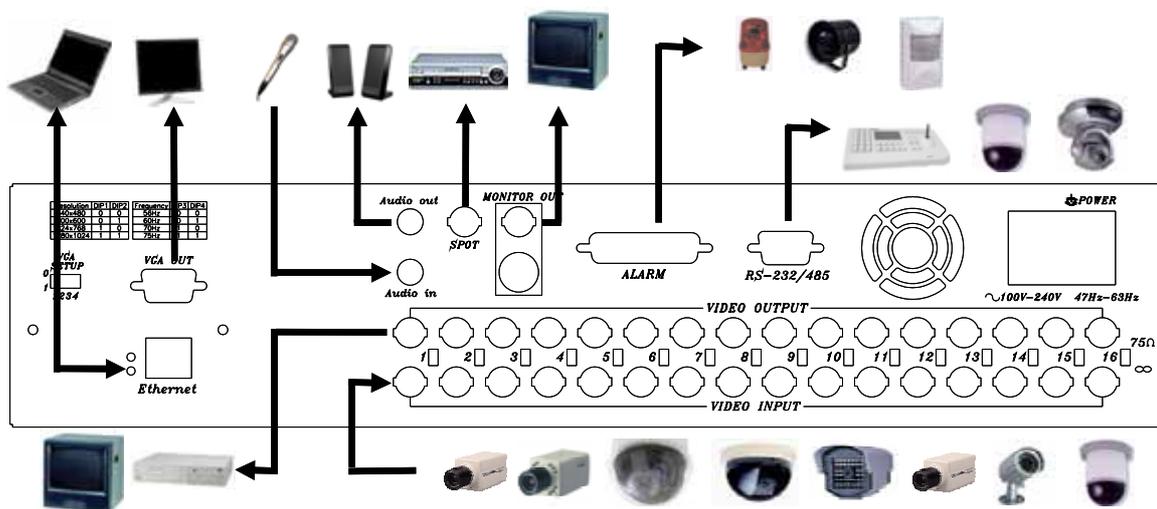
3.1 CAMERA & MONITOR LOOPING

75 Ω: If camera looping to other devices or channels but video single instable.

∞ : In case of camera input over bright that please switches to this position

3.2 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>.

<u>Motion detection Alarm and External Alarm</u>:

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 within 5 seconds.

c. Relays can be activated by motion detection or external alarm when turning on.

d. External alarm will be recorded in event list. Motion detection can be setting 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.

<u>Video Loss Alarm</u>:

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

<u>25 PIN D-Sub connector</u> 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 contract type devices.

The alarm hold input accept TTL/COMS alarm signal as well as contract 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.

EX1

EX2
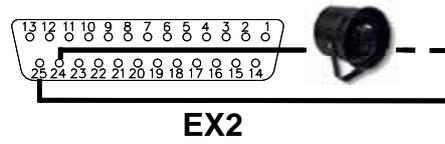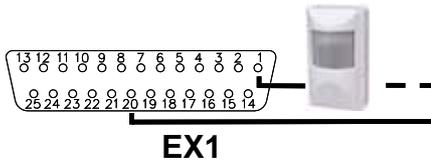
3.3 RS-232/485 CONTROLLER

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

Dome Cam 1   CH 1   ID 1
Dome Cam 2   CH 2   ID 2
Dome Cam 3   CH 3   ID 3

RXD TXD

D0+ D0- D1+ D1-   0 1 0 1   A B A B   Up to 9/16CH
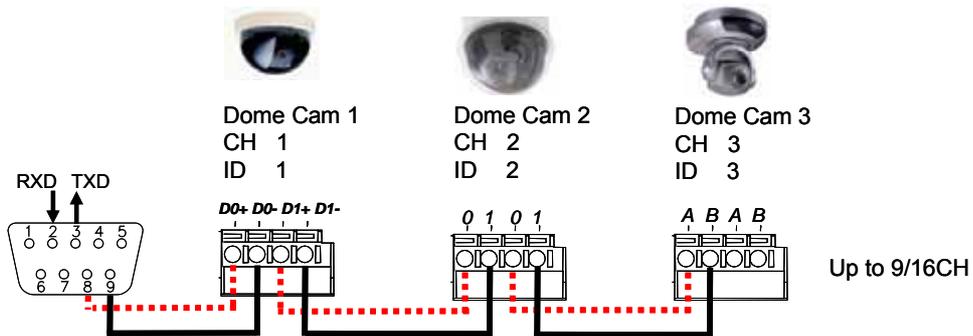
Data format
Data: 1 Byte / Parity: None / Start bit: 1 / Baud: 9600
Totally 3 bytes in data frame:

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

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

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, if link with joystick controller please confirm your DVR ID number. Every DVR ID & the PTZ camera ID behind DVR must be unique.
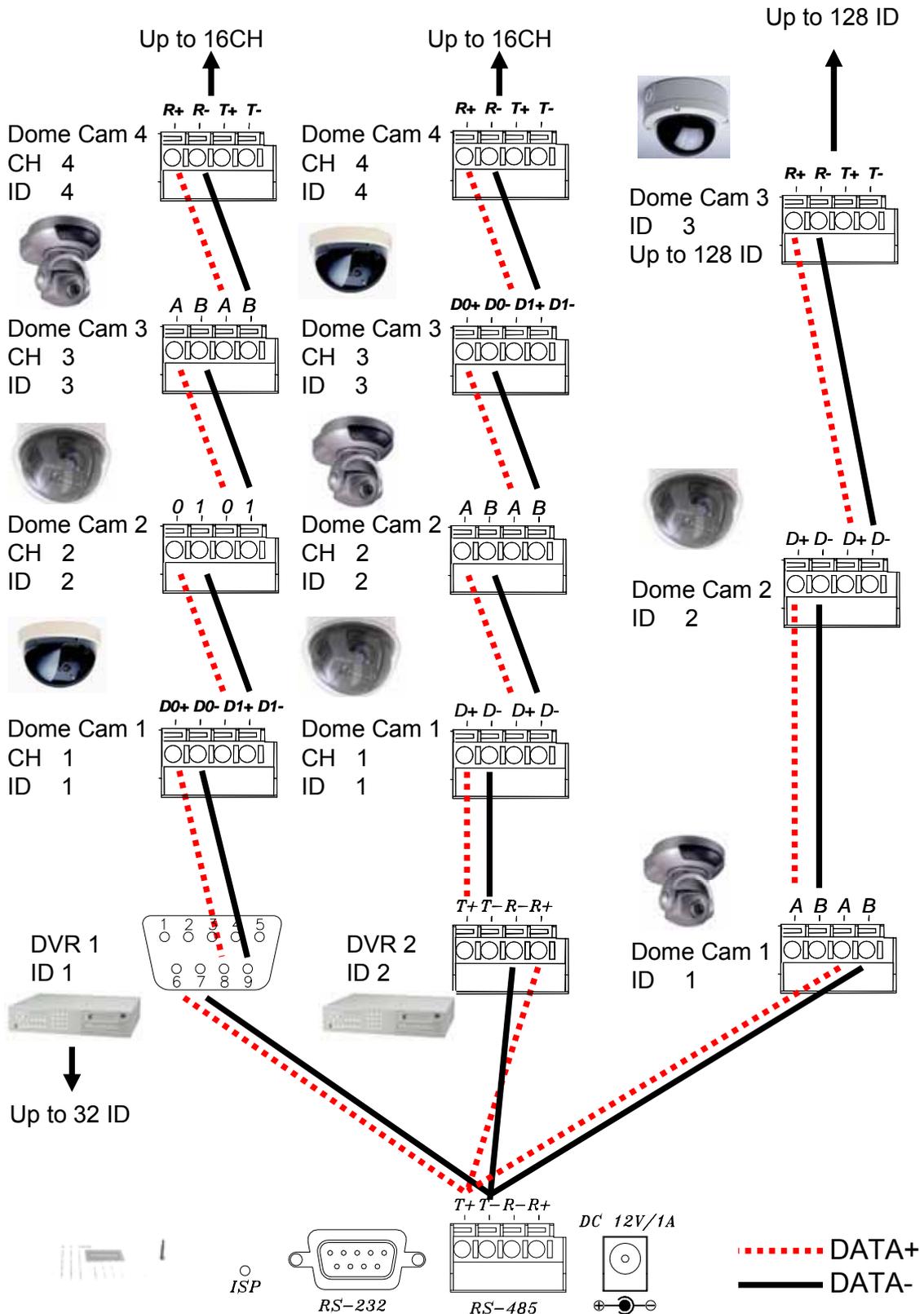
3.5 NETWORK

Before start the network application software, please confirm the RJ-45 cable been connected, and than turn the power on.

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

Please make sure your network environment enabled and RJ-45 cable been connected, before DVR power up!

4 SYSTEM SETUP

4.1 SETUP MENU DIAGRAM

```
SETUP MODE
• SYSTEM SET            [<]
• CAMERA SET            [<]
• MOTION SET            [<]
• RECORD SET            [<]
• ALARM  SET            [<]
• EVENT  LIST           [<]
• HDD MANAGEMENT        [<]
• NETWORK  SET          [<]
• FIRMWARE UPDATE       [<]
• CDRW BACKUP           [<]
• LOAD DEFAULT
• EXIT
```

```
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
• KEYBARD LOCK          OFF
• ID NUMBER             01
• LANGUAGE SELECT       ENGLISH
• PASSWORD MODE         DISABLE
• EXIT
```

```
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
```

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

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

```
HDD MANAGEMENT
• OVERWRITE MODE    ON
• CAPACITY WARNING  20%
• HDD FORMAT SETUP  [<]
• EXIT

DISK      CAPACITY    LEFT RATIO
MASTER    80GB          41%
SLAVE     NONE          NONE
```

```
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
```

```
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
```

```
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
```

```
FIRMWARE UPDATE

FIRMWARE UPDATE START   [<]
```

```
CDRW BACKUP

• START TIME SETUP [<]
  START: 2005/10/04 00:00:00
  END  : 2005/10/04 02:00:00
• BACKUP CD SIZE: 000MB
• CLOSE CD/RW: YES
• ERASE CD/RW: NO
• BACKUP CDRW START [<]
```

4.2 LIVE VIEWING

A. Status indicator:

During live viewing mode we could press **ENTER** key to switch live display indicator.

	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

During live viewing mode and press ▶ key into quick time search or event list search mode.

C. PTZ control:

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

D. Channel AUTO switch

Press **AUTO** key system would into full screen auto switch mode, and press **AUTO** key again back to normal screen.

E. Channel selection

During split channel mode the windows will be limited, thus using the **SEL** key to switch others channel on the screen.

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
 •KEYBARD LOCK         OFF
 •ID NUMBER            01
 •LANGUAGE SELECT      ENGLISH
 •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 would switch system type automatically, after press **MENU** key.

H. KEYBOARD LCOK

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 LCOK mode setup, please setup the **PASSWORD** !

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

I. ID NUMBER

By ◄ or ► to change value.

This ID number to identify DVR location between DVR & remote controller or joystick controller.

J. LANGUAGE SELECT

By ◄ or ► to change OSD language.

K. 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

By ◄ or ► to change camera channel.

B. DISPLAY

By ◄ or ► to change value for this camera would display on screen or not.

C. RECORD

By ◄ or ► to change value for this camera would include with the recording or not.

D. BRIGHTNESS

By ◄ or ► to change brightness level.

E. CONTRAST

By ◄ or ► to change contrast level.

F. HUE

By ◄ or ► to change HUE level.

G. COLOR

By ◄ or ► to change 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

By ◄ or ► to change value for camera motion setup.

B. MOTION DETECT

By ◄ or ► to change value for motion detect function.

C. BUZZER

By ◄ or ► to change value for buzzer or not while motion detected.

D.SENSITIVITY

By ◄ or ► to 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 need 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
By ◄ or ► to change value for schedule recording function.

A1.SCHEDULE RECORD SETUP
While SCHEDULE RECORD at 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 2 area weekday & weekend.

EXAMPLE 1:
If weekday is Monday to Friday, thus the weekend must be Saturday to Sunday.

EXAMPLE 2:
If weekday is Wednesday to Friday, thus the weekend must be Saturday to Tuesday.

EXAMPLE 3:
If weekday is Monday to Wednesday, thus the weekend must be Wednesday to Sunday.

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

A1.2
START-STOP
The 24 hours can be ALL TIME & separated hour's mode.

ALL TIME
Whole days using same recording type & FPS.

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 pre second 60 / 30 / 15 / 10 / 5 / 3 / 2 / 1 FPS.

A1.5
ALM FPS
By ◄ or ► to change alarm recording field pre second 60 / 30 / 15 / 10 / 5 / 3 / 2 / 1 FPS.

B. NORMAL RECORD FPS
By ◄ or ► to change how many field pre second in normal recording.
C. ALARM RECORD FPS
By ◄ or ► to change how many field pre second in alarm recording.
D. ALARM RECORD DWELL
By ◄ or ► to change how many second 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 second 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. EX. 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. ALRAM RELAY
   By ◄ or ► to change value for triggered the relay from external alarm device.
H. VIDEO LOSS REPLAY
   By ◄ or ► to change value for triggered the relay while video loss occurs.
I. MOTION RELAY
   By ◄ or ► to change value for triggered the relay if motion 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 event, with 2 hard disks would up to 4000 pieces, and header information bar would show the event belong 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 starts time of this event.

D. CH
Channel number, depend on what event type with specific channel.

E. TYPE
Following issues would list on event list**.**

POWER	If DVR been turn off, power up time would add on the list.
RECORD	If the record bottom been pressed.
V.LOSE	If a camera signal lose and channel number would on the list.
ALARM	If alarms been triggered this event would on the list.
MOTION	If motion been detected this event & channel would 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
By ◄ or ► to change value for overwrite or non-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
By ◄ or ► to change value for hard disk format password protection
C-2. HDD PASSWORD
By ▲ or ▼ to change item & by ◄ or ► to change value.
Preset password: 1111
C-3. FORMAT
Press ENTER key into hard disk format diagram.

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

By ◄ or ► to decide YES or NO, 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 IP address number.

B. GATEWAY

By ▲ or ▼ to switch item & by ◄ or ► to gateway number.

C. SUB NET

By ▲ or ▼ to switch item & by ◄ or ► to submask.

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 following steps.

!!CAUTION!!
Please make sure your firmware mode & version!
Wrong version firmware would make system damaged!

Update steps:

**1. Confirm the firmware must in the fold named "firmware",
   and the fold within following file from the picture as below:**
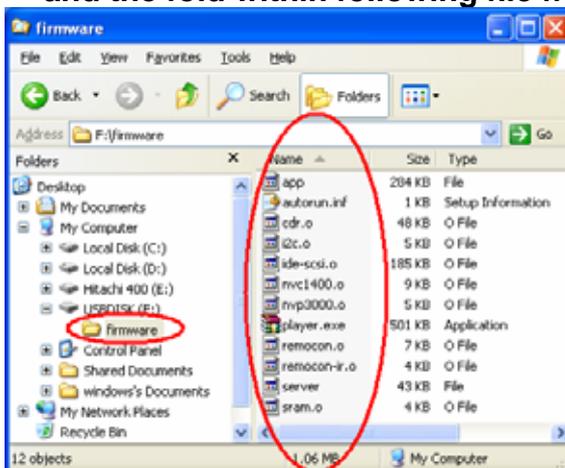
2. Plug the USB flash disk into USB connector.

3. Get into "FIRMWARE UPDATE" item & press ENTER to start update.

**4. After updated the screen would show "PLEASE SYSTEM REBOOT",
   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 into START TIME SETUP diagram,
and by ▲ or ▼ to change number & by ◄ or ► to switch item,
press ENTER key again confirm the start time,
system would check the start time automatically and back to CDRW BAKCUP.

B. BACKUP CD SIZE
By ◄ or ► to decide backup size and the END time will changed too.

C. CLOSE CD/RW
By ◄ or ► to decide close the CD disk or not.

YES: Close CD R/W disk and can't write in any more.
System would block the inner ring on the disk, and no more data can't be write, 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 close 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 be.

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 finish 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
```

During live viewing mode and press **PB** key 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 port number, and than press **ENTER** key to start playback, press **LIVE** back to live viewing.

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.

5.3 USB BACKUP
BEFORE BACKUP
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 **COPY** bottom at the time point to start the backup, and press the **COPY** bottom again to stop backup, and than system would saving video into USB disk.
PICTURE BACKUP
During single full channel mode pause the screen and press the **COPY** bottom, and than system would saving 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
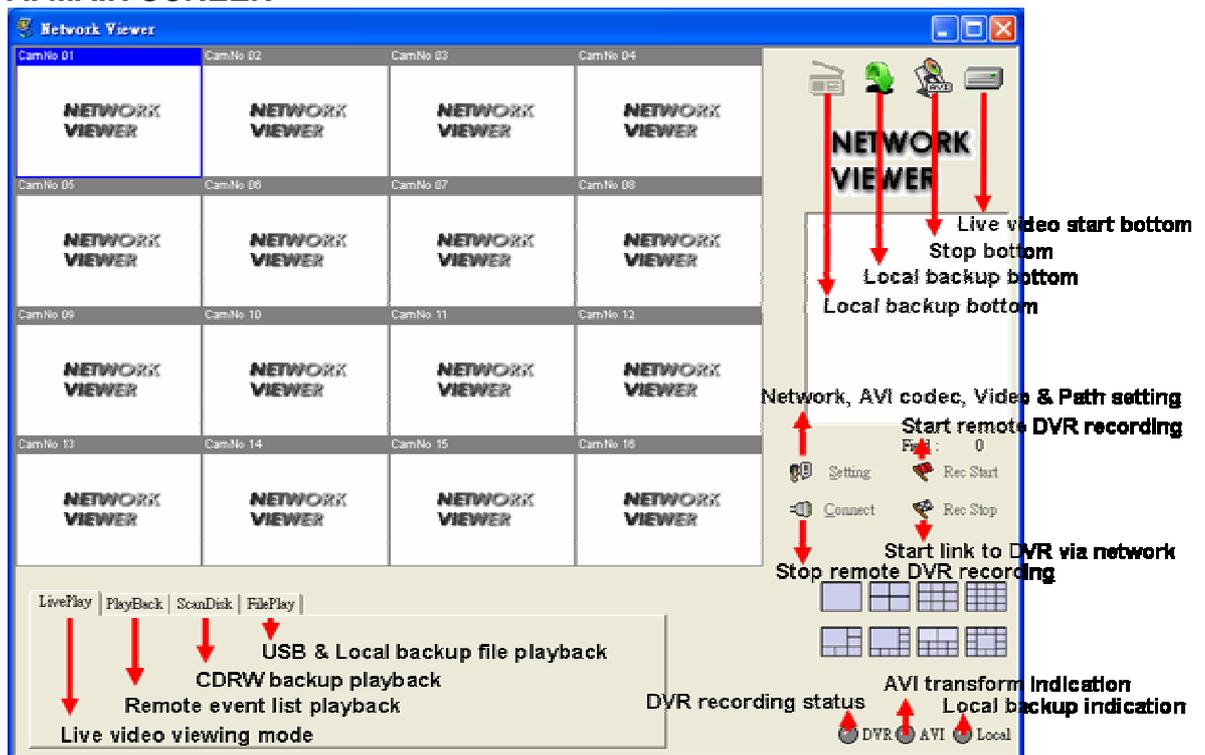
Click on SETTING bottom into Network viewer setting & confirm following item:
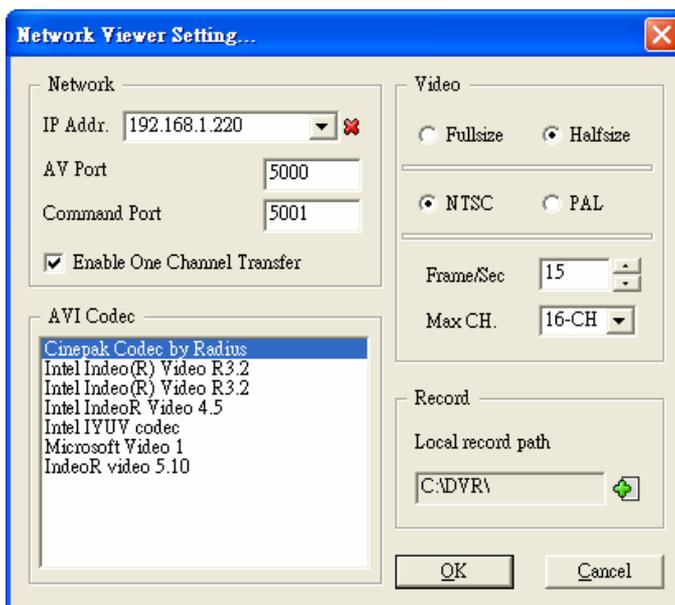
Network
IP address, port numbers must match with DVR.
AVI Codec
Pick a codec for the video transform into AVI, each codec with differ advantage, here recommend for Microsoft or Windows for must popular usage.
Video
Check the item for user's need video size, system & frame pre second.
Record
The location for local PC storage.

6.3 LINK TO DVR & LIVE VIDEO

A. Click the Connect icon link to DVR.

B. While "Connect OK" diagram occur means connect   successfully.

C. Pick LivePlay folder.

D. Click PLAY bottom to start live viewing.
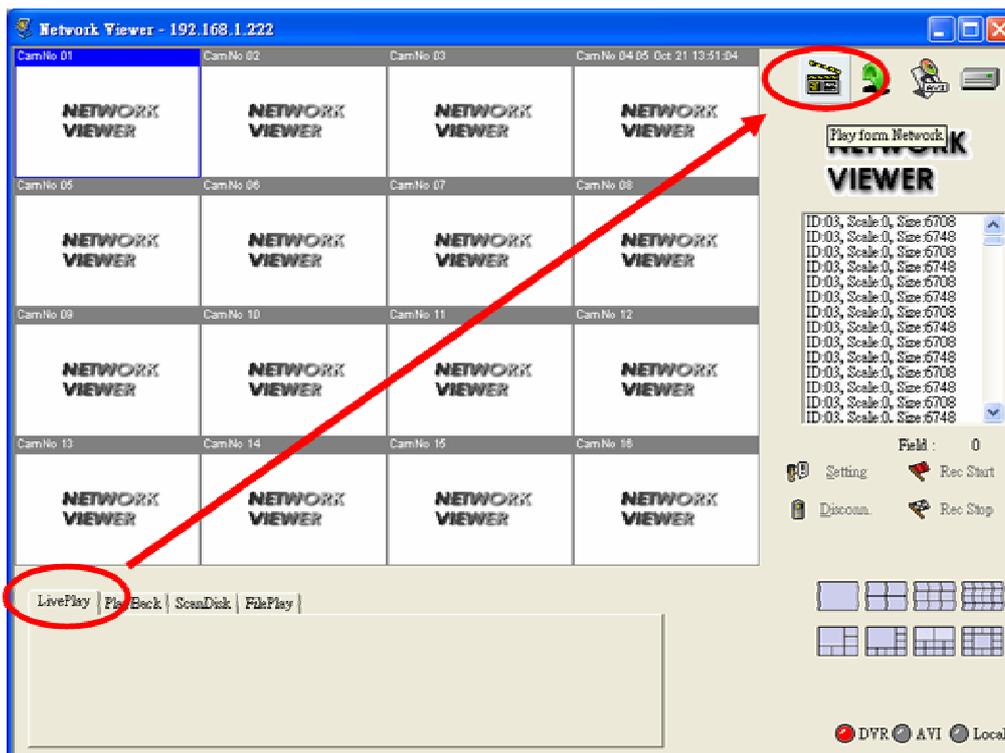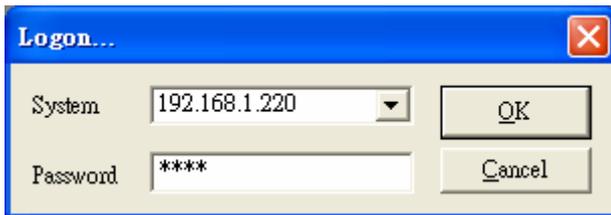
6.4 REMOTE EVENT PLAYBACK

A. Pick PlayBack folder.

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

C. When Select Event List item from gray to back, means DVR get the list & Click Select Event List.

D. The event list would pop out & double click on the event whom to playback.

6.5 CDRW BACKUP PLAYBACK

A. Insert the CD disk into CDROM, the software will auto pop out, and select "ScanDisk" and pick the physical disk which CD disk inside.
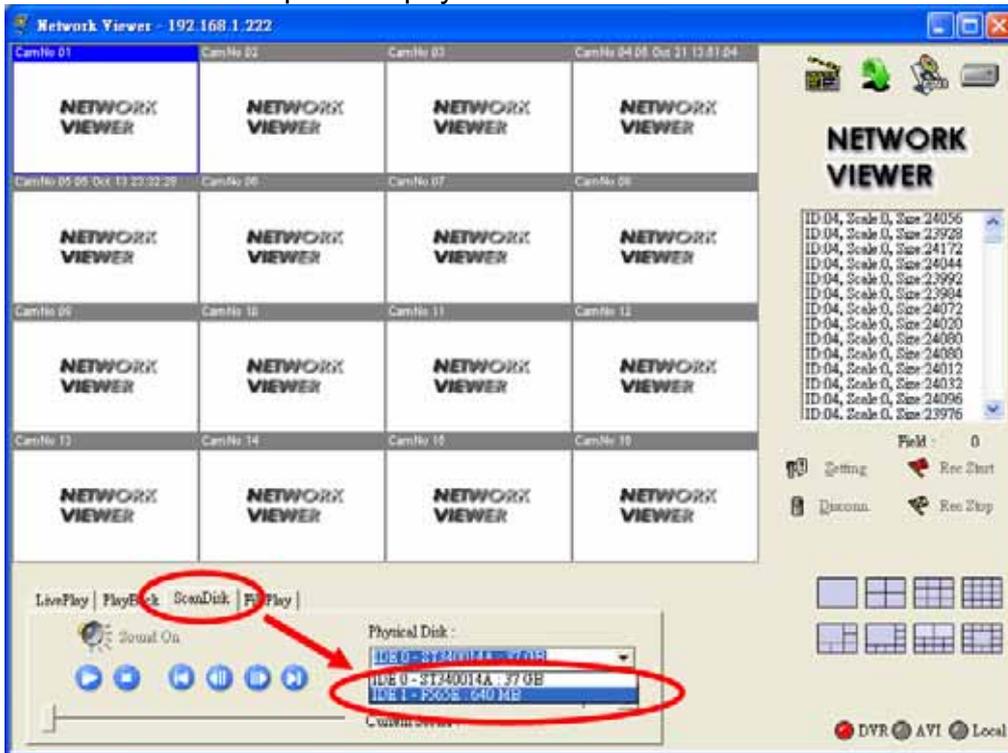
B. Press the play icon to play the video.
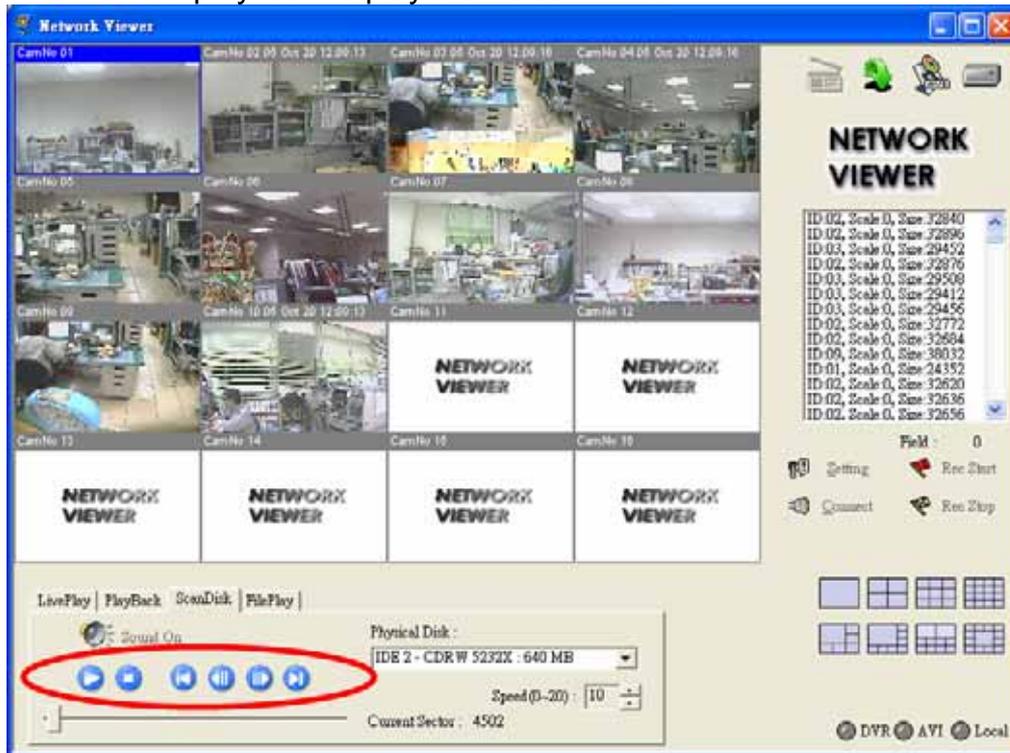
6.6   USB & LOCAL BACKUP FILE PLAYBACK

A. Plug the USB disk into PC or check the local backup folder.
If using in USB mode, please double click the player.exe from the auto pop out diagram. (as below)
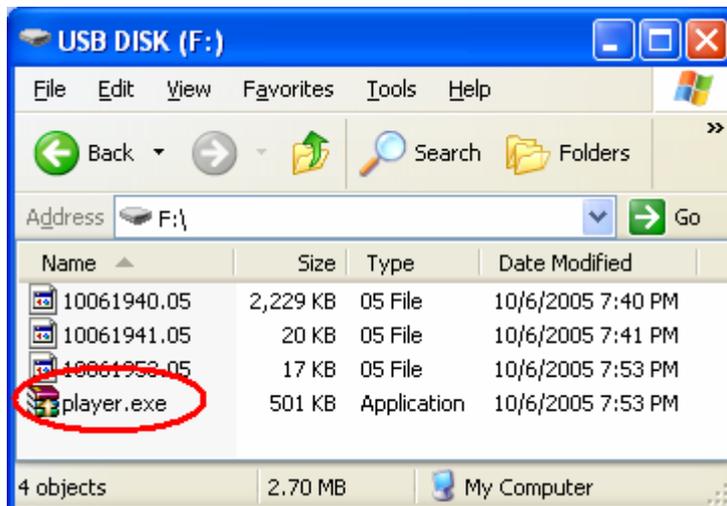
B. The play backup program would appear on the screen, select "FilePlay" and "Open".
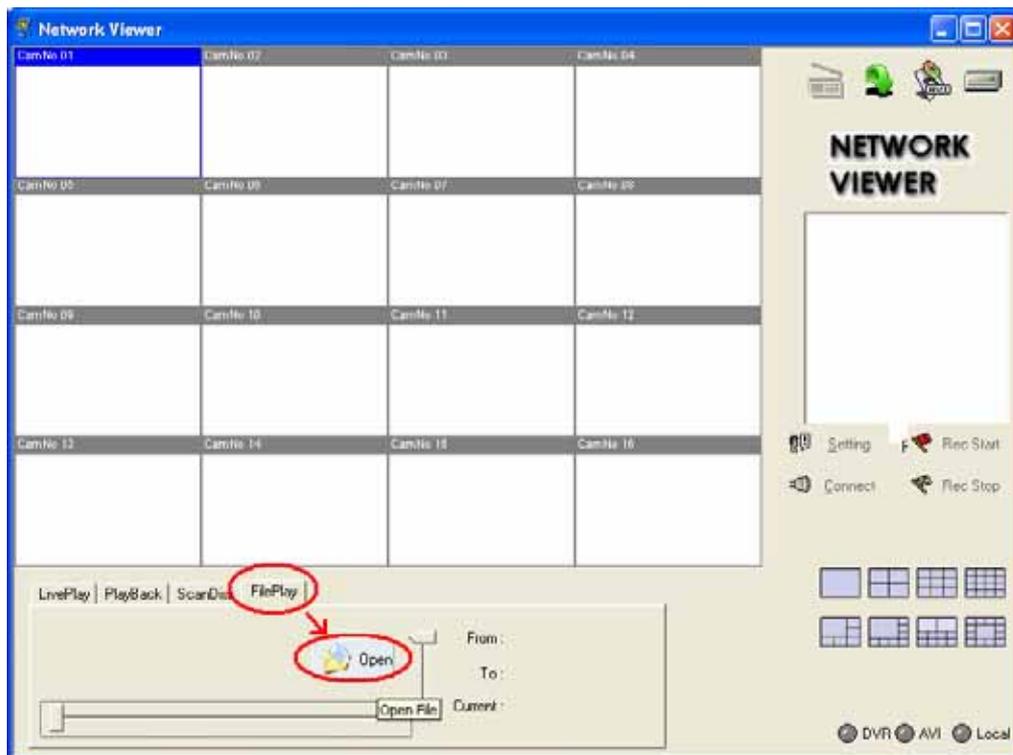
C. Open the USB disk located driver letter. (Example F:) or the local backup folder, and check the file to playback.

The backup file will named as the time when backup, as like:
10061940.05 will be Oct 6th 19:40 channel 5.
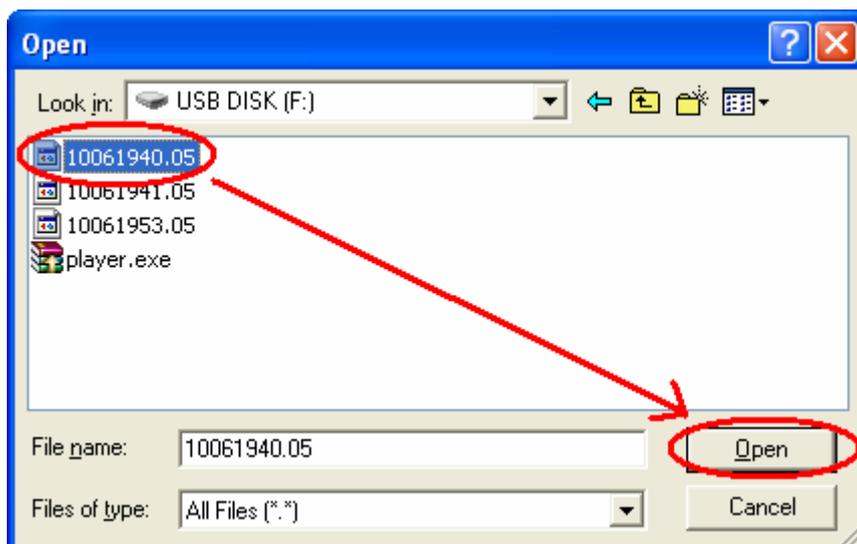
D. Press the play icon to play the video or still picture.
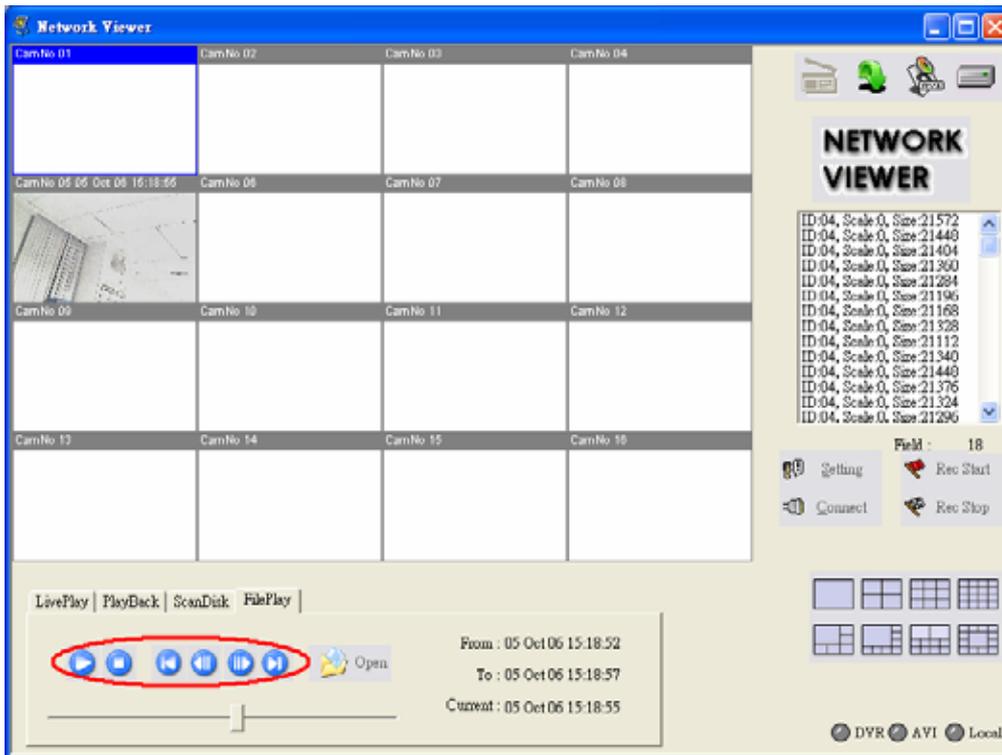
6.7 BACKUP FILE TO AVI

A. During video playback mode and press AVI bottom following "AVI Save" dialog would appear on the screen.

B. Make up a filename location and press **OK** bottom to start AVI backup, and the AVI transform indication would in green.
(Recommend check all camera channel box, system would neglect these channels to backup if without video signal.)
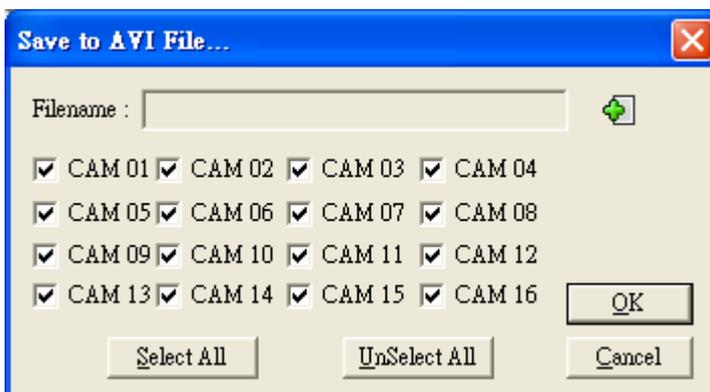
6.8   LOCAL BACKUP

A. Before backup please click on **SETTING** bottom into Local record path.
   Make up the location to saving local backup file.
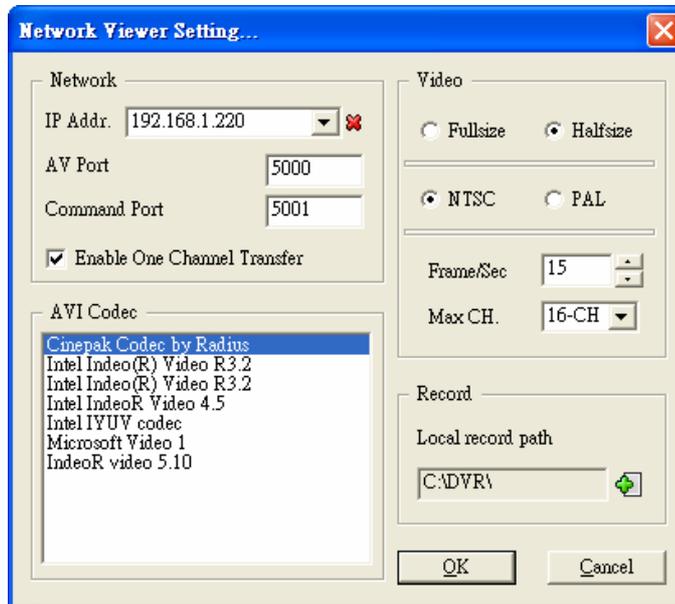
B. During video playback mode and press LOCAL bottom
   and the LOCAL indication would in green.

APPENDIX A:

RECORDING TIME LAPSE

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