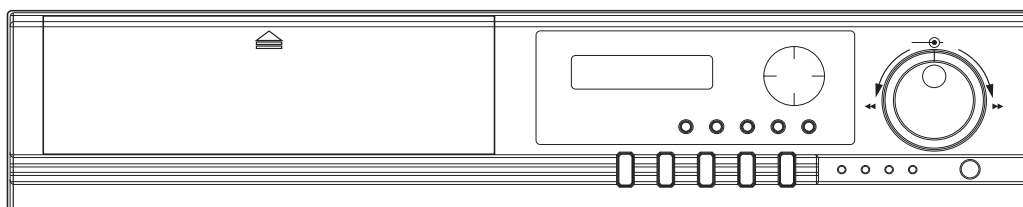


1 CHANNEL DIGITAL RECORDER

ZR-DH111NP

INSTRUCTION MANUAL



GAWZ

ENGLISH



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These Installation and Operating Instructions, (edition 03/2003, Ver 1.3) are for use with One channel digital video recorder (year 2003 model)

Introduction

These installation and operating instructions are designed for the use of anyone concerned with the setting-up or day use of the unit. All persons involved in carrying out installation work (i.e. qualified electricians or service engineers), must ensure that they are familiar with the unit electrical and electronic systems and should follow the applicable safety rules and other relevant legislation all times.

Intended Use

The one channel digital video recorder is the first true VCR replacement designed particularly for the security industry, seamlessly combining high-resolution video multiplexing and digital recording. The Unit can record at speeds up to 60/50 images per second with NTSC/PAL formats and replay event instantly. The Unit incorporates all the benefits of digital video recording, is simple to install, and operates just like a VCR. The highly efficient compression technology, as well as the superior clarity and detail of recorder images, make the one channel digital video recorder stand out from its competitors as the best choice for security surveillance.

Identification Plate

Precise identification of each device is provided by the plate fixed to the rear of the unit, which shows its model designation and serial number. Please copy these details into the box below. This will ensure that you have the required data to hand if a query arises or whenever you need to order spares.

Model:

Serial number:

Safety Measures

Electrical Hazards

- Refer all work related to the installation of this product to qualified service personnel or system installers.
- Do not block the ventilation opening or slots on the cover.
- Do not drop metallic parts through slots. This could permanently damage the appliance. Turn the power off immediately and contact qualified service personnel for service.
- Do not attempt to disassemble the appliance. To prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside. Contact qualified service personnel for maintenance. Handle the appliance with care. Do not strike or shake, as this may damage the appliance.
- Do not expose the appliance to water or moisture, nor try to operate it in wet areas. Do take immediate action if the appliance becomes wet. Turn the power off and refer servicing to qualified service personnel. Moisture may damage the appliance and also cause electric shock.
- Do not use strong or abrasive detergents when cleaning the appliance body. Use a dry cloth to clean the appliance when it is dirty. When the dirt is hard to remove, use a mild detergent and wipe gently.
- Do not overload outlets and extension cords as this may result in a risk of fire or electric shock.
- Do not operate the appliance beyond its specified temperature, humidity or power source ratings. Do not use the appliance in an extreme environment where high temperature or high humidity exists. Use the appliance at temperature within 0°C ~ +50°C and a humidity below 90%. The input power source for this appliance is AC90~265V.

Installation

- The installation tasks described in this manual are to be carried out by adequately trained electrical technicians only, who should ensure that relevant electrical standards and legislation are observed at all times.
- Any modifications to the unit are likewise the exclusive preserve of trained electrical specialists.

Product Description

Maintenance and Repair

- All maintenance and repair operations should be carried out by trained electrical specialists.
- Unauthorised repairs can lead to personal injury, material damage or harm to the unit itself.

Operation

- Operate this unit strictly according to the instructions contained in this manual.
- Unauthorised operation can lead to personal injury, material damage or harm to the unit.

Symbols Used in This Manual

The safety instructions given in this manual are classified into two groups:



DANGER of electric shock

Failure to observe safety warnings identified with this symbol can lead to electric shock injuries. The symbol is used to identify immediate hazards.



Caution

This symbol identifies hazards likely to cause harm to the unit itself or other material damage.

You will also find instructions designed to simplify the operation of the unit:



Note

This symbol is used to identify special operating features of the unit.

CE	The CE Marking is a Directive Conformity mark of the European Union (EU).
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.	

Items Supplied

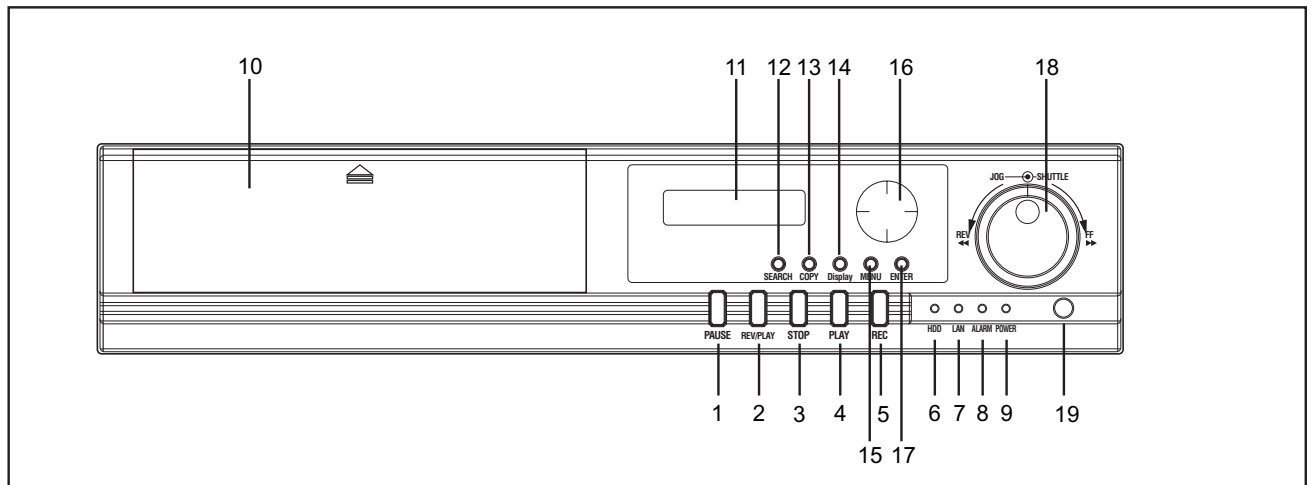
- 1 one channel digital video recorder
- 1 Installation and operating instructions
- 1 CF card reader
- 1 Power Cord

Main Functions in Brief

- Digital Recording provides superior quality images
- Pre-Alarm image recording
- Compatible with most multiplexers
- Time lapse and real time recording
- Refresh rate up to 60 field (50 field for PAL)
- Quick Search by date/time, alarm events, and recording list
- Fast and slow playback of recorded video in various speeds
- On-screen setup menu and system timer
- Multi-level password protection
- RS-232 communication port
- Highly stable Non-PC based proprietary system
- Built-in M-JPEG compression/decompression with configurable quality
- Audio recording capability
- Programmed with various time-lapse speeds, Data can be stored in Compact Flash Card.
- Operation status record log

Operating Controls and Display Functions

Front panel



1 PAUSE

Press this key to pause the playback picture.

2 REV. PLAY

Reverse Play Back. The playback speed is shown on the LCD display, and press ▲▼ to change the speed if necessary.

3 STOP

Press this key to stop Recording and Playing Back.

4 PLAY

Playing Back. The playback speed is shown on the LCD display, and press ▲▼ to change the speed if necessary.

5 REC

Press this key to start recording.

6 HDD

HDD Access, the LED will lit when HDD is accessed.

7 LAN

LAN Access, the LED will lit when LAN is accessed.

8 ALARM

The LED will lit when alarm occurs.

9 POWER

Indicate the power is normal.

10 Hard Disk Tray and Compact Flash Card Slot

Hard Disk holder for HDD and Insert a Compact Flash Card.

11 LCD Display

2002/04/24 SYSLD
12:00:00 002 HR

Switch on the power, "system loading" will be shown 10 seconds, both in LCD display & Main monitor.

2002/04/24 STD
12:00:00 002 HR

In Standby mode, the date/time is current date/time and the right part shows the quality and rate setting for normal recording.

2002/04/24 REC
12:00:00 . 002 HR

In Recording mode, the date/time is current date/time and the right part shows RECORD and current recording rate.

2002/04/24 PLAY
12:00:00 > 002 HR

In Playback mode, the date/time is the playback date/time and the right part shows PLAYBACK and current playback rate.

12 SEARCH

Press this key to enter the Search Playback Menu.

13 COPY

Press this key to start copy still picture or video stream into Compact Flash card.

14 Display

Press this key to switch ON/OFF the display.

15 MENU

Press this key to enter Setup menu.

16 Up/ Down

- (1) In Menu mode, press those keys to change data.
- (2) In Record/Playback mode, press those keys to change the Record/Playback speed.

Left/ Right

In Menu mode, those keys are used to move cursor.

17 ENTER

Press this key to confirm the selection or data changed.

18 Shuttle Dial

In Playback mode, turn shuttle dial can fast forward/rewind the picture.

In Pause mode, turn shuttle dial can slow forwards/rewind the picture.

In Menu mode, turn shuttle dial can change menu page forwards/rewind.

Jog Dial

In Pause mode, turn the jog dial can forwards/rewind the Picture by one field.

In Menu mode turn the jog dial clockwise, for increase the cursor data which show on the system. Turn the jog dial counterclockwise, for decrease the cursor data which show on the system.

19 Remote Control

IR Remote receiver

Installation

Basic Operation

1 Insert a HDD (IDE) for Video Storage

The HDD should be set as MASTER.
(Normally the default setting of HDD is Master)



Note

After hard disk case is inserted into the hard disk tray, be sure to turn the tray key in lock position. Otherwise, hard disk will not be detected and The System Loading procedure can not be completed.

2 Connect cable for video/audio input and video/audio out

The POWER LED lights if power is normal.

3 Switch Power On

The detail connection is described in SYSTEM CONNECTION.

4 Press MENU key to enter SET UP MENU.

Once inside the main menu you will find there are nine set up pages as below:

1. CLOCK/LANGUAGE SETTING MENU

2. TIMER-SET 1 SETTING MENU

3. TIMER-SET 2 SETTING MENU

4. NORMAL RECORD SETTING MENU

5. ALARM RECORD SETTING MENU

6. BUZZER SETTING MENU

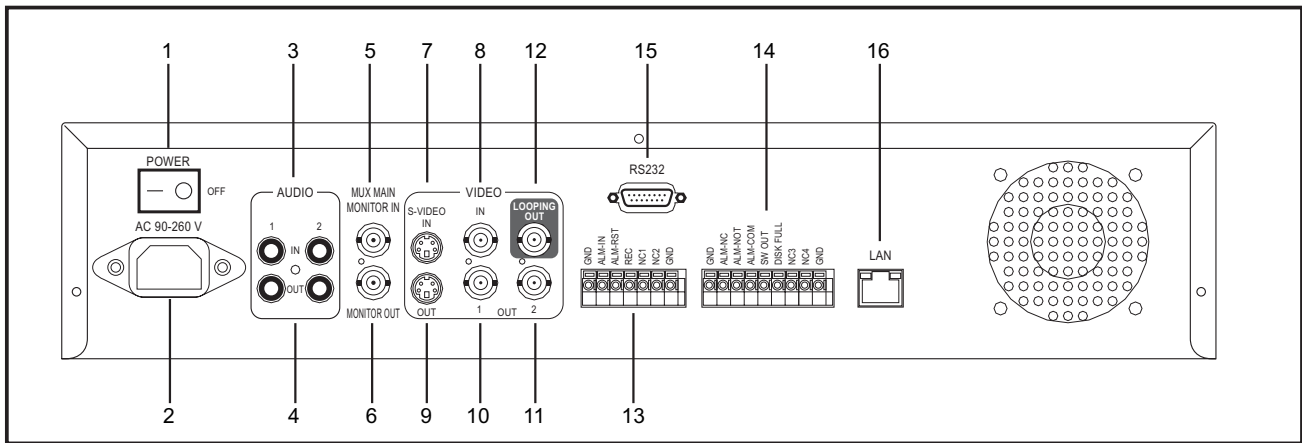
7. ARCHIVE SETTING MENU

8. NETWORK SETTING MENU

9. SYSTEM SETTING MENU

5 Turn the shutter dial clockwise or counterclockwise to change set up page.

Connections on Back of Unit



1 Power Switch

To switch ON/OFF the main power.

2 Main Power plug

The main power input.

3 Audio IN 1, 2

Audio input for recording.

4 Audio OUT 1, 2

These two audio outputs can be set enable or disable in Setup Menu.

5 MUX MAIN MONITOR

Video input BNC connector, connected to multiplexer main monitor output.

6 MONITOR

Video output BNC connector connected to main monitor.

7 S-VIDEO IN

The S-VIDEO input connector.

8 VIDEO IN

The composite video input connector.

9 S-VIDEO OUT

The S-VIDEO output connector.

10 VIDEO OUT(1)

The composite video output connector.

11 VIDEO OUT(2)

Augment composite video output connector.

12 VIDEO LOOPING

The loop-through composite video output, could be connected to other devices.

13 Alarm Input Terminal Block**ALM-IN**

Normal Open or Normal Close type alarm sensor input. The Alarm Input can be selected as Normal Open or Normal Close input in the setup menu.

When an alarm occurs, alarm recording will automatically start.

ALM-RST

Normal Open or Normal Close type alarm reset input to reset the alarm.

REC

External Recording request signal. The machine will start recording when a High Level is applied on this input terminal. If the machine is not in the timer, recording mode, the machine will stop recording when the REC signal drops from High to Low level.

14 Alarm Output Terminal Block**ALM-NC**

Normal Close Alarm output. In normal condition, this terminal is shorted to the terminal of ALM-COM.

In alarm status, it is open between ALM-NC and ALM-COM terminals.

ALM-NO

Normal Open Alarm output. In normal condition, this terminal is open from the terminal of ALM-COM.

In alarm status, those two terminals are shorted.

ALM-COM

Alarm Common Contact.

SW OUT

Step signal to synchronize the machine and multiplexer.

DISKFULL

Disk-Full alarm signal.

15 RS232 connector

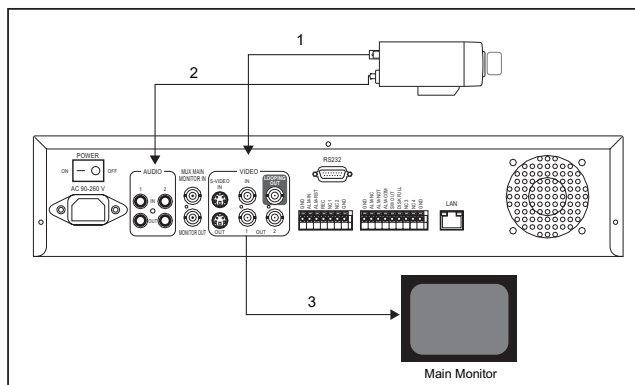
Connect D-Sub 9 pins connector to RS232 ports for remote control.

16 LAN Connector

Connect to the RJ-45 LAN connector.

System Connection

One Camera Connection



1 Video or S-VIDEO out

When the camera output is composite, connect to the video input BNC connector.

The video input setting should be set as COMPOSITE. (SYSTEM SETTING MENU)

When the camera output is S-VIDEO, connect to the S-VIDEO input.

The video input setting should be set as S-VIDEO. (SYSTEM SETTING MENU)

2 Audio Out

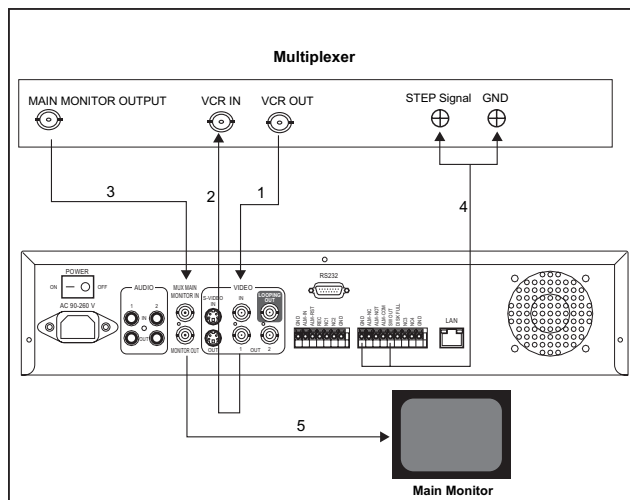
The camera audio output is connected to the audio input terminal at the rear panel.

3 System Main Monitor Output

The main monitor is connected to the VIDEO OUT 1 BNC connector or S-video output S-connector.

4 Please set the Multiplexer item to OFF . (NORMAL RECORD SETTING MENU)

Multiplexer Connection



1 Multiplexer VCR Out

Connected to the VIDEO IN connector at the rear panel.

2 Multiplexer VCR In

Connected to the VIDEO OUT 1 connector at the rear panel.

3 Multiplexer Main Monitor Output

Connected to the MUX. MAIN MONITOR IN connector at the rear panel.

4 Step Signal

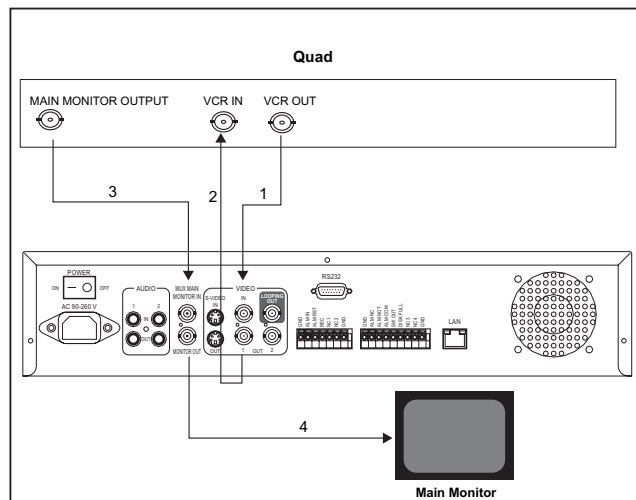
This signal is used to synchronize the multiplexer and the video recorder.

5 System Main Monitor Out

Connect the MAIN MONITOR OUTPUT connector to the main monitor.

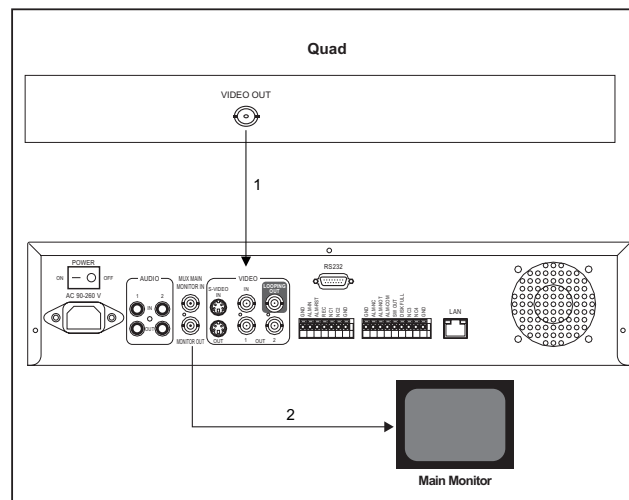
6 Please set the Multiplexer item to ON . (NORMAL RECORD SETTING MENU)

Quad Connection (Quad with VCR in VCR out connector)



- 1 Quad VCR Out:**
Connected to the VIDEO INPUT connector at the rear panel.
- 2 Quad VCR In:**
Connected to the VIDEO OUTPUT connector at the rear panel.
- 3 Quad Main Monitor Out:**
Connected to the MUX. Main connector at the rear panel.
- 4 System Main Monitor Output:**
Connect the MAIN MONITOR OUTPUT connector to the main monitor.
- 5 Please set the Multiplexer item to ON .
(NORMAL RECORD SETTING MENU)**

Quad Connection (Quad without VCR in VCR out connector)



- 1 Quad Video Out (to Video Recorder):**
Connected to the VIDEO INPUT connector at the rear panel.
- 2 System Main Monitor Output**
Connect the MAIN MONITOR connector to the main monitor.
- 3 Please set the Multiplexer item to OFF .
(NORMAL RECORD SETTING MENU)**

Programming

CLOCK/LANGUAGE SETTING MENU

1 DATE Current date

Year: 2000 ~ 2099
 Month: 01~ 12
 Date: 01~ 31

2 TIME Current time

Hour: 00 ~ 23
 Minute : 00 ~ 59
 Second: 00 ~ 59

3 DAYLIGHT SAVING

ON

Automatically 1 hour earlier during summer day-light saving period.

OFF

No daylight saving.

4 MENU LANGUAGE

ENGLISH

5 OSD COLOR

5 different colors can be selected:
 WHITE, RED, GREEN, BLUE, YELLOW

6 SPEED FORMAT

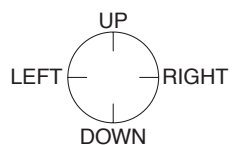
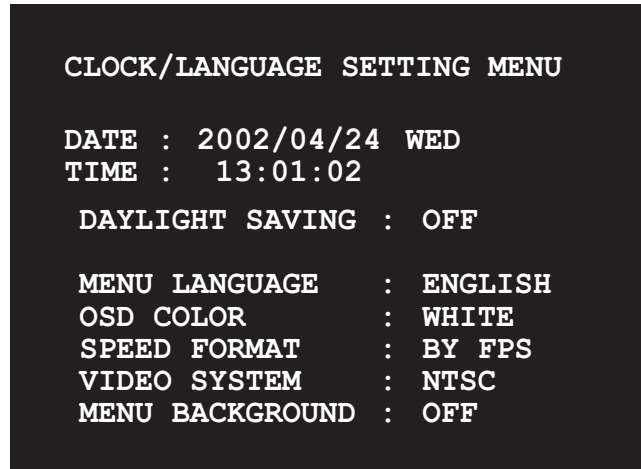
Select recording speed by FPS (Field per second)
 or HOUR

7 VIDEO SYSTEM

Select the video system "NTSC" or "PAL"

8 MENU BACKGROUND

Black out video ON/OFF when in Menu Mode



: Press LEFT or RIGHT to move the cursor to the left or right.

: Press UP or DOWN or Jog Dial to change the value.

TIMER SET SETTING MENU

The monitored image can be recorded automatically by setting the start and end times in TIMER SET SETTING MENU.

1 WEEK

This select the day for the timer.
Records on schedule each day's.

2 START

This is used to enter the start time for timer recording.

3 STOP

This is used to enter the end time for timer recording.

4 Speed

When SPEEED FORMAT set by HOUR, the recording speed can setting from 2/3 (NTSC/PAL) HR to 960HR.

When SPEED FORMAT set by FPS, the recording speed is from 0.1~60/0.1~50(NTSC/PAL)FPS.

5 Quality

There are six recording picture quality levels

LOWER	:	15 KB
LOW	:	20 KB
BASIC	:	25 KB
STANDARD	:	30 KB
HIGH	:	35 KB
SUPERIOR	:	40 KB

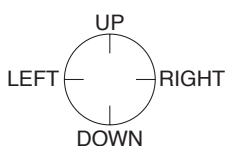
6 SET

Set "ON" when using timer recording.

Set "OFF" when not using timer recording.

7 DLY

Record on same schedule every day.



: Press LEFT or RIGHT to move the cursor to the left or right.

: Press UP or DOWN or Jog Dial to change the value.

TIMER-SET 1 SETTING MENU

WEEK	START	STOP	SPEED	QUALITY	SET
SUN	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
MON	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
TUE	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
WED	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF

TIMER-SET 1 SETTING MENU

WEEK	START	STOP	SPEED	QUALITY	SET
TUE	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
FRI	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
SAT	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
DLY	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF
	00:00	00:00	002 HR	STANDARD	OFF

NORMAL RECORD SETTING MENU

1 SPEED

Recording Speed
User can select the recording speed from 2/3 (NTSC/PAL) HR to 960 HR.

2 QUALITY

Picture Quality
There are six quality levels for recording

LOWER : 15 KB
LOW : 20 KB
BASIC : 25 KB
STANDARD : 30 KB
HIGH : 35 KB
SUPERIOR : 40 KB

3 MULTIPLEXER

ON/OFF

User can select Multiplexer connection or One Camera connection

ON

The video input from MUX MAIN MONITOR connector at the rear panel will be looped through to the main monitor out when the recorder is not in MENU mode.

OFF

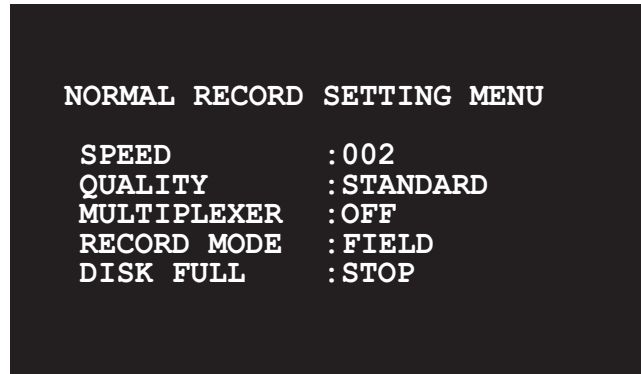
The main monitor output is same as video out connector all the time.

4 RECORD MODE

There are two record modes for Time lapse recording. FIELD or FRAME

5 Disk Full

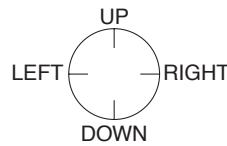
STOP



When disk is full, the machine will STOP recording.

REWRITE

When disk is full, the current video will OVERWRITE the existing video from the beginning of HDD.



: Press LEFT or RIGHT to move the cursor to the left or right.

: Press UP or DOWN or Jog Dial to change the value.

ALARM RECORD SETTING MENU

1 ALARM OPERATION

ON

Record when alarm occurs.

OFF

Do not record when alarm occurs.

2 RECORDING SPEED

The recording speed in alarm duration.
The max. recording speed is 2/3 (NTSC/PAL) HR.
The min. recording speed is 960 HR.

3 RECORDING QUALITY

Select the Recording picture quality when alarm occurs.

LOWER	:	15 KB
LOW	:	20 KB
BASIC	:	25 KB
STANDARD	:	30 KB
HIGH	:	35 KB
SUPERIOR	:	40 KB

4 ALARM-IN TYPE

N.O. Normal Open,
N.C. Normal Close

5 ALARM-RESET TYPE

N.O. Normal Open,
N.C. Normal Close

6 ALARM DURATION TIME

Alarm holding time, alarm recording starts from the beginning of alarm and stops at the end of the duration.
The max. duration is NON - STOP, the min. duration is 10 Seconds.

7 PRE-ALARM OPERATION

ON

Record the picture in pre-alarm recording speed in pre-alarm period.

OFF

No pre-alarm recording before alarm occurs.

ALARM RECORDING SETTING MENU

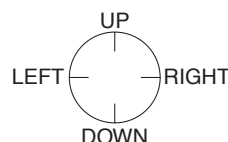
ALARM OPERATION	:	ON
RECORDING SPEED	:	002 HR
RECORDING QUALITY	:	STANDARD
ALARM - IN TYPE	:	N.O.
ALARM - RESET TYPE	:	N.O.
ALARM DURATION TIME	:	10 SECS
PRE-ALARM OPERATION	:	ON
RECORDING SPEED	:	002 HR

8 RECORDING SPEED

The recording speed in pre-alarm period.
The max. recording speed is 2/3 (NTSC/PAL) HR.
The min. recording speed is 960 HR.

9 PRE-ALARM TIME

The duration of pre-alarm recording period. In 2/3 hour Real Time recording mode, the duration of pre-alarm is about 5 seconds.



: Press LEFT or RIGHT to move the cursor to the left or right.

: Press UP or DOWN or Jog Dial to change the value.

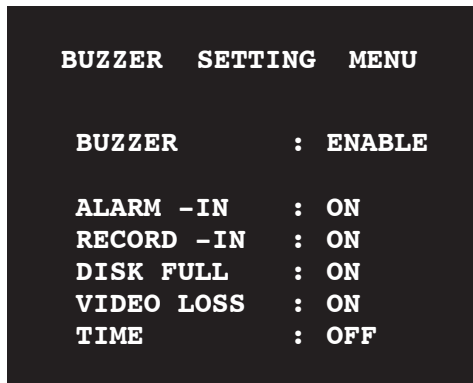


Notice

If the alarm occurs when it is in standby mode or in normal recording mode, the recording quality will be the same as the normal recording quality.

If the alarm occurs when it is in timer recording mode, the recording quality will be the same as the value set in timer recording quality.

BUZZER SETTING MENU



1 BUZZER

ENABLE: Select buzzer to be on.
 DISABLE: Select buzzer to be off.

User can press Enter button to enable/disable in Record/Playback mode.

2 ALARM IN

ON, the buzzer will sound when the alarm occurs.

3 RECORD IN

ON, the buzzer will sound when Record-IN signal is applied on the Record-IN terminal.

4 DISK FULL

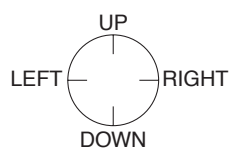
ON, the buzzer will sound when disk is near full 99.7%

5 VIDEO LOSS

ON, the buzzer will sound when the video loses.

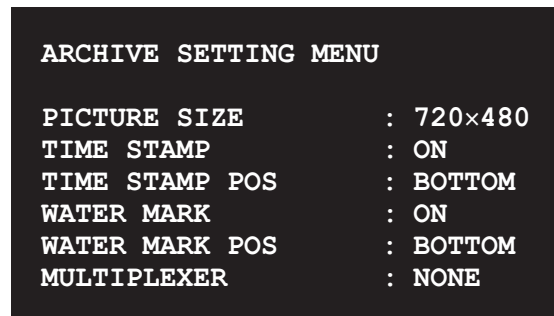
6 TIMER

ON, the buzzer will sound when timer record occurs.



: Press LEFT or RIGHT to move the cursor to the left or right.
 : Press UP or DOWN or Jog Dial to change the value.

ARCHIVE SETTING MENU



1 PICTURE SIZE

Select picture size for copying image to CF card

Big size:720x480

Small size:352x240

2 TIME STAMP

ON Will show time stamp on the picture when copying image to CF card.

OFF Will not show time stamp on the picture when copying image to CF card.

3 TIME STAMP POS

BOTTOM Time stamp will show on the bottom

TOP Time stamp will show on the top

4 WATER MARK

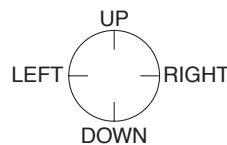
ON Will show water mark on the picture when copy image to CF card.

OFF Will not show water mark on the picture when copy image to CF card.

5 WATER MARK POS

BOTTOM Water mark will show on the bottom

TOP Water mark will show on the top



: Press LEFT or RIGHT to move the cursor to the left or right.
 : Press UP or DOWN or Jog Dial to change the value.

6 MULTIPLEXER

In order to view each channel of multiplexer from LAN, please select DPLEX16-ECO among list.

NETWORK SETTING MENU

- (1) **IP ADDRESS** : Assign an IP address for this unit.
- (2) **NET MASK ADDRESS**: Assign a subnet mask of the network for this unit.
- (3) **GATEWAY ADDRESS**: Assign a default gateway for this unit.
- (4) **USER-NAME PASSWORD LEVEL**

NETWORK SETTING MENU		
IP ADDRESS	:	192.168.010.005
NET MASK ADDRESS	:	255.255.255.000
GATEWAY ADDRESS	:	192.168.010.001
USER-NAME	PASSWORD	LEVEL
ADMIN	ADMIN	SUPER
GENERAL	GENERAL	GENERAL
GUEST	GUEST	GUEST

The Login name and password are used to establish a network connection to the unit.

The Password Setup allows the administrator to set the new Login name and password with access level "ADMIN", "General" or "Guest".

The system allows up to 4 user connected at same time with different access level.

For "ADMIN", can view live/playback video and control one channel digital video recorder operation.

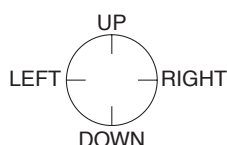
For "General", can view live and playback video.

For "Guest", can only view live.



Notice:

After modified the IP ADDRESS, NET MASK ADDRESS or GATEWAY ADDRESS, please reboot system to effect these setting.



: Press LEFT or RIGHT to move the cursor to the left or right.

: Press UP or DOWN or Jog Dial to change the value.

SYSTEM SETTING MENU

SYSTEM SETTING MENU (V1.21 2003/01/02)

PASSWORD ENABLE	:	NO
PASSWORD	:	888888
VIDEO INPUT	:	COMPOSITE
PLAY WITH AUDIO 1	:	ON
PLAY WITH AUDIO 2	:	ON
DISK RENEW	:	NO
FIELD CODE LINE	:	20
SYSTEM UPDATE	:	NO
LOAD DEFAULT	:	NO
CF RENEW	:	NO
PLAY MODE	:	FIELD

1 PASSWORD ENABLE

YES/NO PASSWORD may be required to enter the system setting menu.

YES PASSWORD is required to enter the system setting menu.

NO PASSWORD is not required to enter the system setting menu.

2 PASSWORD

When selecting YES for PASSWORD ENABLE, to enter the system setting menu a password is required.

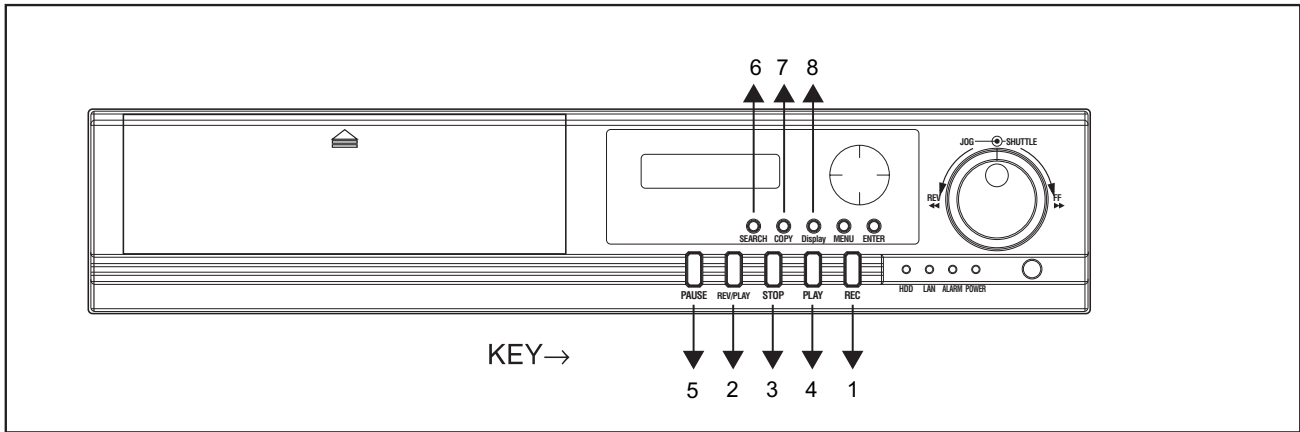
The code is six digits long and can be a digit from 1 to 8.

Once you have activated the password, whenever you press the menu button in live mode or stop button in record mode the system will ask you to enter the password.

PASSWORD : *****

Therefore, be sure to make a note of the password.

When the user enters a password, the 8 keys on the front panel will stand for 1 to 8 .



Example PASSWORD 888888

User can press DISPLAY key six times to enter the system setting menu.

3 VIDEO INPUT

COMPOSITE Select the video input from BNC connector.

S-VIDEO Select the S-VIDEO from S-VIDEO connector.

4 PLAY WITH AUDIO 1

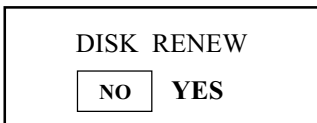
PLAY WITH AUDIO 2

ON/OFF Play back with or without audio.

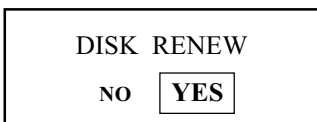
5 DISK RENEW

YES/NO Renew or not to renew HDD.

YES The confirmation dialog will appear on the screen.



Press ENTER key to NOT renew HDD and Exit.



If not, press RIGHT key to move the cursor to YES, and then press ENTER key to Renew HDD.

6 FIELD CODE LINE

When the system is connected to the Multiplexer, it is used to adjust the field code line of Multiplexer.

The values: 00~20

The default value is 13, it is suitable for most of the multiplexers.

If the field code line appears on the top of each playback channel, decrease the value.

If multiplexers can not playback properly, increase the value.

7 SYSTEM UPDATE :

YES/NO Update the system or not.

YES Copy the update files into Compact Flash card. Insert the Compact Flash card into the slot, and then press ENTER key to update system.



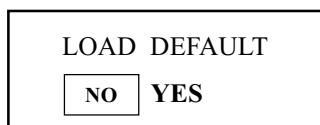
Notice

After the system is updated successfully, reboot the system.

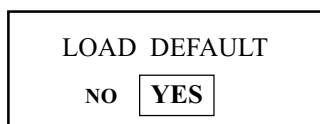
8 LOAD DEFAULT

YES/NO Load the System DEFAULT or not.

YES The confirmation dialog will appear on the screen.



Press ENTER key to NOT load default and Exit.



If not, press RIGHT key to move the cursor to YES, and then press ENTER key to load default.

9 CF RENEW

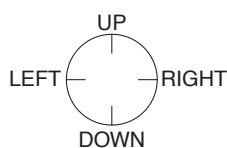
Two of modes for choice, YES or NO.

YES will format CF card

NO will not format CF card

10 PLAY MODE

The play mode can be FIELD or FRAME.



: Press LEFT or RIGHT to move the cursor to the left or right.

: Press UP or DOWN or Jog Dial to change the value.

Recording

INSTANT RECORDING

Press Record key to start the recording immediately.

Press Record key, the pictures being monitored will be recorded in the HDD.

- The recording rate and recording quality are set in the Record Set menu
- “RECORD” appears in the operating display
- “RECORD” appears in the LCD display. (Press DISPLAY key to show the message on the screen)

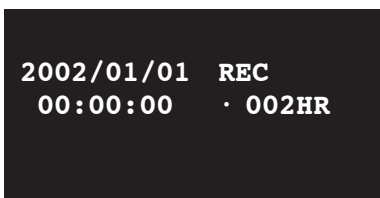
Video out



Press Stop key to stop recording.

- Stop key can be activated only in recording mode.
- When the HDD is full, the machine will Stop recording automatically or Overwrite from the beginning of the HDD depending on the setting in HDD setting.

LCD Display



ALARM RECORDING

The monitor image will be recorded automatically when alarm occurs and stop recording at the end of the alarm duration period.

Instant recording and timer recording will stop when an alarm occurs.

Press MENU key and turn the jog dial to select the ALARM RECORDING SETTING MENU.

RECORDING OPERATION

- ON** Enable alarm recording,
- OFF** Disable alarm recording.

RECORDING SPEED

Set the recording speed when alarm occurs.

RECORDING QUALITY

In alarm duration, the recording quality can be set which is different from instant or timer recording.

ALARM – IN TYPE

Select the type of alarm-in input to be Normal Close (N.C.) or Mormal (N.O.)

ALARM-RESET TYPE

Select the type of alarm-reset input to be Normal Close (N.C.) or Normal Open (N.O.)

ALARM DURATION TIME:

Alarm duration from 10 seconds to NON – STOP

PRE-ALARM OPERATION:

- ON** Enable pre-alarm recording,
- OFF** Disable pre-alarm recording.

RECORDING SPEED

Set the recoding speed in pre-alarm duration.



Notice

The recording quality in pre-alarm duration is the same as recording quality before alarm occurs.

If the recorder is not recording before alarm occurs, the recording quality in pre-alarm duration will be the same as instant recording quality.

Playback

NORMAL PLAYBACK

1 Playback

Press PLAY key to start playing back the stored image/audio from the last SEGMENT.

Press REV.PLAY key to start reverse playing back the stored image/audio from the last segment.

2 STOP

Press STOP key to stop playing back.

3 Fast Forward/Reverse Playback

Press PLAY key to start playing back.

Turn the shuttle dial clockwise and fast forward playback starts.

The speed will be shown on the LCD at the right upper corner of the screen.

>> 2, 4, 6, 8, 16, 32, 600X

Turn the shuttle dial counterclockwise and fast reverse playback starts.

The speed will be shown on the LCD.

<< 2, 4, 6, 8, 16, 32, 600X

4 Slow Forward/Reverse Playback

Press PAUSE key to freeze the playing back picture.

Turn the shuttle dial clockwise and slow forward playback starts.

The speed will show on the LCD at the corner of the screen.

>> 1/2, 1/4, 1/6, 1/8, 1/10, 1/16, 1/32

Turn the shuttle dial counterclockwise and slow reverse playback starts.

The speed will show on the LCD at the corner of the screen.

<< 1/2, 1/4, 1/6, 1/8, 1/10, 1/16, 1/32

5 Frame/Field advance Forward/Reverse

Press PAUSE key to freeze the picture.

Turn the jog dial clockwise to advance the still image Frame/Field by Frame/Field.

Turn the jog dial counterclockwise to rewind the still image Frame/Field by Frame/Field.

The Frame/Field feed speed will increase if the jog dial is turned quickly.

SEARCH PLAYBACK

Segment Search Playback

Press SEARCH key to enter the Search menu.
Press UP/DOWN key to move the cursor to BY SEGMENT LIST and press ENTER key to select file search.

Press UP/DOWN key to move the cursor to the segment you want to playback.
Press Enter to select the segment.
When the selection list is full, turn the jog dial clockwise to select next page list for additional search list.
After the starting time is confirmed, press enter to start playing back.

Alarm Search Playback

Press SEARCH key to enter the Search menu.
Press UP/DOWN key to move the cursor to BY ALARM LIST and press ENTER key to select alarm search.

Press UP/DOWN key to move the cursor to select the alarm image to be played back.
When the selection list is full, turn the jog dial clockwise to select next page for additional search list. The alarm image will be played back from the pre-alarm period and stop at the end of alarm duration.

Date/Time Search Playback

Press SEARCH key to enter the Search menu.
Press UP/DOWN key to move the cursor to BY DATE/TIME and press ENTER key to select file search.

Press LEFT/RIGHT key to move the cursor.
Press UP/DOWN key to increase/decrease the data. Press enter and the playback starts from the date/time set in the menu.



Notice:

If there is no image stored in the date/time specified then the machine will start playing back from the nearest set time automatically.

SEARCH MENU

BY SEGMENT LIST
BY ALARM LIST
BY DATA TIME

SEGMENT SEARCH

1	PA	2002/04/24	19/03/29
2	T	2002/04/25	12/30/30
3	T	2002/05/20	12/00/00

PA : PRE-ALARM RECORD
T : TIMER RECORD

SEARCH MENU

BY SEGMENT LIST
BY ALARM LIST
BY DATA TIME

ALARM SEARCH

1	PA	2002/04/24	19/03/29
2	T	2002/04/25	12/30/30
3	T	2002/05/20	12/00/00

PA : PRE-ALARM RECORD
T : TIMER RECORD

SEARCH MENU

BY SEGMENT LIST
BY ALARM LIST
BY DATE/TIME

DATE/TIME SEARCH

YEAR/MM/DD	HH:MM:SS
2002 04 24	19 03 35

COPY

Insert a Compact Flash card into the Compact Flash slot on the front panel.

When inserting the Compact Flash card, make sure that the direction of insertion is correct.

Still Image Copy

Press the PLAY key to start playing back.

Press the PAUSE key to freeze the picture.

Turn the jog dial clockwise or counterclockwise to move to your desired image of choice.

While the image to be displayed as your desired image of choice, press the COPY key. The “Copying ...” will be shown on the screen during the process. The “Success” will be shown on the screen after file copied



Notice:

Copied images are stored as a single picture.
Copied files are saved as .JPG file.

Copy to Movie File

Press the PLAY key to start playing back.

Press COPY key and then the copy menu appears.

COPY TO MOVIE FILE

```

Press COPY      To Step Copy
Press PLAY      To Continue Copy
Press PAUSE     To Stop Continue
Press SEARCH    To End Copy
Press STOP      To End Play
  
```

Press PLAY key to continue Copy Movie File.

Press PAUSE key to stop continue copy.

Press SEARCH key to end copy.

Press STOP key to end play.



Notice:

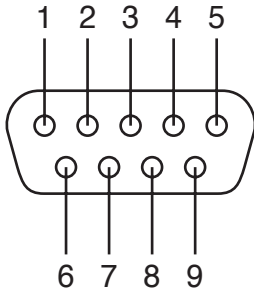
Copied images are stored as a movie picture.
Copied files are saved as .MOV file.
Use QuickTime to play the retrieved .MOV files.
You may download QuickTime at www.apple.com.
The playback version for QuickTime is free.

Interface Specifications

RS232

This One Channel Digital Video Recorder may be controlled by a computer or a terminal via the standard D-SUB 9-pin RS-232 connector.

D-SUB 9-pin connector specifications



The pin assignment of the 9-pin D-SUB connector

One channel digital recorder			HOST	
PIN #	NAME		PIN #	NAME
1	NOT CONNECTED		1	NOT CONNECTED
2	TXD	→	2	RXD
3	RXD	←	3	TXD
4	NOT CONNECTED		4	DTR
5	GROUND	—	5	GROUND
6	NOT CONNECTED		6	DSR
7	NOT CONNECTED		7	RTS
8	NOT CONNECTED		8	CTS
9	+5V		9	NOT CONNECTED

Transmission setting

The transmission setting is 9600 baud rate, 8 data bits, 1 start bit, 1 stop bit and no parity.

Appendix

Remote Control Protocol

A computer or a terminal can be used to control the unit by sending three character ASCII commands through RS232 connector, these ASCII commands are started with 'K' or 'k'. There are 30 ASCII commands mapped to the 30 keypads in the front panel.

The 30 ASCII commands are shown on the following table.

Remote Control Command Table		
ASCII CODE	FUNCTION	Keypad in front panel
K00	Start Recording	REC
K01	Reverse Playing back	REV. PLAY
K02	Stop Recording and Playing back	STOP
K03	Playing back	PLAY
K04	Pause the playback picture	PAUSE
K05	Search playback	SEARCH
K06	Copy picture into CF card	COPY
K07	On screen display	DISPLAY
K08	Increase data	UP Δ
K09	Move cursor	LEFT \triangleleft
K10	Move cursor	RIGHT \triangleright
K11	Decrease data	DOWN ∇
K12	Confirm the selection	ENTER
K13	Enter Setting Menu	MENU
K14 – K20	Fast reverse playback speed	<< 2 - 600 X, 1/2 – 1/32
K21 – K27	Fast playback speed	>> 2 - 600 X, 1/2 – 1/32
K28	Rewind the still image	JOG -REW
K29	Advance the still image	JOG -FF

Remote Controller

(Optional)

The remote controller is an accessory to enhance the handy operations of one channel digital video recorder (Figure 1). You can do all the settings and operations by the remote controller. The effective distance is up to 10 meters without any obstacle. The keypad functions are as same as the front panel of the one channel digital video recorder.

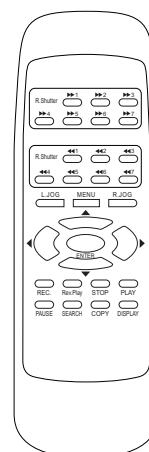


Figure 1

Time Lapse/FPS Mode Recording Time

When Recording with an 80-GB HDD
(Estimated with typical image-low noise level)

Lower : 15 kB
Low : 20 kB
Basic : 25 kB
Standard : 30 kB
High : 35 kB
Superior : 40 kB

NTSC

(System storage:80GB)

Recording Speed (Hour)	Recording Rate (Field/Sec)	PICTURE QUALITY					
		LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
2	60	24H	18H	14H	12H	10H	9H
6	15	98H	74H	59H	49H	42H	37H
12	8.571	172H	129H	103H	86H	74H	64H
24	4.615	321H	240H	192H	160H	137H	120H
48	2.4	617H	463H	370H	308H	264H	231H
72	1.622	913H	685H	548H	456H	391H	342H
96	1.224	1210H	907H	726H	605H	518H	453H
168	0.706	2098H	1573H	1259H	1049H	899H	786H
480	0.249	5949H	4462H	3569H	2974H	2549H	2231H
720	0.166	8924H	6693H	5354H	4462H	3824H	3346H
960	0.125	11851H	8888H	7111H	5925H	5079H	4444H

NTSC

(System storage:80GB)

Recording Speed (FPS)	PICTURE QUALITY					
	LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
60	24H	18H	14H	12H	10H	9H
30	49H	37H	29H	24H	21H	18H
20	74H	55H	44H	37H	31H	27H
10	148H	111H	88H	74H	63H	55H
5	296H	222H	177H	148H	127H	111H
2	740H	555H	444H	370H	317H	277H
1.5	987H	740H	592H	493H	423H	370H
1	1481H	1111H	888H	740H	634H	555H
0.5	2963H	2222H	1777H	1481H	1269H	1111H
0.2	7407H	5555H	4444H	3703H	3174H	2777H
0.1	14814H	11111H	8888H	7407H	6349H	5555H

PAL

(System storage:80GB)

Recording Speed (Hour)	Recording Rate (Field/Sec)	PICTURE QUALITY					
		LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
3	50	29H	22H	17H	14H	12H	11H
6	16.667	88H	66H	53H	44H	38H	33H
12	10	148H	111H	88H	74H	63H	55H
24	5.556	266H	200H	160H	133H	114H	100H
48	2.941	503H	377H	302H	251H	215H	188H
72	2	740H	555H	444H	370H	317H	277H
96	1.515	977H	733H	586H	488H	419H	366H
168	0.877	1689H	1266H	1013H	844H	724H	633H
480	0.311	4763H	3572H	2858H	2381H	2041H	1786H
720	0.207	7156H	5367H	4294H	3578H	3067H	2683H
960	0.156	9646H	7122H	5698H	4748H	4070H	3561H

PAL

(System storage:80GB)

Recording Speed (FPS)	PICTURE QUALITY					
	LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
50	29H	22H	17H	14H	12H	11H
25	59H	44H	35H	29H	25H	22H
16	92H	69H	55H	46H	39H	34H
10	148H	111H	88H	74H	63H	55H
5	296H	222H	177H	148H	127H	111H
2	740H	555H	444H	370H	317H	277H
1.5	987H	740H	592H	493H	423H	370H
1	1481H	1111H	888H	740H	634H	555H
0.5	2963H	2222H	1777H	1481H	1269H	1111H
0.2	7407H	5555H	4444H	3703H	3174H	2777H
0.1	14814H	11111H	8888H	7407H	6349H	5555H

Reference: 24H=1 day, 168H=1 week, 720H=1 month, 8760H=1 year

When Recording with a160-GB HDD

(Estimated with typical image-low noise level)

Lower : 15 kB
 Low : 20 kB
 Basic : 25 kB
 Standard : 30 kB
 High : 35 kB
 Superior : 40 kB

NTSC

(System storage:160GB)

Recording Speed (Hour)	Recording Rate (Field/Sec)	PICTURE QUALITY					
		LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
2	60	49H	37H	29H	24H	21H	18H
6	15	197H	148H	118H	98H	84H	74H
12	8.571	345H	259H	207H	172H	148H	129H
24	4.615	642H	481H	385H	321H	275H	240H
48	2.4	1234H	925H	740H	617H	529H	463H
72	1.622	1826H	1370H	1096H	913H	782H	685H
96	1.224	2420H	1815H	1452H	1210H	1037H	907H
168	0.706	4196H	3147H	2518H	2098H	1798H	1573H
480	0.249	11899H	8924H	7139H	5949H	5099H	4462H
720	0.166	17849H	13386H	10709H	8924H	7649H	6693H
960	0.125	23703H	17777H	14222H	11851H	10158H	8888H

NTSC

(System storage:160GB)

Recording Speed (FPS)	PICTURE QUALITY					
	LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
60	49H	37H	29H	24H	21H	18H
30	98H	74H	59H	49H	42H	37H
20	148H	111H	88H	74H	63H	55H
10	296H	222H	177H	148H	127H	111H
5	592H	444H	355H	296H	254H	222H
2	1481H	1111H	888H	740H	634H	555H
1.5	1975H	1481H	1185H	987H	846H	740H
1	2963H	2222H	1777H	1481H	1269H	1111H
0.5	5925H	4444H	3555H	2963H	2539H	2222H
0.2	14814H	11111H	8888H	7407H	6349H	5555H
0.1	29629H	22222H	17777H	14814H	12698H	11111H

PAL

(System storage:160GB)

Recording Speed (Hour)	Recording Rate (Field/Sec)	PICTURE QUALITY					
		LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
3	50	59H	44H	35H	29H	25H	22H
6	16.667	177H	133H	106H	88H	76H	66H
12	10	296H	222H	177H	148H	127H	111H
24	5.556	533H	400H	320H	266H	228H	200H
48	2.941	1007H	755H	604H	503H	431H	377H
72	2	1481H	1111H	888H	740H	634H	555H
96	1.515	1955H	1466H	1173H	977H	838H	733H
168	0.877	3378H	2533H	2027H	1689H	1447H	1266H
480	0.311	9527H	7145H	5716H	4763H	4083H	3572H
720	0.207	14313H	10735H	8588H	7156H	6134H	5367H
960	0.156	18993H	14245H	11396H	9646H	8140H	7122H

PAL

(System storage:160GB)

Recording Speed (FPS)	PICTURE QUALITY					
	LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
50	59H	44H	35H	29H	25H	22H
25	118H	88H	71H	59H	50H	44H
16	185H	138H	111H	92H	79H	69H
10	296H	222H	177H	148H	127H	111H
5	592H	444H	355H	296H	254H	222H
2	1481H	1111H	888H	740H	634H	555H
1.5	1975H	1481H	1185H	987H	846H	740H
1	2963H	2222H	1777H	1481H	1269H	1111H
0.5	5925H	4444H	3555H	2963H	2539H	2222H
0.2	14814H	11111H	8888H	7407H	6349H	5555H
0.1	29629H	22222H	17777H	14814H	12698H	11111H

Reference: 24H=1 day, 168H=1 week, 720H=1 month, 8760H=1 year

SECURITY LOCK SETTING

Press REC key for 5 times during record mode, then all the keys on the front panel will be locked.
(Password must be Enable on System Setting Menu)

Press STOP key, the system will ask for the password. If you enter a correct password, the locked keys will be released.

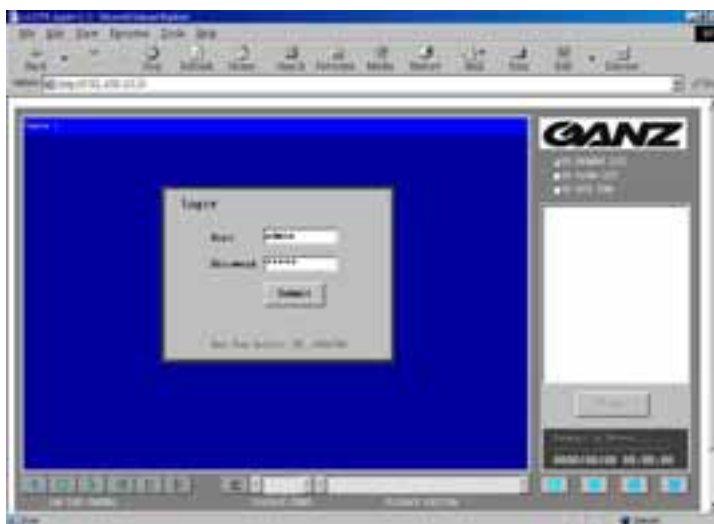
View From Internet/Intranet

Basic Operations & Login Display:

Go to the Internet Explorer, key in the network IP address, for example,

<http://192.168.10.5>

(must be the same IP address as the one assigned to the unit from the Network Setting Menu.)



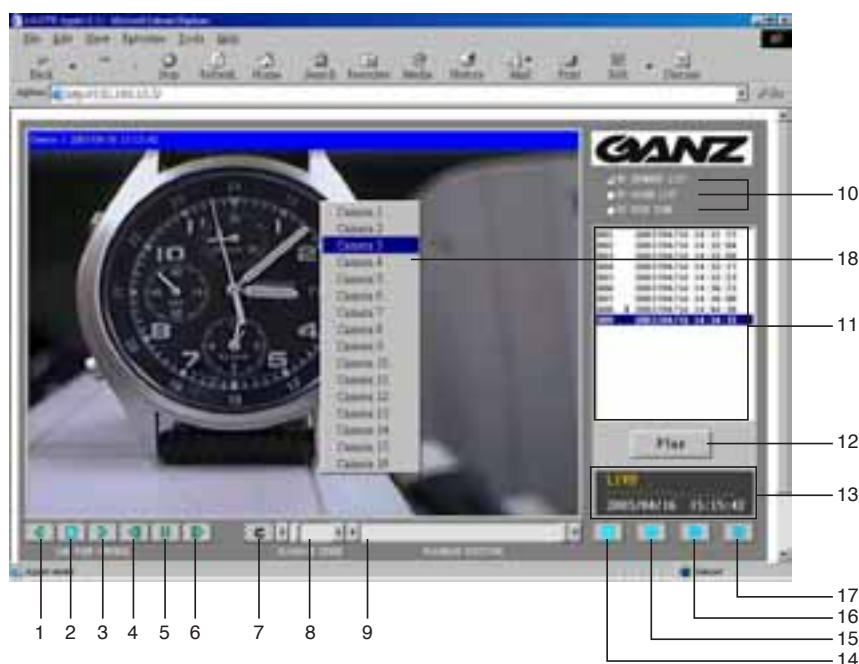
The “one channel digital video recorder Login” page will show on the screen.

User must enter the correct user-name and password defined in the Network Setting Menu.

For example:

Enter ADMIN for use name and ADMIN for password and then Click on “submit” to enter to system.

Main Screen



Above diagram is the main screen display.

The icons on the lower corner of the screen are mainly for control and configuration, those on the right corner are for status indication.

If any icon is grayed, it means that the specific function is not accessible in the current mode.

The followings are a brief description for each of the icons.

- 1 **REV. PLAY** : Reverse Video display
- 2 **STOP** : Press this key to stop Video display.
- 3 **PLAY** : Playing back the Video display.
- 4 **Step Backward** : the Video display.
- 5 **Step Forward** : the Video display.
- 6 **PAUSE** : Press this key to pause the Video display.
- 7 **Control Mode**: This key will switch user to direct remote control mode.



Note: Control Mode which only allow use with access level "Super" use.

8 Control for Playback Video Speed

9 Control for Playback Position

10 The system allows 3 ways playback video, by SEGMENT, ALARM LIST and DATE TIME



(Playback by segment list)



(Playback by alarm list)



(Playback by date time)

- 11 All available segments are shown in the list. Click to select and highlight.
 - 12 Click to playback selected video segment.
 - 13 Current connection and playback status is shown along with date and time.
 - 14 Full screen view
 - 15 Quad screen view
 - 16 Nine split screen view
 - 17 Sixteen split screen view
 - 18 A pop-up menu to select camera to view will be shown by pressing right mouse button.
- *15, 16, 17, 18 functions are available with limited MUX.

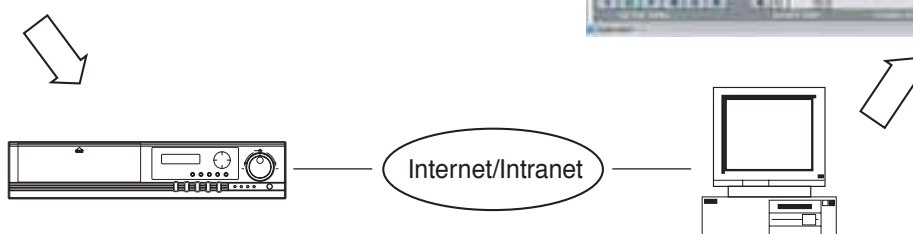
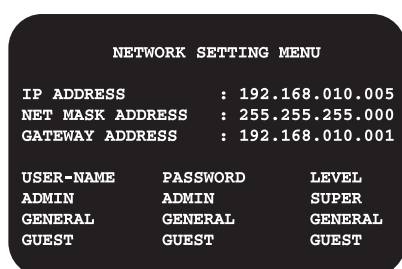
LAN Functional Specification

Specifications

Especificaciones	
Interfaz de Red	10Mbits/s Ethernet (10BaseT)
Chip controlador de LAN	RealTek 8019
Conector de LAN	RJ-45
Protocolo	HTTP, TCP/IP, ICMP, ARP
Acceso Remoto	Browser estándar como Internet Explorer/Netscape con soporte de JAVA.
Compresión de Imágenes	JPEG

Features

- Live/Playback Lan view.
- Playback speed adjustable.
- Support direct remote control mode.
- Segment list search.
- Alarm list search
- Provide date time search
- Three user level support.
- Three user accounts for login.
- 1/4/9/16 split windows for multiplexer display. (DM, ROBOT, ATV)
- No need to install additional application software. Just use standard browser with JAVA support.



Specifications

Video Input	1 video input with loop through (BNC) 1 Vpp/75ohm; 1S-Video input
Video Output	1 Video output(BNC), 1Vpp/75ohm 1 S-Video output
Video Compression	M-JPEG
Video Resolution	720 x 484 (NTSC); 720 x 576 (PAL)
Compact Flash Memory	Yes, Built-in Compact Flash card slot
Alarm Input	Yes
Alarm Output	Yes
Audio	2 mono(MIC) input; 2 mono (Speaker) output
Video Loss Detection	Yes
RS-232	9-pin female connector
Event Log	Yes
Hard Disk Storage	3.5" IDE type
Recording Mode	Continuous, Time-lapse recording, Timer or Event Recording
Recording Rate	60/50 field per second for NTSC/PAL
Playback Rate	60/50 field per second for NTSC/PAL
Playback Search	Date/Time or Event
Setup	On screen display setup
User Interface	Menu Driven
User Input Device	Front Panel Keypad
Timer	Built-in real time clock
Water Mark	Yes
Weight	5.2kg
Power Source	AC100-240V
Dimension	430mm(L) × 88mm(W) × 300mm(H)
Operating Temperature	0°C~+50°C



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