# 4 CHANNEL SURVEILLANCE DVR
## WITH MOTION DETECTION AND AUDIO RECORDING

# Instruction Manual

English Version 3.0

**MODELS:**
# L104 & L104V Series

## ⊚ LOREX™

Includes L104000, L104161, L104251, L104V000, L104V161 & L104V251

Thank you for purchasing the 4 Channel Surveillance DVR (with Motion Detection and Audio Recording). Lorex is committed to providing our customers with a high quality, reliable security product.

The L104 series offers excellent performance at a value price. This small form (9x12x2") Surveillance DVR provides real time recording in quad mode, single channel audio recording and motion detection – scheduled – continuous mode recording. The L104 also has a remote controller and password protection.  In addition the L104 'V' model provides optional VGA output for display on PC monitors.

To learn more about the 4 Channel Surveillance DVR (with Motion Detection and Audio Recording), and to learn about our complete range of accessory products, please visit our website at:

**http://www.lorexcctv.com**

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**CAUTION**

RISK OF ELECTRIC SHOCK
DO NOT OPEN

**CAUTION**: TO REDUCE THE RICK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the products ' enclosure that may be of sufficient magnitude to constitute a risk of electric shock

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.**

**CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF THE PLUG TO THE WIDE SLOT AND FULLY INSERT.**

Please visit us on the web for the most current Manuals, Quick Start Guides and Firmware.
Additional Language Manuals are also available at:
**http://www.lorexcctv.com**

# Important Safeguards

In addition to the careful attention devoted to quality standards in the manufacture process of your video product, safety is a major factor in the design of every instrument. However, safety is your responsibility too. This sheet lists important information that will help to assure your enjoyment and proper use of the video product and accessory equipment. Please read them carefully before operating and using your video product.

## *Installation*

1. **Read and Follow Instructions** - All the safety and operating instructions should be read before the video product is operated. Follow all operating instructions.

2. **Retain Instructions** - The safety and operating instructions should be retained for future reference.

3. **Heed Warnings** - Comply with all warnings on the video product and in the operating instructions.

4. **Polarization** - Do not defeat the safety purpose of the polarized or grounding-type plug.

   o A polarized plug has two blades with one wider than the other.
   o A grounding type plug has two blades and a third grounding prong.
   o The wide blade or the third prong is provided for your safety.
   o If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet

5. **Power Sources** - This video product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your location, consult your video dealer or local power company. For video products intended to operate from battery power, or other sources, refer to the operating instructions.

6. **Overloading** - Do not overload wall outlets of extension cords as this can result in the risk of fire or electric shock. Overloaded AC outlets, extension cords, frayed power cords, damaged or cracked wire insulation, and broken plugs are dangerous. They may result in a shock or fire hazard. Periodically examine the cord, and if its appearance indicates damage or deteriorated insulation, have it replaced by your service technician.

7. **Power-Cord Protection** - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the video product.

8. **Ventilation** - Slots and openings in the case are provided for ventilation to ensure reliable operation of the video product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the video equipment on a bed, sofa, rug, or other similar surface. This video product should never be placed near or over a radiator or heat register. This video product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the video product manufacturer's instructions have been followed.

9. **Attachments** - Do not use attachments unless recommended by the video product manufacturer as they may cause a hazard.

10. **Water and Moisture** - Do not use this video product near water. For example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, near a swimming pool and the like.

    Caution: Maintain electrical safety. Power line operated equipment or accessories connected to this unit should bear the UL listing mark of CSA certification mark on the accessory itself and should not be modified so as to defeat the safety features. This will help avoid any potential hazard from electrical shock or fire. If in doubt, contact qualified service personnel.

11. **Accessories** - Do not place this video equipment on an unstable cart, stand, tripod, or table.
    The video equipment may fall, causing serious damage to the video product. Use this video product only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the video product.
    Any mounting of the product should follow the manufacturer's instructions and use a mounting accessory recommended by the manufacturer.

## *Service*

13. **Servicing** - Do not attempt to service this video equipment yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

14. **Conditions Requiring Service** - Unplug this video product from the wall outlet and refer servicing to qualified service personnel under the following conditions.
    A. When the power supply cord or plug is damaged.
    B. If liquid has been spilled or objects have fallen into the video product.
    C. If the video product has been exposed to rain or water.
    D. If the video product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.
    E. If the video product has been dropped or the cabinet has been damaged.
    F. When the video product exhibits a distinct change in performance. This indicates a need for service.

15. **Replacement Parts** - When replacement parts are required, have the service technician verify that the replacements used have the same safety characteristics as the original parts. Use of replacements specified by the video product manufacturer can prevent fire, electric shock or other hazards.

16. **Safety Check** - Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks recommended by the manufacturer to determine that the video product is in safe operating condition.

17. **Wall or Ceiling Mounting** - The cameras provided with this system should be mounted to a wall or ceiling only as instructed in this guide, using the provided mounting brackets.

18. **Heat** - The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

## *Use*

19. **Cleaning** - Unplug the video product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

20. **Product and Cart Combination** - Video and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the video product and car combination to overturn

21. **Object and Liquid Entry** - Never push objects for any kind into this video product through openings as they may touch dangerous voltage points or "short-out" parts that could result in a fire or electric shock. Never spill liquid of any kind on the video product

22. **Lightning** - For added protection for this video product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video product due to lightning and power line surges. The manufacturer's instructions and use a mounting accessory recommended by the manufacturer.

# General Precautions

1. All warnings and instructions of this manual should be followed
2. Remove the plug from the outlet before cleaning. Do not use liquid aerosol detergents. Use a water dampened cloth for cleaning
3. Do not use this unit in humid or wet places
4. Keep enough space around the unit for ventilation. Slots and openings in the storage cabinet should not be blocked
5. During lightning storms, or when the unit is not used for a long time, disconnect the power supply, antenna, and cables to protect the unit from electrical surge

# FCC CLASS B NOTICE

## Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not in-stalled and used in accordance with the instruction, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment on and off), the user is encouraged to try to correct the interference by one or more of the following measures:

- o  Reorient or relocate the receiving antenna
- o  Increase the separation between the equipment and receiver
- o  Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- o  Consult the dealer or an experienced radio or television technician for assistance

This equipment has been certified and found to comply with the limits regulated by FCC, EMC, and LVD. Therefore, it is designated to provide reasonable protection against interference and will not cause interference with other appliance usage.

However, it is imperative that the user follows this manual' guidelines to avoid improper usage which may result in damage to the unit, electrical shock and fire hazard injury

In order to improve the feature functions and quality of this product, the specifications are subject to change without notice from time to time.

## LOREX TECHNOLOGY INC.

### http://www.lorexcctv.com

# L104 Series Features

- Rugged Metal Cabinet
- Small (15.3" x 13.0" x 5.5" / 388mm x 338mm x 89mm) discrete size
- Easy set up and operation
- Real time viewing and recording
- Large capacity 'Security Certified' Hard Disk Drive (100% duty cycle)
- USB computer link and software for PC viewing, search and archiving
- Save video to the PC (Using the PC Viewer Software*) in *.MYS or *.AVI format
- Video Motion Detection
- Display camera images in Single or Quad mode
- Programmable recording by mode and schedule
- Remote Controller included
- PC Link software included

**Connections:**
- Up to 4 Cameras
- BNC Cable Connectors
- Audio Input & Output
- Option for connection to any PC Monitor**

\* PC Viewer Software is only compatible with Windows 2000 / Windows XP
\*\* L100V Series supports VGA Connection (PC Monitor).

# Table of Contents

# Getting Started

The DVR comes with the following components:



**1 x COMPACT DIGITAL VIDEO
RECORDER**



**1 x POWER ADAPTOR
1 x POWER ADAPTOR CABLE**
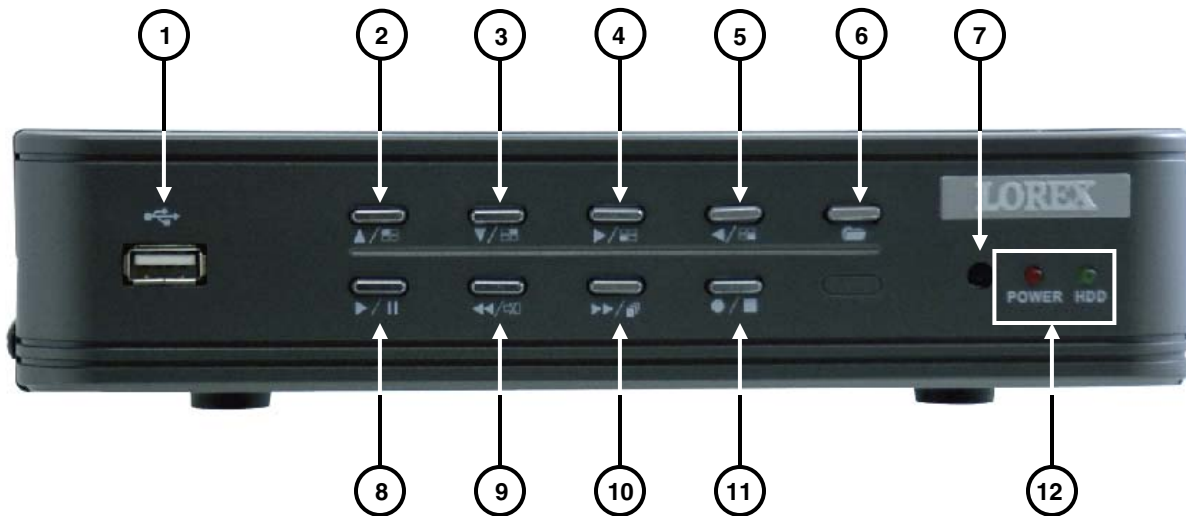


**1 x USB CABLE
(MALE TO MALE)**



**1 x REMOTE
CONTROL**



**1 x HARDWARE MANUAL
1 x QUICK START GUIDE
1 x SOFTWARE CD**

**CHECK YOUR PACKAGE TO CONFIRM THAT YOU HAVE RECEIVED THE COMPLETE
DVR, INCLUDING ALL COMPONENTS SHOWN ABOVE.**

# L104 Series - Front



1. **USB -** One USB 2.0 port is provided to connect the DVR to a PC using the provided USB (Male to Male) Cable and the included PC Viewer Software. Video can be archived on the PC in either *.MYS or *.AVI format.

2. **UP NAVIGATION / CH1 DISPLAY -** Press the key to view Channel 1 during Live View Mode. Use this key in Menu Mode to Navigate UP and change settings.

3. **DOWN NAVIGATION / CH2 DISPLAY** - Press the key to view Channel 2 during Live View Mode. Use this key in Menu Mode to Navigate DOWN and change settings.

4. **RIGHT NAVIGATION / CH3 DISPLAY** - Press the key to view Channel 3 during Live View Mode. Use this key in Menu Mode to Navigate RIGHT and change settings.

5. **LEFT NAVIGATION / CH4 DISPLAY** - Press the key to view Channel 4 during Live View Mode. Use this key in Menu Mode to Navigate LEFT and change settings.

6. **MENU -** Press the MENU key to enter or exit the DVR Setup Mode.

7. **IR RECEIVER** - Receives the signal from the Remote Control

8. **PLAY / PAUSE** - Press the key to start the playback of Video. Press the key during Video Playback to Pause.

9. **REVERSE / MUTE** - Press the key to during video playback to reverse the video (2x, 4x or 8x speed). Press the key during Live View to MUTE the sound (if using a Sound Input device).

10. **FAST FORWARD / SEQUENCE MODE -** Press the key to during video playback to Fast Forward the video (2x, 4x or 8x). Press the key during Live View to Sequence through all Channels.

11. **RECORD** / **PAUSE** - Press the key during video playback to freeze the video on the screen. Press the key during Live Video viewing to start manual recording.

12. **POWER LED / HDD ACTIVITY LED** - The RED POWER LED indicates that the unit is ON. The GREEN HDD ACTIVITY LED blinks when video is being recorded to the Hard Drive.

# L104 Series - Back
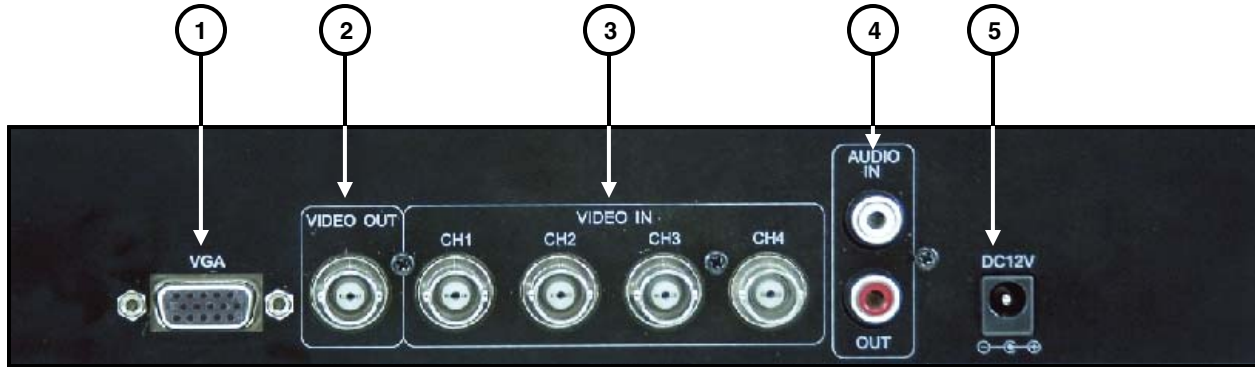


1.  **VGA VIDEO OUTPUT (L104V SERIES ONLY)** - Video Output port to connect the unit to a Computer Monitor. Directly reflects the current onscreen images.

2.  **BNC VIDEO OUT** - Video Output port to connect the unit to a DVR or TV. Directly reflects the current onscreen images.

3.  **BNC VIDEO INPUTS** - Channel 1~4 camera inputs (used to connect Cameras with BNC connection type). Cameras with BNC connections require an additional power adapter.

4.  **RCA AUDIO IN / OUT PORTS** – Connection ports for Audio:

    -   AUDIO IN - Connect One Audio input device such as a microphone to record Audio on one channel.
    -   AUDIO OUT - Audio Output port to connect the unit to a secondary DVR or TV.

5.  **POWER INPUT** – Connect to the DVR Power using the power cord provided with the unit.  The power cable connects the DVR to an electrical outlet.

**NOTE:**  The L104 Series Model has a NTSC/PAL selector switch, which changes the video system between NTSC and PAL modes. This switch is set to NTSC for North America (US/Canada).

# Remote Control

Listed below is a quick reference for the Remote Control. All Buttons described above function the same as the Front Panel buttons.

**CHANNEL BUTTONS 1~4** - Press to select a specific camera by number. The Number Buttons are also used to input the DVR Password.

**NAVIGATION**
- Navigates UP and DOWN in MENU and SEARCH modes.

**REVERSE / MUTE** –
- Press to Reverse the Playback of previously recorded Video (In Playback Mode).
- Press to Mute / Unmute the Volume (if using a Sound Input device).

**FAST FORWARD / SEQUENCE** –
- Press to Fast Forward the Playback of previously recorded Video (In Playback Mode).
- Press to change the Live Camera View to Sequence Mode.

**RECORD / STOP BUTTON** - Press the button to start manual recording. Pressing the button again stops recording or playback of previously recorded video.

**MENU** - Opens the Main Menu (DVR setup).

**ENTER** – Accepts options / enters submenus in Menu Mode.

**PLAY / PAUSE** - Press the button to start the playback of Video. Press the button during Video Playback to Pause.

# Camera Installation

Before you install the camera*, carefully plan where and how it will be positioned, and where you will route the cable that connects the camera to the DVR.

## *Installation Warnings:*

- Select a location for the camera that provides a clear view of the area you want to monitor, which is free from dust, and is not in line-of-sight to a strong light source or direct sunlight.
- Plan the cables' route so that it is not close to power or telephone lines, transformers, microwave ovens or other electrical equipment that could interfere with the DVR.
- Select a location for the camera that has an ambient temperature between 14°F~113°F (-10°C~45°C)
- If you plan to install the camera in a location that has conditions not recommended in this manual, consult with a professional installer and consider use of a separate camera cover or housing
- Before starting permanent installation, have another person hold the camera for you while you verify its performance by observing the image on a monitor.

## *Camera Stand Installation:*

1. Attach the pedestal to the ceiling, wall or other surface by the base using the provided screws.

2. The mounting bracket must be attached to a structural device such as a wall stud or ceiling rafter using the supplied screws.

3. Attach the camera to the pedestal. Adjust the angle of the camera, and tighten the thumbscrew to set the position

**NOTE**: The Camera can be attached to the stand using the screw point on the top or the bottom (to maintain proper camera alignment). This prevents the image from becoming inverted.

* Camera may not be exactly as shown

# Connecting BNC Cameras

1. Connect the 60ft Extension cable to the Camera and DVR:

> A. Connect the Barrel Power connector to a power adaptor.
>
> B. Connect the BNC connector to an available BNC Port (CAM 1~4) on the DVR.
>
> C. Connect the Male Power connector to the Camera.
>
> D. Connect the BNC connector to the Camera.
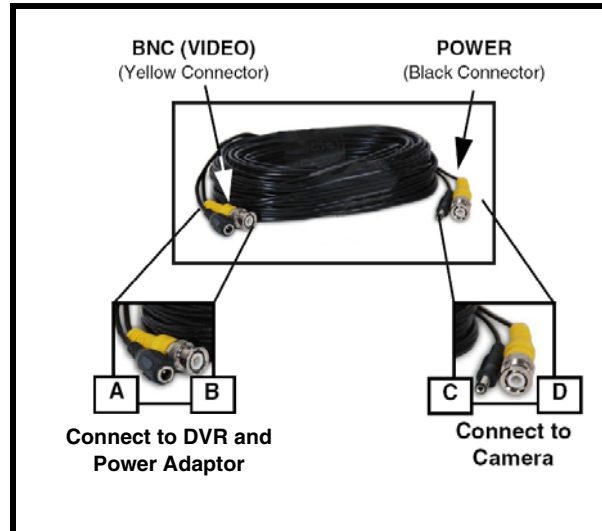
2. Connect the Power Adaptor to a wall outlet.

**IMPORTANT NOTE**: The ends of the extension cable are NOT the same - one end has a Male power port, and the other has a Female power port. Before permanently running the Camera Extension Cable, make sure that the cable has been oriented between the Camera and the unit correctly.

**Male Power Port** - The male power port end of the Extension cable connects to the Camera.

**Female Power Port** - The female power port end of the Extension cable connects to the Power Adaptor.

## *Camera Connection Diagram*

# Display Modes

## *Initial Loading Sequence*

The unit will automatically begin loading when power is connected to the DVR.

1. The DVR will perform a Firmware check. During the loading sequence, the version of Hardware and Mode (NTSC or PAL) will be displayed.

**1**

**DVR V1-03 EN**

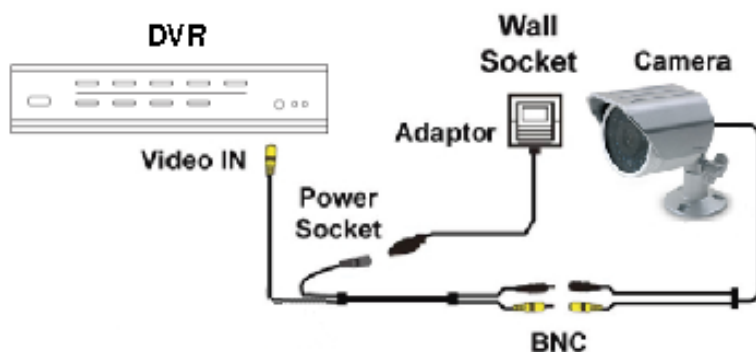**NTSC**

2. Once the Firmware check is completed, the DVR will check the Hard Drive.  If a new drive has been installed, the system will prompt to format the new drive.

**2**

**Checking HDD …**
**ST3500630AV**
**Standalone**

3. The unit will initially load to a split screen view, displaying all 4 cameras with Camera Names and the Date and Time. If a camera cannot be displayed, a V-LOSS message appears instead of an image.
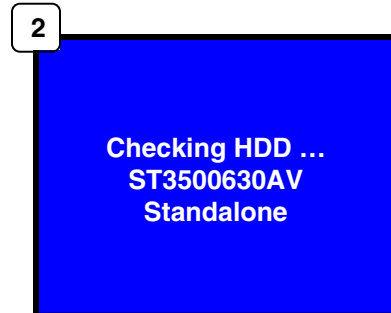
**3**

**2007/10/10 01:02:03**

CH1  CH2
CH3  CH4

**V-LOSS**

**NOTE**: If a new **HARD DRIVE** is detected, the system will prompt you to **FORMAT** the drive. If you do not choose to format the **HARD DRIVE**, the drive will not be detected by the system.

If you choose to **FORMAT** a drive in this way, the drive will no longer be readable by a regular PC without using the VIEWER software included on the CD provided with this unit

Press the ◄ & ► Keys to format, or press the 🗁 (Menu) button to cancel.

**Checking HDD …**

**HDD NEEDS TO FORMAT**
**ALL DATA WILL BE LOST**

**(◄►) FORMAT / (🗁) CANCEL**
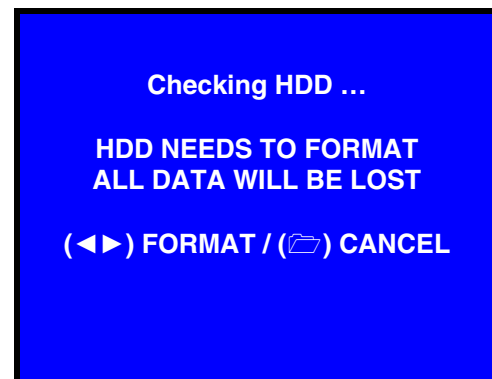
## General Display Overview

1. **DATE & TIME** - Displays the current Date and Time for the DVR.

2. **PASSWORD INPUT** - The Password Input appears when manually stopping the Recording, or entering Menu Mode. The default password is 111111.

3. **CAMERA TITLE & RECORDING STATUS** - Displays the Camera Name (Up to 8 Characters) and Displays the current Recording Status (if the System is recording the □ symbol appears).

4. **V-LOSS MESSAGE** - Appears when the Camera is not sending a Video Image.

5. **REC MESSAGE** - Displays the drive usage when recording.
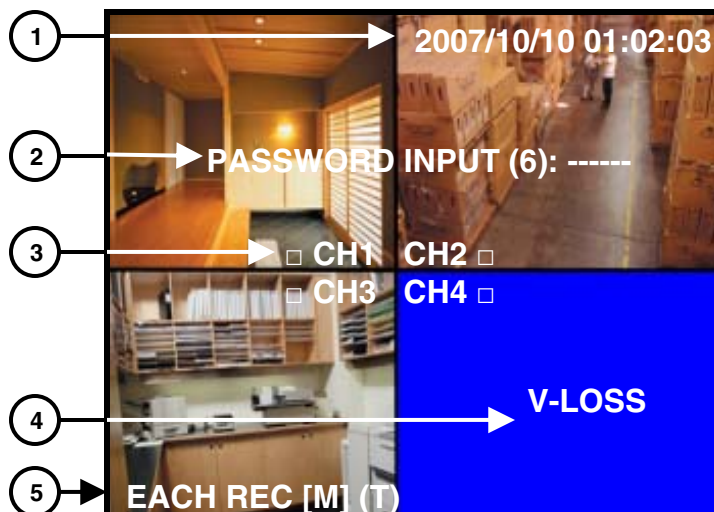


## Camera Display Modes

Cameras can be displayed in Single Channel, QUAD Channel or Sequence Modes.

- The DVR defaults to Quad view when first loaded.
- Press the Channel Buttons to display a single channel or return to Quad View.
- Press the Sequence button to display all cameras in a rotating sequence mode (3 second view per channel by default).
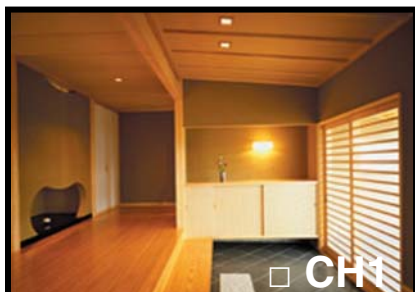


**SINGLE CHANNEL VIEW** – Press the corresponding Channel Number to view.



**QUAD CHANNEL VIEW CAM 1~4** – Press the VIEW button to display the Quad View.

# System Setup Controls

- Enter the **MENU** screen by pressing the **MENU** button (🗁). Enter the password to display the Menu Selection Screen. The Default password is <111111> - press **MENU** to accept the password.
- Scroll through the 7 options by pressing the **UP & DOWN** (▲ ▼) buttons on the Front Panel or Remote Control.
- To enter a sub-menu, navigate to the option and press the **RIGHT** button (▶). To exit a **SUBMENU**, press the **MENU** button.
- To change the options, press the RIGHT and LEFT buttons (◀ ▶).
- Press the MENU Button (🗁) to accept the setting change, and return to the previous menu.
- To exit the MAIN MENU, press the **MENU** button (🗁).

## *Menu Navigation Controls*

- MENU Button (🗁) - Accesses the setup menu, and returns to previous menu options.

- UP / DOWN Controls (▲ ▼) - Move Up/Down to move through the Menu Options
- LEFT / RIGHT Controls (◀ ▶) - Move Left / Right to enter a Menu Option, and press left and right to change the Menu Settings.

```
         MAIN MENU

> SYSTEM SETUP
  CAMERA SETUP
  RECORD SETUP
  RECORD SCHEDULE
  MOTION SETUP
  HARD DRIVE SETUP
  XVGA RESOLUTION 640x480
  SYSTEM RESTORE
 (▲▼): SELECT (◀▶): SET (🗁): EXIT
```

## *Setup Menu - Options*

The Setup Menu has 7 options (L104 Series) or 8 options (L104V Series):

- **SYSTEM SETUP** - The system menu contains basic configuration settings, such as Time/Date, Password, Alarms and Audio Settings.
- **CAMERA SETUP** - The camera menu contains the individual camera settings, including viewing, recording, and image settings.
- **RECORD SETUP** - This menu contains the recording settings for Single and Quad recording.
- **RECORDING SCHEDULE** - This menu contains the recording settings by hour
- **MOTION SETUP** - Configure each camera for Motion Detection Sensitivity.
- **HARD DRIVE SETUP** – Turns the Overwrite ON/OFF and Formats the Hard Drive.
- **XVGA RESOLUTION** – Used to change the VGA Resolution output to a PC Monitor (L104V Series ONLY).
- **SYSTEM RESTORE** – Restores Factory Defaults

## *System Menu Tree*

```
MAIN MENU ──────► SYSTEM SETUP ──────── BUZZER ALARM TIME
                                      ├── VIDEO LOSS ALARM
                                      ├── AUDIO RECORD
                                      ├── AUDIO MUTE
                                      ├── AUDIO INPUT VOLUME
                                      ├── AUDIO OUTPUT VOLUME
                                      ├── PASSWORD SETUP ──────►
                                      └── TIME SETUP ──────►

          ├────── CAMERA SETUP ──────── CAMERA: CH1~CH4
                                      ├── LIVE ON/OFF
                                      ├── RECORD ON/OFF
                                      ├── BRIGHT SETUP
                                      ├── CONTRAST SETUP
                                      ├── COLORS SETUP
                                      └── AUTO SWITCHING

          └────── RECORD SETUP ──────── RECORD QUALITY
                                      ├── VIDEO QUALITY
                                      └── RECORD FRAME RATE
```

```
┌──────────────┐      ┌──────────────────────┐
│  MAIN MENU   │──────│  RECORD SCHEDULE     │
└──────────────┘      └──────────────────────┘

                      ┌──────────────────────┐
                      │  MOTION SETUP        │
                      └──────────────────────┘

                      ┌──────────────────────┐      ┌──────────────────────┐
                      │  HARD DRIVE SETUP    │──────│  OVERWRITE ENABLED   │
                      └──────────────────────┘      └──────────────────────┘

                                                    ┌──────────────────────┐
                                                    │  MASTER HDD SIZE     │
                                                    └──────────────────────┘

                                                    ┌──────────────────────┐
                                                    │  MASTER HDD USED     │
                                                    └──────────────────────┘

                                                    ┌──────────────────────┐
                                                    │  MASTER HDD FORMAT   │──────▶
                                                    └──────────────────────┘

                      ┌──────────────────────┐
                      │  XVGA RESOLUTION     │   (L104V Series ONLY)
                      └──────────────────────┘

                      ┌──────────────────────┐
                      │  SYSTEM RESTORE      │──────▶
                      └──────────────────────┘
```
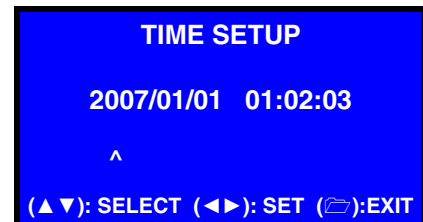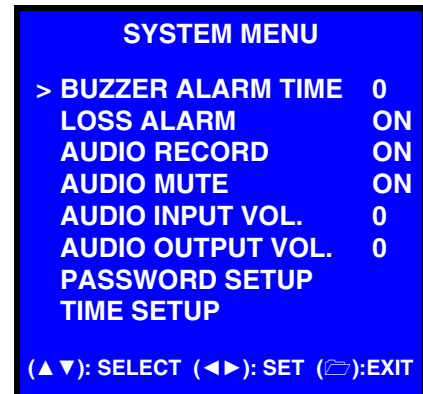
# System Menu

The options in the System Menu control the settings for the DVR.

- **BUZZER ALARM TIME:** Sets the length of time that the Alarm Buzzer will sound for (i.e. Video Loss Alarm Buzzer, Restart of System Alarm Buzzer etc.). The setting for the Alarm Buzzer ranges from 0 (off) ~ 30 Seconds.
- **LOSS ALARM:** Turns the Video Loss Alarm to ON or OFF.
- **AUDIO RECORD:** Turns the Audio Recording to On or OFF (if using an Audio Device such as a Microphone).
- **AUDIO MUTE:** Turns the sound from the DVR to ON or OFF.
- **AUDIO INPUT VOLUME:** Determines the Audio Input volume (from an Audio device such as a Microphone). The settings for Audio Input range from 0 (off) ~ 15 (high).
- **AUDIO OUTPUT VOLUME:** Determines the Audio Output volume (from the DVR). The settings for Audio Input range from 0 (off) ~ 15 (high).
- **PASSWORD SETUP:** Changes the password for the system. Enter the Current Password (Default: 111111), then enter a New Password and Password Confirmation. Press the Menu Button (🗁) to exit without changes. See the Front Panel Buttons for Number Location.
- **TIME SETUP:** Changes the time and date for the DVR. Set the Date by Year / Month / Day, and the time by Hour / Minute / Second.

```
        SYSTEM MENU

> BUZZER ALARM TIME    0
  LOSS ALARM           ON
  AUDIO RECORD         ON
  AUDIO MUTE           ON
  AUDIO INPUT VOL.     0
  AUDIO OUTPUT VOL.    0
  PASSWORD SETUP
  TIME SETUP

(▲▼): SELECT (◄►): SET (🗁):EXIT
```

```
CURRENT PASSWORD: - - - - - -
NEW PASSWORD:     - - - - - -
CONFIRM PASSWORD: - - - - - -
```

```
        TIME SETUP

   2007/01/01  01:02:03

      ^

(▲▼): SELECT (◄►): SET (🗁):EXIT
```

# Camera Setup Menu

The Camera Menu allows the settings to be changed for each of the 4 cameras.

- **CAMERA:** Switch between CH1, CH2, CH3 and CH4 to adjust the settings for each camera.
- **LIVE ON / OFF:** Turns the Live Camera View to ON / OFF. The camera will continue to record regardless of the Onscreen Display.
- **RECORD ON / OFF:** Turns the recording for the Camera to ON or OFF.
- **BRIGHT SETUP:** Changes the Brightness of the camera. The settings for Camera Brightness range from 0 (low) ~ 9 (high).
- **CONTRAST SETUP:** Changes the Contrast of the camera. The settings for Camera Contrast range from 0 (low) ~ 9 (high).
- **COLOR SETUP:** Changes the Color of the camera. The settings for Camera Color range from 0 (low) ~ 9 (high).
- **AUTO SWITCHING:** Sets the display time for the Camera when the DVR is in Sequence Mode. The auto switching time ranges from 0 seconds (OFF) ~ 9 seconds.

| CAMERA SETUP | |
| --- | --- |
| > CAMERA | CH1 |
| LIVE ON / OFF | ON |
| RECORD ON / OFF | ON |
| BRIGHT SETUP | 0 |
| CONTRAST SETUP | 0 |
| COLOR SETUP | 0 |
| AUTO SWITCHING | 0 |

(▲▼): SELECT (◄►): SET (🗁):EXIT

# Record Setup Menu

The Record Menu allows the settings to be changed for 'Quad' Recording or 'Each' Camera Recording.

**NOTE:** The Recording Settings for individual cameras cannot be set (i.e. Settings for Camera 1 cannot be different than settings for Camera 2). The settings for 'Each' Camera refers to the recording of cameras in full screen mode.

- **RECORD MODE:** Switch between EACH and QUAD to adjust the recording settings for Camera View and QUAD View*.
- **VIDEO QUALITY:** Change the Video Quality for the recording to Low, Normal or High.
- **RECORD FRAME RATE:** The Recording Frame rate is shared across all cameras (i.e. 30 FPS = 7.5 FPS per camera). Change the Recording Frame Rate (in seconds) to 1, 2, 3, 4, 5, 7, 10, 15 or 30.
  **NOTE**: If Audio Recording is ON, the available frame rates are 4, 5, 7, 10, 15 or 30.
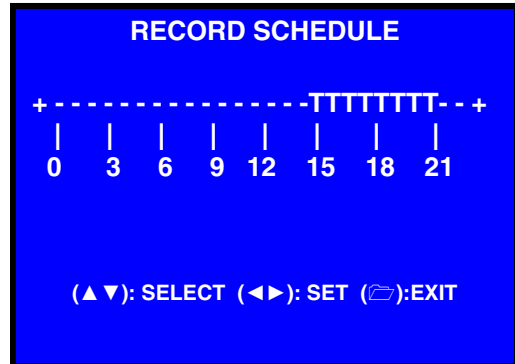
| RECORD SEUP | |
| --- | --- |
| RECORD MODE | EACH |
| VIDEO QUALITY | LOW |
| RECORD FRAME RATE | 1 |

(▲▼): SELECT (◄►): SET (🗁):EXIT

**\* NOTE**: If the Recording Mode is set to QUAD during playback, the DVR will record in QUAD Mode and not in Single Channel Mode.

# Record Schedule Menu

The Record Schedule controls the Recording Type per hour for 24 hours (full day) for both Individual Camera and QUAD recording types. The Available Recording Types include:

- **T :** Continuous (Schedule*) Recording (The DVR is constantly recording on all channels, based on individual camera settings).
- **M :** Motion Recording (The DVR only records when Motion is detected).
- **- :** Recording is OFF

```
         RECORD SCHEDULE

+ - - - - - - - - - - - - - - -TTTTTTTT- - +
  |    |    |    |    |    |    |    |
  0    3    6    9   12   15   18   21



   (▲▼): SELECT  (◄►): SET  (🗁):EXIT
```
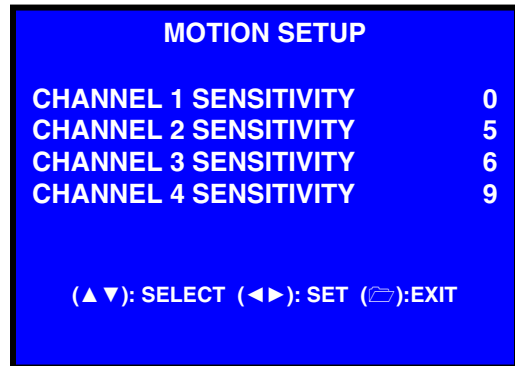
**\* NOTE:** To configure the DVR for Scheduled Recording, set the Record Schedule to the Continuous Recording Type for the desired times (i.e. to set the DVR to begin recording from 3pm ~ 10pm, set the Record Schedule to T for all time blocks between 15hr~20hr as shown above).

# Motion Setup Menu

The Motion Setup controls the Motion Detection sensitivity for each camera. The sensitivity ranges from 0 (off) ~ 9 (high sensitivity detection).

**NOTE**: To enable Motion Detection Recording, Set the Record Schedule Type to 'M' for the desired time block(s).

```
            MOTION SETUP

CHANNEL 1 SENSITIVITY          0
CHANNEL 2 SENSITIVITY          5
CHANNEL 3 SENSITIVITY          6
CHANNEL 4 SENSITIVITY          9



   (▲▼): SELECT  (◄►): SET  (🗁):EXIT
```

# Hard Drive Setup Menu

The hard drive setup controls the installed hard drive (if included).

- **OVERWRITE ENABLED:** Sets the Hard Drive Overwrite to YES or NO. If set to YES, the drive will overwrite older video once full.
- **MASTER HDD SIZE:** Displays the size of the installed Hard Drive (in MB). This is a display only, and cannot be changed in the menu.
- **MASTER HDD USED:** Displays the amount of the Drive space used (in MB). The percentage is also displayed (%). This is a display only, and cannot be changed in the menu.

```
         HARD DRIVE SETUP

OVERWRITE ENABLED            NO
MASTER HDD SIZE       ###### MB
MASTER HDD USED        # MB  #%
MASTER HDD FORMAT



   (▲▼): SELECT  (◄►): SET  (🗁):EXIT
```

# Hard Drive Setup Menu (cont.)

- **MASTER HDD FORMAT:** Formats the DVR Hard Drive. Enter the System Password to format, or press the Menu Button (🗁) to cancel the format.

> **ENTER PASSWORD:      - - - - - -**

**NOTE:** Formatting the Hard Drive removes all accessibility to the Video Data on the Hard Drive (when using the DVR Search functions); however the data is still available through the PC Viewer (until overwritten).

# XVGA Resolution (L104V Series)

The XVGA Resolution controls the display output from the DVR VGA Port (L104V Series Only) to the Viewing PC Monitor.  Use the Left and Right (◄ ►) buttons to change the setting to 640 x 480, 800 x 600, 1024 x 768 or 1280 x 1024.

> **MAIN MENU**
>
>  **SYSTEM SETUP**
>  **CAMERA SETUP**
>  **RECORD SETUP**
>  **RECORD SCHEDULE**
>  **MOTION SETUP**
>  **HARD DRIVE SETUP**
> **> XVGA RESOLUTION 640x480**
>  **SYSTEM RESTORE**
>
> **(▲▼): SELECT  (◄►): SET  (🗁):EXIT**

# System Restore

The System Restore option will reset the DVR to the Factory Default settings.

**NOTE**: The System Restore does not format the hard drive.

Press the Left and Right Buttons (◄ ►) together to format the drive, or press the Menu Button -(🗁) to return to the previous menu without a System Restore.

> **SYSTEM RESTORE?**
>
> **(◄►): YES  (🗁):NO**

# Playback Controls

- Press the PLAY/PAUSE (▶/ ‖) button when in Live View Mode will put the DVR into Playback Mode, playing the most recent event.

- To search for a previous event, press the MENU Button (🗁) when in Playback Mode. Pressing the MENU button will open the PLAYBACK EVENT SEARCH MODE window.

1. **DATE & TIME**: Displays the Start and End Date/Time range. Use the Arrow Buttons (◄ ▲ ▼ ►) to change the dates.
2. **EVENT LIST**: Displays a listing of Events. The Event List displays the Event Type (Time, Motion or Manual), and the Date and Time the event occurred.
3. **NAVIGATION MENU**: Displays a list of navigation buttons:
   - (▲ ▼) - Select an Event, or change the Date and Time.
   - (◄ ►) - Navigation keys
   - (▶/‖) - Press to begin the playback of the selected event.
   - (🗁) - Press to Exit from the Search screen.
   - (●/■) - Switch between the Date/Time and Event List.

**SEARCH TIME**

**HARD DRIVE : MASTER**
07 / 01 / 01  01:02:03  -  07 / 01 / 27  12:15:55

| 01 | TIME | 2007 / 01 / 05 02:15:55 |
| 02 | TIME | 2007 / 01 / 08 13:55:24 |
| 03 | MOTION | 2007 / 01 / 11 18:16:22 |
| 04 | MOTION | 2007 / 01 / 18 03:47:29 |
| 05 | TIME | 2007 / 01 / 26 09:36:27 |

(▲▼): SELECT    (◄►): SET    (▶/‖): PLAY
(🗁):EXIT   (●): SELECT EVENT / TIME

## *Playback*

During the Video Playback, the following buttons are used to control the Video:

- (▶/‖) - Press to Play / Pause the Video.
- (▶ ▶) - Press to Speed Up the forward playback of the Video (2x, 4x or 8x speed).
- (◄ ◄) - Press to Speed Up the reverse playback of the Video (2x, 4x or 8x speed).
- (● / ■) – Press to Stop the Video, and exit from Video Playback mode.

2007/10/10 01:02:03

CH1  CH2
CH3  CH4

V-LOSS

▶ [M]

# DVR PC Viewer Software

The PC Viewer software (included with the DVR) allows the Video Data from the DVR to be viewed using a USB link to a PC.  Video saved to the PC Hard Drive (from the DVR) is written as a *.MYS file format, and can only be read using the PC Viewer Software.

## *System Requirements:*

| | |
|---|---|
| **Supported Operating System** | Windows 2000 (SP4) or Windows XP (SP2 or higher) |
| **PC Hardware & Software** | Pentium 1.0 GHz; 512 MB RAM; DirectX 7.0 |

**NOTE**: The PC Viewer Software is not compatible with Windows Vista. Please visit us on the web for the most current Manuals, Quick Start Guides and Firmware at: http://www.lorexcctv.com/support

## *Starting the PCViewer Application:*

To run the PC Viewer Application, run the PCViewer_V3.8_EN.exe file from the included CD-ROM. The application will attempt to detect a connection to the DVR before launching the viewing window:

- If the DVR is detected, the application will load and prompt the user to begin playing the most recent recorded video (Recent Position dialogue window).

- If the DVR is not detected, the application will open an error dialogue window (Detection Error dialogue window) indicating the storage device is not found, and will launch the MYS Player Window.

## *Connecting the DVR:*

1. Make sure that the power cable for the DVR is disconnected.
2. Use the provided USB Cable (Male to Male). Connect one end to the front USB Port on the DVR, and connect the other end to a PC. USB Port.
3. Connect the power cable to the DVR.  The PC should automatically detect the DVR as a New USB Device and install the Hardware.
4. Launch the PC Viewer Application. The software will

    automatically detect the DVR, and launch the "PC Viewer Storage Device Detection" window.
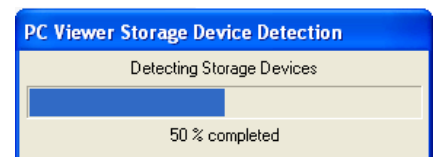
# PC Viewer – Main Window
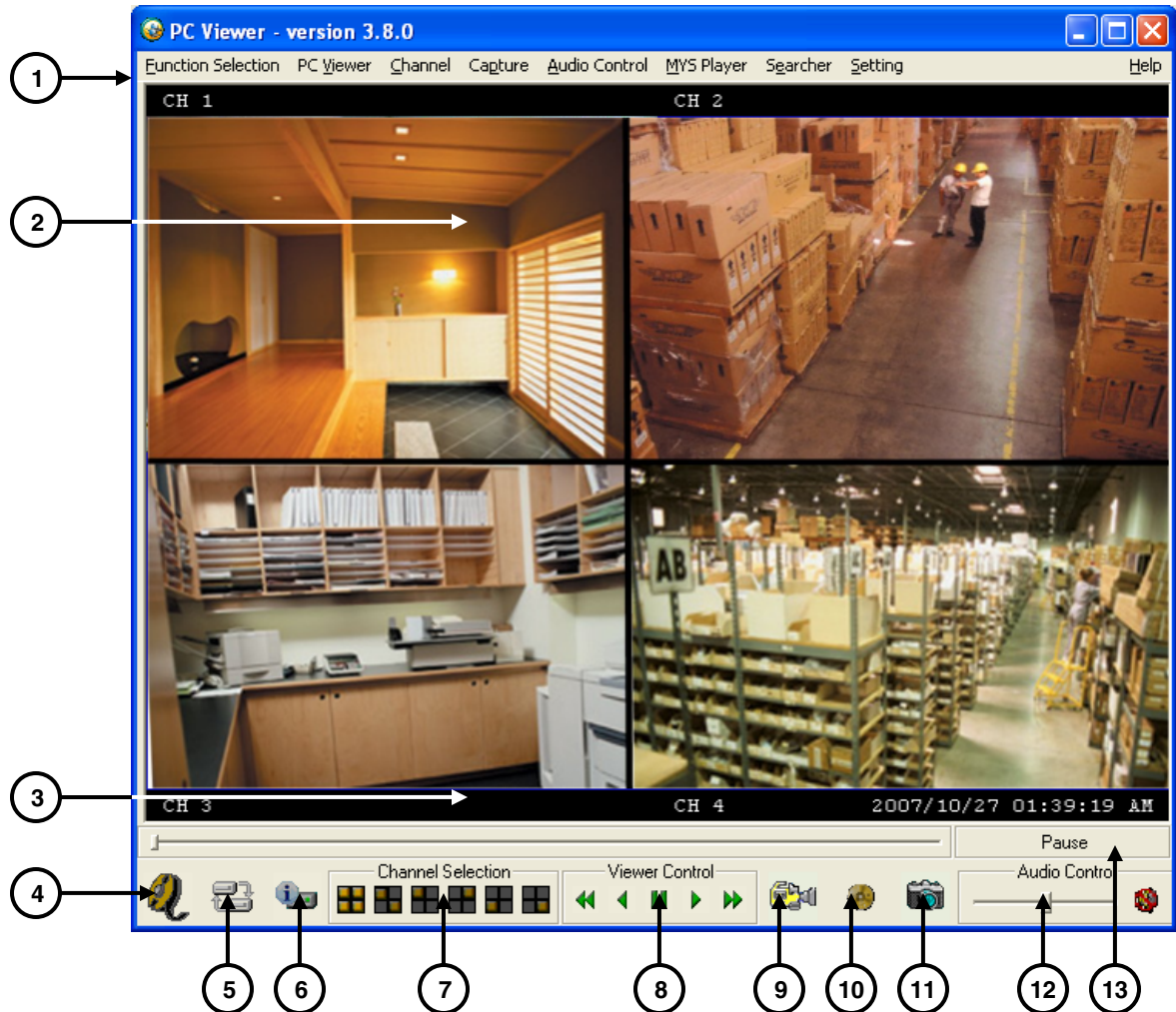


1.  **PC VIEWER MENU CONTROLS** – The Menu Controls function in the same way as the GUI Controls on the Viewer Window:
    *   **Function Selector**: Controls the onscreen location of the program and closes the application.
    *   **PC Viewer**: Playback controls (Play, Pause, Fast Forward & Reverse).
    *   **Channel**: Controls the onscreen video display (Single Channels, 2-Channel View & Quad View).
    *   **Capture**:  Saves the current video as MYS or AVI video, or JPEG still image.
    *   **Audio Control**: Raises, Lowers or Mutes the Volume.
    *   **MYS Player**:  Loads an MYS File into the player.
    *   **Searcher**: Searches the DVR by event or time.
    *   **Setting**: Changes the default video save directory.
    *   **Help**: Displays the application Version information.

2.  **VIDEO DISPLAY** – Displays the Video in Single, 2-Channel or Quad View. The video is displayed in Quad view when the application loads.

# PC Viewer – Main Window (cont …)

3. **CHANNEL TITLE & DATE** – Displays the Channel Description (CH1 ~ CH4), and the Date and Time of the Recorded Video.

4. **MYS PLAYER BUTTON** - Launches the MYS Player Window (see below).

5. **STREAM SELECT BUTTON** – Used to select another Stream Device (disabled).

6. **DVR STORAGE DEVICE INFORMATION** – Displays details about the DVR including the Connection Type, Device Type, Storage Size and Length of Video (Stream in MB).

**Storage Device Info [1]**

Physical Storage Device: 1
| | |
|---|---|
| Connection Type: | NOT IDE [USB or Firewire] |
| Device Type: | Fixed hard disk media |
| VY Device Type: | VY Device |
| Storage Size: | 500107 MBytes |
| Stream Length: | 2130 MBytes |

✔  OK

7. **CHANNEL SELECTION BUTTONS** – Changes the Onscreen View to Quad, 2-Channel, or switches between CH1 ~ CH4

Channel Selection

8. **VIEWER CONTROLS** – Controls the playback of the current onscreen Video (Reverse Playback, Step-Reverse Single Frame, Pause/Play, Step-Forward Single Frame and Fast Forward).

Viewer Control

9. **CAPTURE VIDEO IN MYS FORMAT** – Saves the current video stream as an MYS file to the default directory. To save an MYS file:

- Load the Video into the Player Window.
- Use the Viewer Controls to locate the point in the video to start the Video Save.
- Press the PAUSE button on the Viewer Controls
- Press the Capture MYS Stream button. A Capture Status Window with a red bar will appear. Press the 'Stop Capturing' button to end the capture.
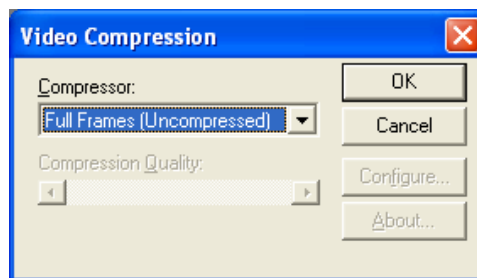- A dialogue window will appear indicating that an MYS file was created.

✖ Stop Capturing

**PCViewer V3.8 EN**

⚠ A MYS file was created. You can find the file in the capture directory.

OK

25

10. **CAPTURE VIDEO IN AVI FORMAT** – Saves the current video stream as an AVI file (AVI Files can be played back in a Video Playback application such as Windows Media Player®, as long as the correct Codecs are installed on the PC).

- Load the Video into the Player Window.
- Use the Viewer Controls to locate the point in the video to start the Video Save.
- Press the PAUSE button on the Viewer Controls
- Press the Capture AVI Stream button. A 'Save File' dialogue window will appear prompting the user to select a save directory.
- Once a Save Directory is selected, a Video Compression window will appear. Select the desired Compression Type (Codec)*:

| | |
|---|---|
| o Cinepak Codec by Radius | o Intel Indeo® Video 4.5 |
| o Intel 4:2:0 Video V2.50 | o Indeo® Video 5.10 |
| o Intel Indeo(R) Video R3.2 | o DivX® 6.1.1 Codec (1 Logical) |
| o Intel IYUV Codec | o DivX® 6.1.1 YV12 Decoder |
| o Microsoft RLE | o Sunplus 32-bit Compressor |
| o Microsoft Video 1 | o VCM IMM4 Decoder |
| o Microsoft H.263 Video Codec | o Xvid MPEG-4 Codec |
| o Microsoft H.261 Video Codec | o Full Frames (uncompressed) |

* **NOTE**: Video Codecs for playback are **NOT** supplied with this Software.  Codecs can be downloaded from the Internet on sites such as **http://www.microsoft.com** or **http://www.Divx.com**

- Once the compression type is selected, press the OK button to save the video.
- Press the AVI Capture Button to end the Video Capture.
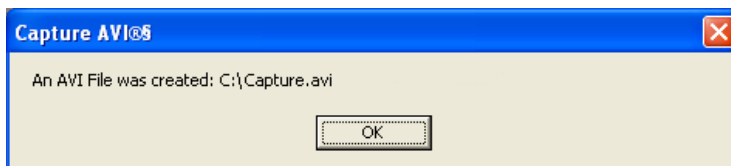
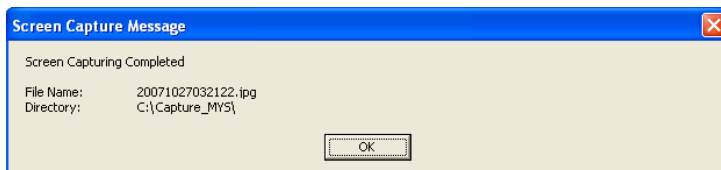11. **CAPTURE JPEG STILL IMAGE** – Saves the current video image as a JPEG Image file.

- Load the Video into the Player Window.
- Use the Viewer Controls to locate the point in the video to start the Image Save.
- Press the PAUSE button on the Viewer Controls
- Press the Capture JPEG Image button.
- A 'Screen Capture Message' window will appear indicating a successful image capture.

12. **AUDIO CONTROLS** – Controls the Audio Playback Volume and Mute Status.
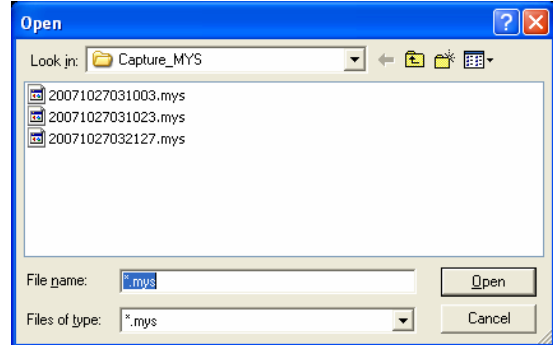**NOTE:** If no audio capture device has been connected to the DVR, audio will not be recorded to the DVR.

13. **PLAYBACK STATUS** – Indicates the current Video Playback status as PLAYING or PAUSE.
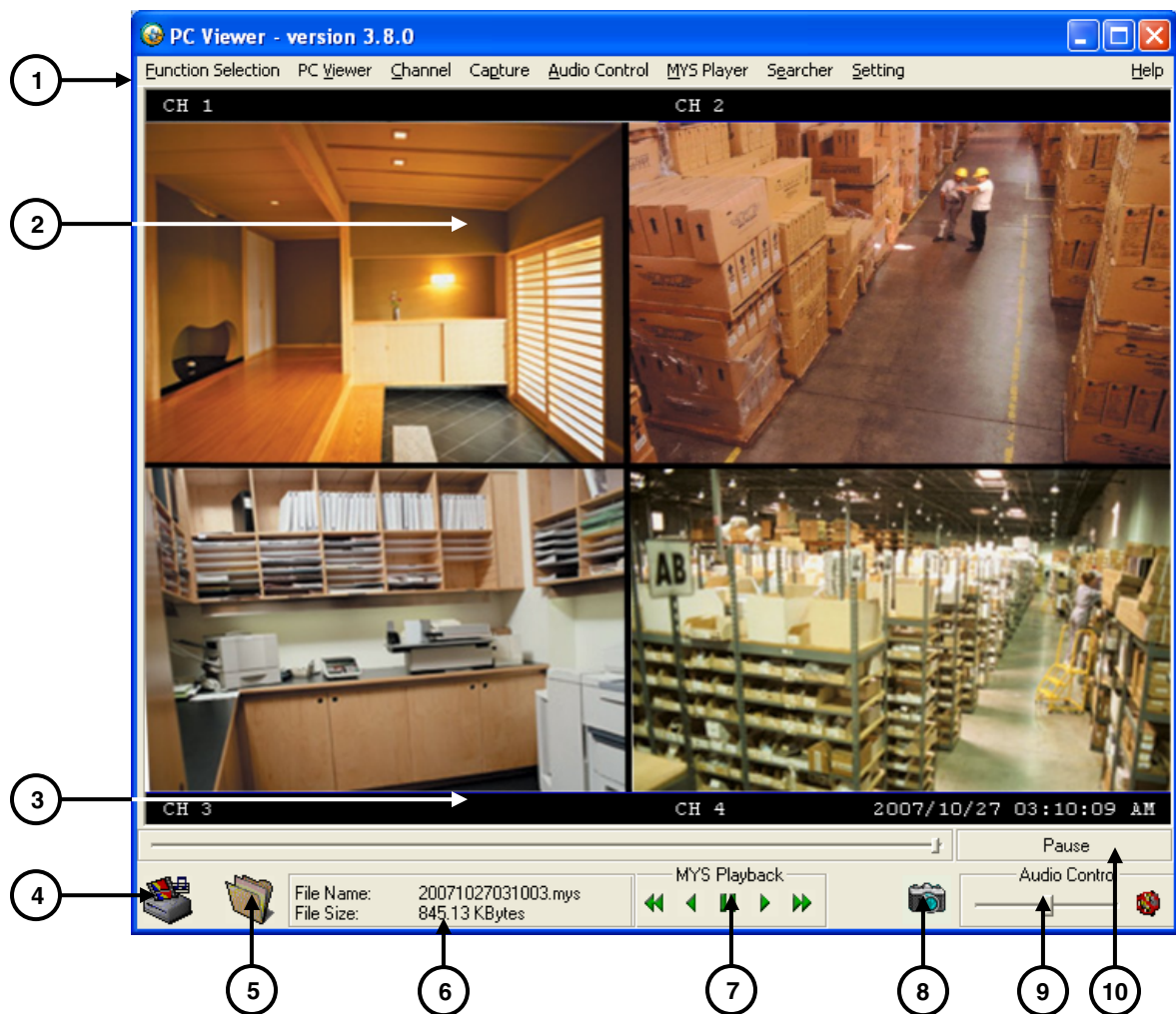
# Using the MYS Player

When the MYS Player opens, an 'Open File' dialogue box appears. Select the MYS File to play back in the Viewer, and press the Open button.

# MYS Player – Main Window

# MYS Player – Main Window (cont …)

1. **MYS PLAYER MENU CONTROLS** – The Menu Controls operate in the same way as the PC Viewer Controls (see above).

2. **VIDEO DISPLAY** – Displays the Video in Single, 2-Channel or Quad View. The video is displayed in Quad view when the application loads.

3. **CHANNEL TITLE & DATE** – Displays the Channel Description (CH1 ~ CH4), and the Date and Time of the Recorded Video.

4. **MYS PLAYER BUTTON**        – Returns to the PC Viewer Application Window (see above).

5. **OPEN VIDEO BUTTON**        – Used to select a different MYS Video File.

6. **FILE DETAILS** – Displays the MYS Video File Name and File Size (in MB).

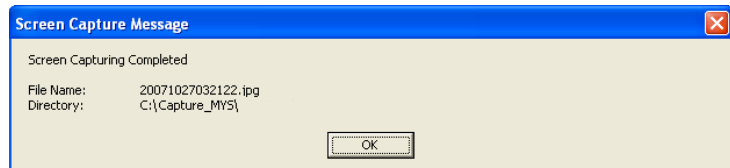| File Name: | 20071010031003.mys |
|---|---|
| File Size: | 845.13 KBytes |

7. **MYS PLAYBACK CONTROLS** – Controls the playback of the current onscreen Video (Reverse Playback, Step-Reverse Single Frame, Pause/Play, Step-Forward Single Frame and Fast Forward).

8. **CAPTURE JPEG STILL IMAGE**        – Saves the current video image as a JPEG Image file.

- Load the Video into the Player Window.
- Use the Viewer Controls to locate the point in the video to start the Image Save.
- Press the PAUSE button on the Viewer Controls
- Press the Capture JPEG Image button.
- A 'Screen Capture Message' window will appear indicating a successful image capture.

**Screen Capture Message**

Screen Capturing Completed

| File Name: | 20071027032122.jpg |
|---|---|
| Directory: | C:\Capture_MYS\ |

OK

9. **AUDIO CONTROLS** – Controls the Audio Playback Volume and Mute Status.
**NOTE:** If no audio capture device has been connected to the DVR, audio will not be recorded to the DVR.

Audio Control

10. **PLAYBACK STATUS** – Indicates the current Video Playback status as PLAYING or PAUSE.

Playing

Pause

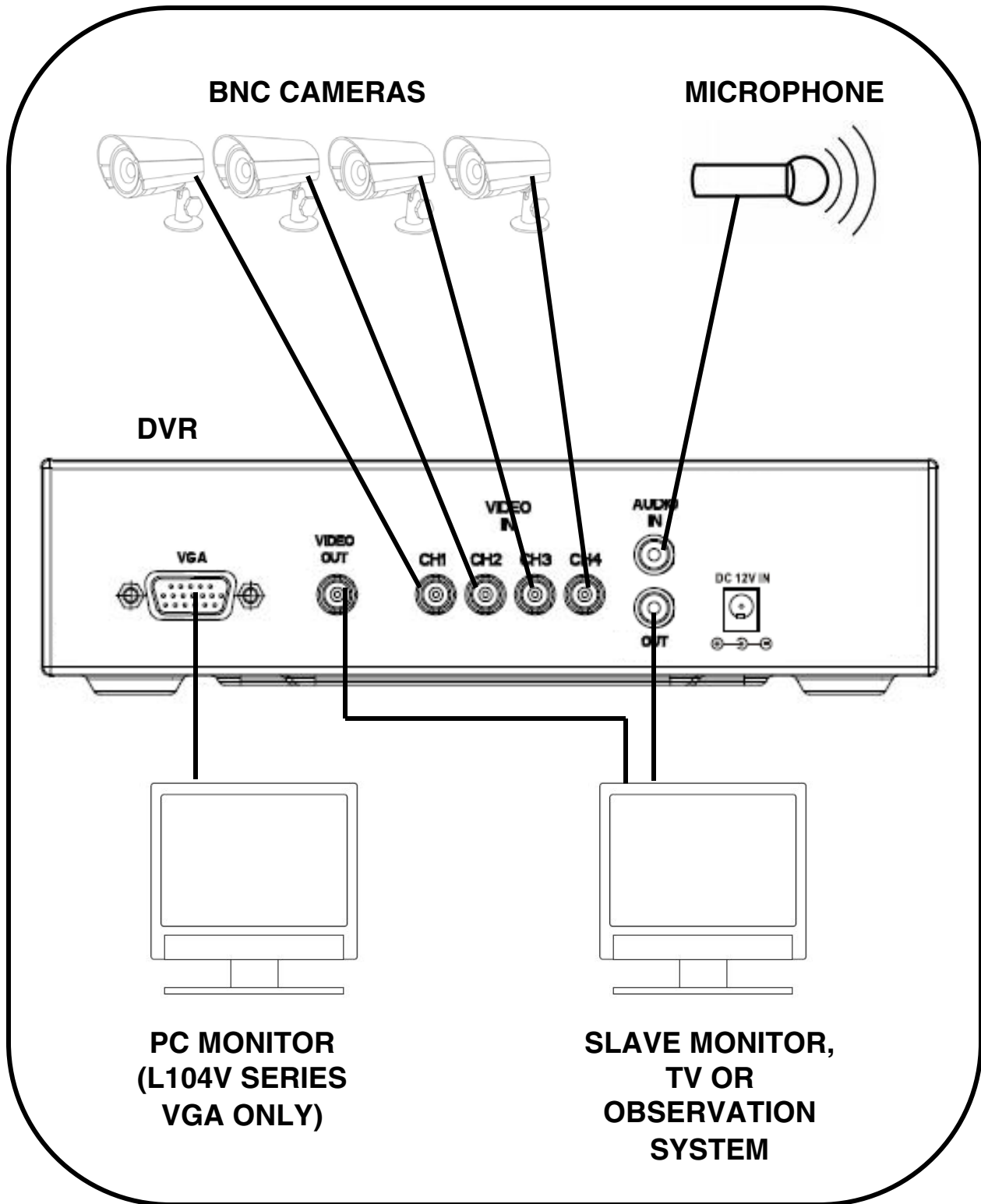# DVR Specifications - Appendix #1

| DVR | |
|---|---|
| Display Frame Rate | NTSC: 120 FPS (4 x 30 FPS)<br>PAL: 100 FPS (4 x 25 FPS) |
| Recording Frame Rate (QUAD Mode) | NTSC: Max 30 FPS<br>PAL: Max 25 FPS |
| Recording Frame Rate (Single Mode) | NTSC: Max 7.5 FPS (30 FPS / 4)<br>PAL: Max 6.25 FPS (25 FPS / 4) |
| Recording Modes | Motion / Continuous / Scheduled |
| Resolution Display | NTSC: 720 x 480<br>PAL: 720 x 576 |
| Resolution Recording | NTSC: 640 x 224<br>PAL: 640 x 272 |
| MJPEG Compression Format | Low: 12 kb / frame<br>Normal: 15 kb / frame<br>High: 20 kb / frame |
| Audio Function | Audio Input / Output: Real Time Recording and Playback |
| HDD Capacity | Maximum 1 x 500 GB HDD |
| Backup Device | VCR / USB PC Link (USB Cable connection to Computer with PC Application) |
| Search Mode | Time / Date / Event |
| System Recovery | Power Recovery, auto restore, record mode |
| Features & Functions | Motion Detection, Loss Detection, Buzzer Alarm, Brightness Adjustment, Contrast Adjustment, USB Output to PC (PC Link Function) |

| INPUTS/OUTPUTS | |
|---|---|
| Video Input | 4 Channel composite (BNC) NTSC / PAL |
| Video Output | 1 Channel composite VGA<br>1 Channel VGA (Only available on L104V Series) |
| VGA Output (L104V Series) | 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024 Resolution |
| Audio Input | 1 x RCA Audio Input |
| Audio Output | 1 x RCA Audio Output |

| GENERAL | |
|---|---|
| Power (AC input) | DC 12V / 4A<br>AC 110V~240V 50/60hz |
| Dimensions (W x H x D) | 8.6" x 1.8" x 11.3"<br>220mm x 48mm x 288mm |
| Weight | 3.4 lbs / 1.5 kg |
| Dimensions with Package (W x D x H) | 15.3" x 13.0" x 5.5"<br>388mm x 338mm x 89mm |
| Weight with Package | 10 lbs / 4.5kg |
| Operating Environment | Temperature: 0 ~ 40 ℃, Humidity: 0 ~ 80 % |
| Approval | FCC, CSA, UL |

# Full Connectivity Diagram – Appendix #2

The following diagram outlines a general set of connections available with the DVR.

**BNC CAMERAS**  **MICROPHONE**

**DVR**

VGA

VIDEO
OUT

VIDEO
IN

CH1  CH2  CH3  CH4

AUDIO
IN

OUT

DC 12V IN

**PC MONITOR
(L104V SERIES
VGA ONLY)**

**SLAVE MONITOR,
TV OR
OBSERVATION
SYSTEM**

# Hard Drive Replacement - Appendix #3

The DVR comes with a pre-installed Hard Drive; however the unit will work with a replacement single IDE Hard Drive (up to 500GB).

**NOTE**: Make sure that the DVR is OFF and the power cable has been disconnected before changing the Hard Drive.

## *Removing the Back Cover and Installed Drive*

1. Remove the seven (7) screws from the DVR Cover. Remove the cover panel.
2. Remove all cables from the previously installed drive.
3. Remove the screws holding the drive to the case.



## *Setting the New Drive to Master*

- Refer to the General Jumper Pin Setting on HDD Surface (generally located on a sticker on the top of the drive).
- Set the Jumper Pin Set to Master (1 Drive).

**NOTE**: Use an IDE Hard Drive.

# Hard Drive Replacement (cont …)

## *Installing the New Drive*

- Place the new drive in the case, and reattach the holding screws.
- Reconnect the cables in the same way as connected to the previous drive.
  - o Reconnect the IDE Cable. Confirm that the cable is securely connected within the DVR and to the Hard Drive.
  - o Reconnect the Hard Drive power cable. Confirm the cable is securely connected to the Hard Drive.
- Replace the drive cover on the top of the DVR, and reattach with the seven (7) screws.

## *New Hard Drive Format*

The New Hard Drive MUST be formatted.

**NOTE**: If a new **HARD DRIVE** is detected, the system will prompt you to **FORMAT** the drive. If you do not choose to format the **HARD DRIVE**, the drive will not be detected by the system.

If you choose to **FORMAT** a drive in this way, the drive will no longer be readable by a regular PC without using the VIEWER software included on the CD provided with this unit

Press the ◄ & ► Keys to format, or press the 🗁 (Menu) button to Cancel.

**Checking HDD …**

**HDD NEEDS TO FORMAT**
**ALL DATA WILL BE LOST**

**(◄►) FORMAT / (🗁) CANCEL**
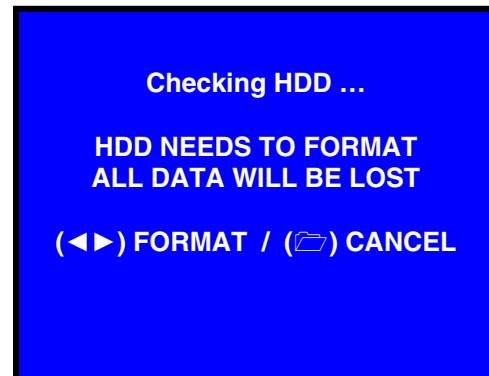
# Troubleshooting – Appendix #4

When a malfunction occurs, it may not be serious and can be corrected easily. The following describes the most common problems and solutions. Please refer to the following before calling Lorex Technical Support:

**Problem:**
DVR Unit is not receiving power, or is not powering up

**Check:**
- Confirm that all cables are connected correctly.
- Confirm that the power adapter is securely connected to the back of the unit.
- Confirm that there is power at the outlet by:
  - Connecting the power cable to another outlet
  - Testing the outlet with another plugged device (such as an electric calculator or phone charger)
- If the unit is connected through a power bar or surge protector, try bypassing the bar and connecting the power directly to the wall outlet.
- Confirm that the unit is powered on (LED indicators on the front should be ON).

**Problem:**
The DVR is not responding when any of the buttons are pushed.

**Check**:
- Turn the master power OFF by removing the POWER CABLE. The LED indicators should be OFF.
- Wait for 1 minute – Reconnect the POWER CABLE.
- The unit will make an audible alert when powered back on

**Problem:**
The image on the DVR is too dark or too bright

**Check:**
- Adjust the CONTRAST and BRIGHTNESS of the unit (Refer to the Menu section)

**Problem:**
The image on the DVR does appear, but does not have sound.

**Check:**
- Check the VOLUME
- Check the CAMERA connection to the DVR (DIN CONNECTION ONLY).
- Confirm that the Camera has sound capabilities (Refer to the manual for the camera model for further information on the Camera functionality)

# Troubleshooting (cont…)

**Problem:**
The picture on the DVR is poor, shrinks or flickers

**Check:**
- Check the camera video cable and connections
- Disconnect and reconnect the cable at the DVR and at the Camera
- Clean the camera lens
- Adjust the CONTRAST and BRIGHTNESS settings in the Menu
- Check that the Camera is not in direct sunlight

**Problem:**
There is no picture appearing on a Channel / Camera is not displaying

**Check:**
- Check the camera video cable and connections
- Disconnect and reconnect the cable at the DVR and at the Camera
- Try moving the camera to another channel or use another cable

# Recording Charts (NTSC / PAL) - Appendix #5

The following charts are based on an 80GB Hard Drive (using 4 Cameras) and provide an approximation of hours based on the Quality and Frame Rate. The charts are provided for reference only, as actual recorded data may vary in size.

| Recording Results in NTSC Format | | | 30 FPS | 15 FPS | 7 FPS | 1 FPS |
|---|---|---|---|---|---|---|
| Video Signal | Display Format | Video Quality | 30 FPS | 15 FPS | 7 FPS | 1 FPS |
| NTSC | QUAD Mode | High | 36 Hours | 72 Hours | 144 Hours | 1,080 Hours |
| | | Normal | 48 Hours | 96 Hours | 192 Hours | 1,440 Hours |
| | | Basic | 58 Hours | 116 Hours | 232 Hours | 1,740 Hours |
| | EACH Mode (Full Screen) | High | 64 Hours | 128 Hours | 256 Hours | 1,920 Hours |
| | | Normal | 90 Hours | 180 Hours | 360 Hours | 2,700 Hours |
| | | Basic | 112 Hours | 224 Hours | 448 Hours | 3,360 Hours |

| Recording Results in PAL Format | | | 25 FPS | 12 FPS | 6 FPS | 1 FPS |
|---|---|---|---|---|---|---|
| Video Signal | Display Format | Video Quality | 25 FPS | 12 FPS | 6 FPS | 1 FPS |
| PAL | QUAD Mode | High | 38 Hours | 76 Hours | 152 Hours | 950 Hours |
| | | Normal | 48 Hours | 96 Hours | 192 Hours | 1,200 Hours |
| | | Basic | 60 Hours | 120 Hours | 240 Hours | 1,500 Hours |
| | EACH Mode (Full Screen) | High | 62 Hours | 124 Hours | 248 Hours | 1,550 Hours |
| | | Normal | 90 Hours | 180 Hours | 360 Hours | 2,250 Hours |
| | | Basic | 118 Hours | 236 Hours | 472 Hours | 2,950 Hours |

# Optional Accessories

The following accessories are available to add to your existing DVR

**BNC
CAMERAS**

**BNC DOME TYPE
CAMERAS**

**CAMERA
EXTENSION
CABLES**

**NIGHT VISION
ACCESSORIES**

**CAMERA
ADAPTOR
CABLES**

**To order these accessory items, or for a complete listing of available products, please visit us on the web at:**

**WWW.LOREXCCTV.COM**

# It's all on the web

📁 **Product Information**   📄 **Specification Sheets**

📖 **User Manuals**   💻 **Software Upgrades**

🕐 **Quick Start Guides**   **Firmware Upgrades**

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