DVR-X1

Operating Instructions

Single Input DVR System

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Contents

1. Features

- Automatically detects NTSC/PAL.

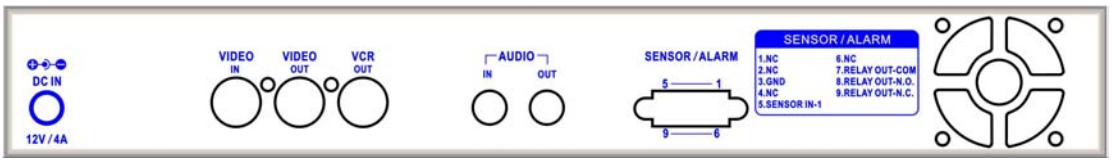
  (Please connect the video source before powering the DVR-X1.)

- Digital recording replaces conventional time-lapse recorder.
- Video compression MJPEG.
- Motion detection recording.
- Various recording modes - continuous, schedule, motion detection and external sensor modes.
- One external alarm input and one output. Automatic recording after alarm is triggered.
- 1 channel audio recording.
- Quick and easy search for events by time, date or alarm.
- Highly stable non-PC based operating system.
- Easy to operate.
- DVR can overwrite or notify when the HDD if full.
- DVR will automatically return to the original operating state after a power failure.
- Built in buzzer for video loss and alarm sensor input.
- Full range of menu functions for ease of operation and versatility.

2. Specification

Operation Mode	**Front panel, OSD**
Recording Speed	**720 x 240 : 1–10 Frames/sec (adjustable)** **360 x 240 : 1–15 Frames/sec (adjustable)**
Recording Mode	**Manual** **Schedule** **Motion Detection (Sensitivity Adjustable)** **External Sensor**
Audio Recording / Live Audio	**1 ch**
Compression	**MJPEG**
Video Input	**1 channel BNC (NTSC/PAL)**
Video Output	**Composite video (BNC) x 2**
Playback Function	**Playback — forward、reverse** **Fast forward** **Fast reverse** **Forward one frame** **Zoom in**
HDD	**40 GB(standard) or 80 GB (optional)**
Built-in Buzzer	**Video loss alarm** **Motion Detection** **External Sensor**
Watch-Dog Function	**Automatically returns to the original operation after a power failure.**
Search Mode	**Date, Time, Alarm**
Operation Temperature	**32 degrees F to 110 degrees F**
Power Supply	**100V~240V AC, 50/60Hz** **DC 12V/4A**
Power Consumption	**12 W**
Dimension	**313mm x 255mm x 44mm (W x D x H)**
Weight	**3.0Kg**

3. Installation



Rear panel

Power Supply： 12V DC，4A.

VIDEO IN： Image signal input, connected to the video source.

VIDEO OUT：“**VIDEO OUT**” is connected to monitor ”**VIDEO IN**”.

VCR OUT：“**VCR OUT**” can be connected to the ”**VIDEO IN**” of a VCR.

AUDIO IN：For a MIC connection.

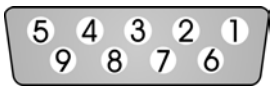
AUDIO OUT：Line Level for live and Audio playback.

SENSOR/ALARM： There is a DB9 connector on the right side of the rear panel, which is connected to any external sensors and alarm output (Relay).

FAN：To radiate hot air

⚠ The DVR-X1 automatically detects NTSC/PAL, please connect the video source before turning on the DVR.

DB9 PIN CONFIGURATION:



3	GND	Ground
5	Sensor Trigger Input – 1	External sensor input
7	Relay Out – COM	Replay output COM terminal
8	Relay Out – N.O.	Replay output normally open
9	Relay Out – N.C.	Replay output normally closed

4. Function Key Description

Front Panel

MENU：Menu set up

ENTER：Enter to sub-menu or editing procedure.

EXIT：Press this function key to return to the previous selection.

←：Move to the left (up) item during editing procedure.

→：Move to the right (down) item during editing procedure.

+：Next value.

-：Previous value.

SEARCH：Under normal mode, press this key to display log file lists.

REC<●>：Under normal mode, press this key to enter record mode.
PLAY<▶>：Under normal mode, press this key to enter the latest record file.
F.F. <▶▶>：Under playback mode, press this key to fast-forward the images.
REW<◀◀>：Under playback mode, press this key to fast-reverse the images.
STEP<II▶>：Under playback mode, press this key to skip and pause the images.
STOP<■>：Under manual recording mode, press this key to stop manual recording mode and return to monitoring display.
Under playback mode, press this key to stop playback mode and return to normal mode.

ALARM (ON/OFF)：Alarm switch consists of relay and buzzer.
"ON" ：Triggers the alarm buzzer and relay, LED lights up.
"OFF"：Switches off the alarm buzzer and relay, LED goes off.

5. Playback Mode

5.1 Play Mode

In normal or sequence mode, press **<PLAY>** key to enter the playback mode, or press **<SEARCH>** key to enter the log files list (including: date, time), then press **<PLAY>** key or **<ENTER>** key to display image.

- **Quick Image Search：**

  Press **<F.F.>** key, for quick fast forward search image (x2, x4).
  Press **<REW>** key, for quick fast reverse image (x1, x2, x4).
  Press **<PLAY>** key once again to return to normal speed.

- **Skip Search：**

  Press **<STEP>** key, to skip and pause images.

- **Zoom：**

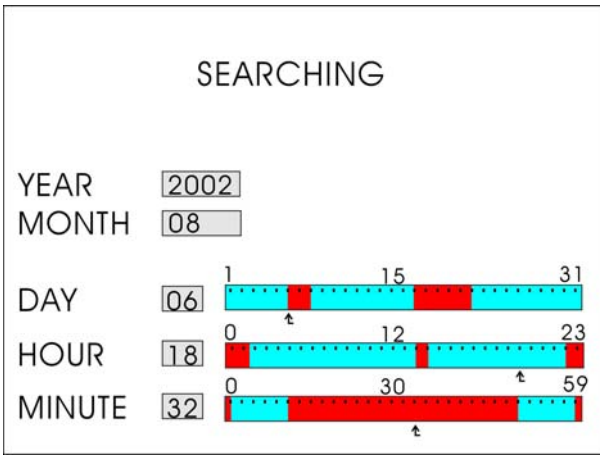
  When the resolution is 720x240, press **<ENTER>** key to enlarge, press **<II▸>** key and than press **<←>**、**<→>**、**<＋>**、**< - >** key to allow the zoom in window to be moved to all directions, press **<ENTER>** key again to return to its original size.
  When the resolution is 360x240, press **<ENTER>** key to enlarge, press **<ENTER>** again to return to normal image size (360x240).

- **Stop mode：**

  Press **<STOP>** key to stop play mode and return to normal mode.

5.2 SEARCH

According to date and time to perform searching function, press **<SEARCH>** key to display the image below：



Use **<←>**、**<→>** key to move the cursor (Highlight) up and down to the area to be modified, press **< + >**、**< - >** key to make changes.

Year、**Month**：

Enter the year / month by pressing **< + >** or **< - >** key to select the year / month.

Day、**Hour**、**Minute**：

Enter the above setting by pressing **< + >** and **< - >** key or **<⏵⏵>** and **<⏴⏴>** key.

After all selections has been made, press **<PLAY>** or **<ENTER>** key to enter play mode, or **<EXIT>** key to return to normal mode.

Red： Indicates that the area is under Motion Recording or that the Sensor has been triggered for Recording.

Blue：Indicates manual recording or schedule recording.

6. Recording Mode

Manual Recording： Under Normal mode, pressing the **<REC>** key will start recording and pressing the **<STOP>** key will stop manual recording.

- Note: It takes 5 seconds to stop manual recording.

  For other functions including: **Schedule Recording**, **Motion Detection Recording**, **Sensor Input Recording**, please refer to **Menu Setup**.

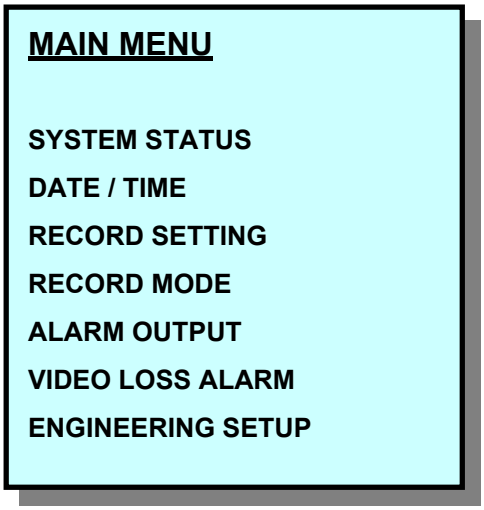
- During recording, all items under the **Main Menu** may not be accessed to make adjustments, except **System Status** and the **Recording Mode**.

7. Menu Set Up

7.1 Enter Main Menu

Press the **<MENU>** key to enter the **Main Menu**, using the cursor, which can be moved up and down by the **<↔>、<↕>** keys.
All of the items in the main menu contain several sub menus which will be described step-by step in the following section.

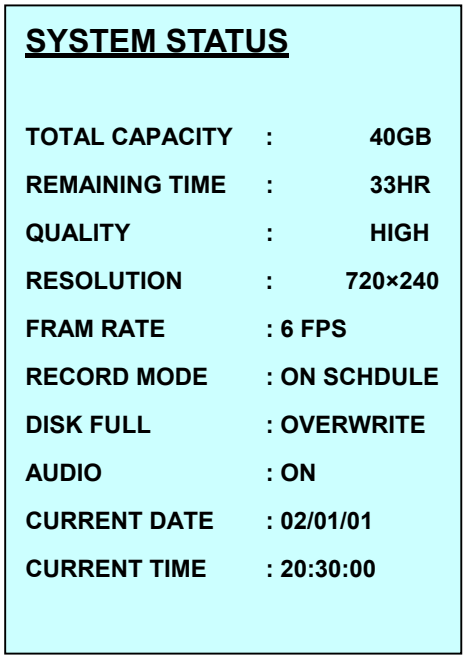
Press **<ENTER>** key to enter the menu.
Press **<EXIT>** key to return to the previous page.
Press **<STOP>** key to skip over the main menu (Image display).



7.2 System Status

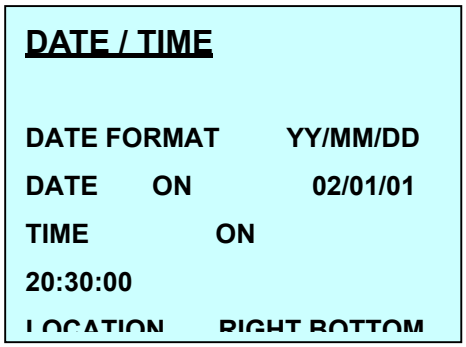
When entering the main menu, select **System Status**.

Press **<ENTER>** key to enter the menu.
Press **<EXIT>** key to return to the previous page.
Press **<STOP>** key to skip over the main menu (Image display).



7.3 Date / Time

When entering the main menu select **Date / Time** and press the **<ENTER>** key:



Press **<←>、<→>** key to move the cursor

Press **< + >、< - >** key to make changes

Press **<EXIT>** key to return to the previous menu.

Press **<STOP>** key to skip over the main menu (Image display).

Time and date for the on-screen calendar and clock is set from this menu.

Date Format：

The date format can be one of the following：

a. YY/MM/DD： (year – month – day)

b. MM/DD/YY： (month – day – year)

c. DD/MM/YY： (day – month – year)

Date：

Toggles the date for the monitor display ON/OFF.

Time：

Toggles the date for the monitor display ON/OFF.

Location：

Set the location to display time and date. The position can be one of the following:

a. LEFT TOP
b. RIGHT TOP
c. LEFT BOTTOM
d. RIGHT BOTTOM
e. TOP
f. BOTTOM

- **When recording, date / time will be stored together with the image. Please try and prevent the constant changing of date / time setup. Thus, to prevent any unnecessary error to occur.**

7.4 Record Setting

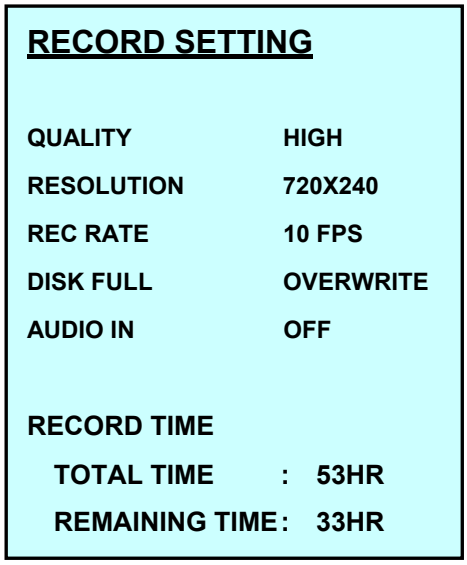
When entering the main menu, select **Record Setting** and press the **<ENTER>** key to enter the menu：

Press **<←>、<→>** key to move the cursor

Press **< + >、< - >** key to make changes

Press **<EXIT>** key to return to the previous page.

Press **<STOP>** key to skip over the main menu (Image display).



Quality：

Three choices to select from:

High：Large file capacity and high image quality display.

Mid：Medium file capacity and medium image quality display.

Low：Small file capacity and low image quality display.

Resolution：720 × 240 or 360 × 240.

REC Rate：Press **< + >、< - >** key to adjust the recording rate.

When Quality setting is HIGH:720x240：1~6 FPS

360x240：1~9 FPS

When Quality setting is Mid or Low:720x240：1~10 FPS

360x240：1~15FPS

Disk Full：

Overwrite：When the disk is full it starts to overwrite the information from the beginning

Stop : When the disk is full it stops recording (screen display disk full message warning).

Audio In：

ON ：Audio recording “ON”.

OFF：Audio recording ”OFF”.

Record Time：

Total Time：According to resolution, the HDD Capacity and the recording rate reflects the total available recording time.

Remaining Time：According to resolution, the HDD Capacity and the recording rate reflects the remaining recoding time.

7.5 Record Mode

In the **Main Menu** move the cursor toward **Record Mode**, press **<ENTER>** key to enter the recording mode display:

RECORD MODE

SCHEDULE RECORDING

REC	BEGIN / END
OFF	20:00 / 08:00

MOTION DETECTION RECORDING

REC	BEGIN / END	SEN	GRID
OFF	20:00 / 08:00	3	SET

SENSOR INPUT RECORDING

REC	BEGIN / END	SEN	TYPE
OFF	20:00 / 08:00	3	NC

POST ALARM TIME : 10 SEC

Press **<←>、<→>** key to move the cursor.

Press **< + >、< - >** key to make changes.

Press **<EXIT>** key to return to the previous page.
Press **<STOP>** key to skip over the main menu(Image display).

Three types of recording mode：

a. Schedule Recording: According to the schedule time you can set the camera for continuous recording.

REC：

ON ： For **Schedule Recording** “ON”.

OFF： For **Schedule Recording** “OFF”.

* **<STOP>** key does not work during **Schedule Recording.**

BEGIN / END：

Begin： Starting time for recording.

End : Ending time for recording.

* **Example:** For 24H recording, the settings of the begin time must be the same as the ending time (enter 06:00 am – 06:00am)
For other time settings, recording time from 08:00 am to 21:00 pm (enter 08:00 – 21:00).

b. Motion Detection Recording: According to the schedule time you can set the camera for motion detection recording.

REC：

ON : For **Motion Detection Recording** “ON”.

OFF： For **Motion Detection Recording** “OFF”.

* **<STOP>** key does not work during **Motion Detect Recording.**

BEGIN / END：

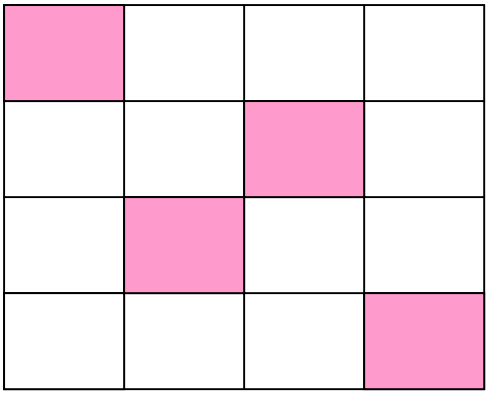
Begin： Starting time for recording.

End : Ending time for recording.

* **Example:** For 24H recording, the settings of the begin time must be the same as the ending time (enter 06:00 am – 06:00am)
For other time settings, recording time from 08:00 am to 21:00 pm (enter 08:00 – 21:00).

SEN (Motion Sensitivity) : There are 5 levels of sensitivity for motion detection.
(1: High motion sensitivity rate, 5: Low motion sensitivity rate).

Grid (Motion Activity Grid)：Move the cursor to **Activity Grid**, then press **<ENTER>** key to enter the **Motion Activity Grid** display **:**
(Red block indicates the area under motion detection)



Press **<←>**、**<→>** key to move the cursor

Press **< + >**、**< - >** key to switch ON/OFF the motion detection area.

Press **<EXIT>** key to return to the previous page.
Press **<STOP>** key to skip over the main menu.

c. **Sensor Input Recording:** According to the schedule time, to set the camera for sensor input recording.

REC：

ON ： For **Sensor Input Recording** “ON”.

OFF： For **Sensor Input Recording** “OFF”.

* **<STOP>** key does not work during **Sensor Input Recording.**

BEGIN / END：

Begin： Starting time for recording.

End ： Ending time for recording.

* **Example:** For 24H recording, the settings of the begin time must be the same as the ending time (enter 06:00 am – 06:00am)
For other time settings, recording time from 08:00 am to 21:00 pm (enter 08:00 – 21:00).

SEN (Sensor Sensitivity)：1~ 5 (Adjustable)

1: 0.2 Sec.

(Sensor triggers the alarm and starts recording after 0.2 second)
2: 0.5 Sec.
(Sensor triggers the alarm and starts recording after 0.5 second)
3: 1 Sec.
(Sensor triggers the alarm and starts recording after 1 second)
4: 2 Sec.
(Sensor triggers the alarm and starts recording after 2 second)
5: 5 Sec.
(Sensor triggers the alarm and starts recording after 5 second)

Sensor Type：

NC → Normal-close sensor (TTL level input **)**
Set to NC, to trigger the recording when the sensor has been opened.

NO → Normal-open sensor (TTL level input **)**
Set to NO, to trigger the recording when the sensor has been closed.

Post-alarm Time：The extra recording time, straight after when the sensor recording event ended (Time setting range from 0~99 Sec).

7.6 Alarm Output

In the main menu select **Alarm Output**, and press the **<ENTER>** key to enter the menu :

ALARM OUTPUT SETUP

BUZZER : OFF PERIOD : 01 MIN
RELAY : ON PERIOD : 02 MIN

Press **<←>、<→>** key to move the cursor

Press **< + >、< - >** key to change the settings.

Press **<EXIT>** key to return to previous page.

Buzzer : Set “ON” to turn the internal buzzer on if a valid event occurs.

Set “OFF” to mute the buzzer.

Relay : Set “ON” to turn the relay on if a valid event occurs.

Period : Constant alarm timing (1-15 Min. settings).

Three kinds of event :

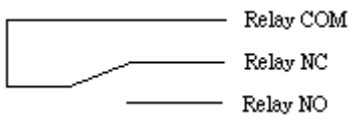
① Motion Detect

② Sensor Trigger

③ Video Loss

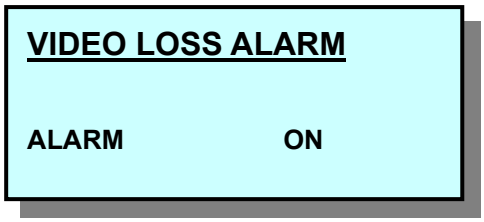
 Alarm Out (Relay):

Two types of Alarm Out signal are provided : Relay NC and Relay NO.



7.7 Video Loss Alarm

In main menu, move the cursor to **Video Loss Alarm** and press the **<ENTER>** key to enter the **Video Loss Setup** menu :



Press **<←>**、**<→>** key to move the cursor

Press **< + >**、**< - >** key to change the value

Press **<EXIT>** key to return to the previous page

Detection :

Video loss display function exists on both Alarm trigger function ON/OFF.

ON : Alarm trigger function “ON”.

OFF : Alarm trigger function “OFF”.

7.8 Engineering Setup

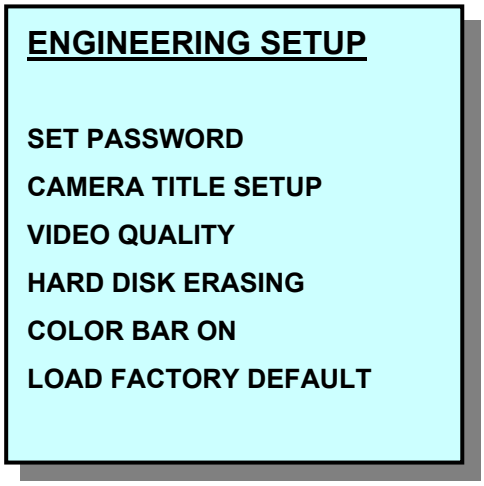
In the main menu select **Engineering Setup**.

Press **<ENTER>** key to enter the menu.

Press **<←>**、**<→>** key to move the cursor.

Press **< + >**、**< - >** key to change the value settings

Press **<EXIT>** key to return to the previous page



7.8.1 Set Password

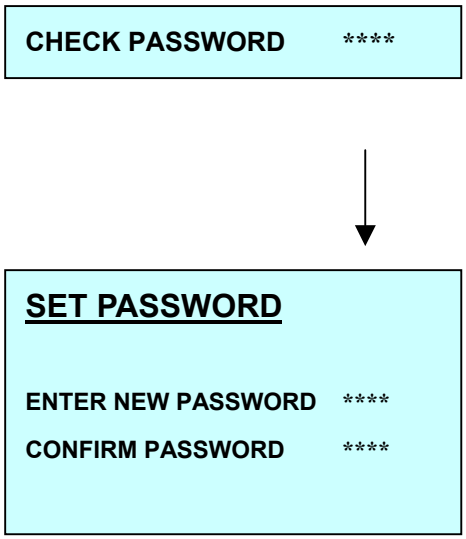
Move the cursor to **Set Passwords**.

Press the **<ENTER>** key to enter the menu.

Press **<←>、<→>** key to move the cursor.

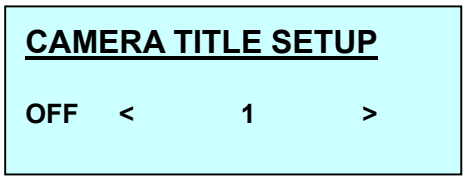
Press **< + >、< - >** key to change the password.

Press the **<ENTER>** key again and the system will request the old password, and then the new password. After the change press the **<ENTER>** key once more to confirm.



7.8.2 Camera Title Setup

Move the cursor to **Camera Title Setup** and press the **<ENTER>** key to enter the menu. The camera titles can be up to eight (8) characters in length and configured using the following available characters: A-Z 0-9.



Press **<←>、<→>** key to move the cursor

Press **< + >、< - >** key to change the setting values

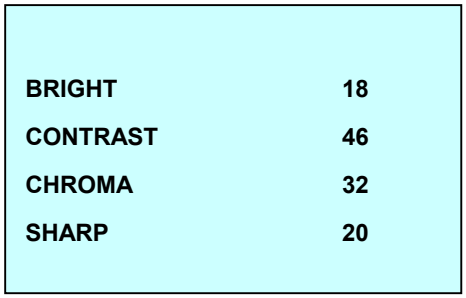
Press the **<EXIT>** key to return to the previous page

ON ：To show the camera title

OFF **:** To hide the camera title

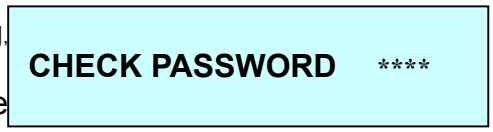
7.8.3 Video Quality

Adjust camera brightness, contrast, color and chroma.

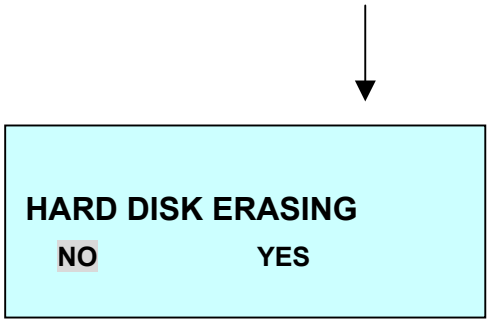


7.8.4 Hard Disk Erasing

Move the cursor to **Hard Disk Erasing**, press the **<ENTER>** key to enter the menu :

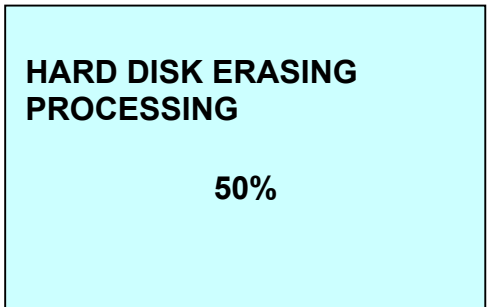


The password should be entered before formatting the data in the hard disk, then press the **<ENTER>** key to enter the **Hard Disk Erasing** display :



To Reconfirm:

Select "**YES**", then press the **<ENTER>** key to erase the data in

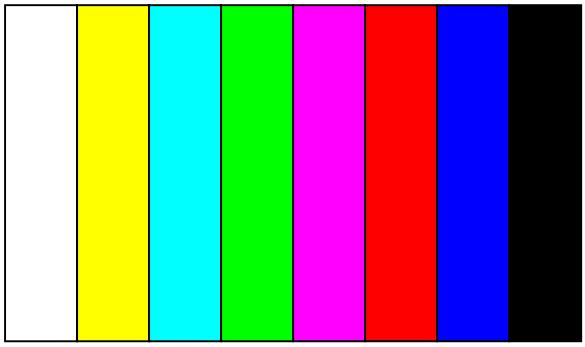


the hard disk.

Press the **<EXIT>** key to return to the previous page.

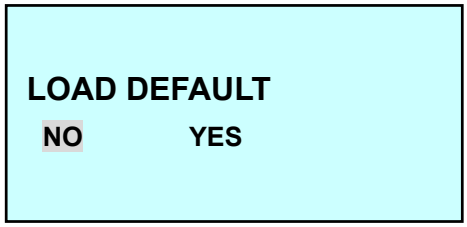
7.8.5 Color Bar

Color Bar is helpful to user in monitor settings.



7.8.6 Load Factory Default

To load the factory defaults, please press "**YES**", than press the **<ENTER>** key to complete the setup procedure.
Press the **<EXIT>** key to return to the previous page.



8. System Installation Diagram