



DIGITAL VIDEO RECORDER

VR-616

INSTRUCTIONS



Thank you for purchasing this JVC product. Before operating this unit, please read the instructions carefully to ensure the best possible performance.

For Customer Use:

Enter below the serial No. which is located on the bottom of cabinet. Retain this information for future reference.

Model No: VR-616

Serial No:

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1. IMPORTANT SAFEGUARDS

1. Read all of these instructions.
2. Save these instructions for later use.
3. All warnings on the product and in the operating instructions should be adhered to.
4. Unplug this appliance system from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
5. Do not use attachments not recommended by the appliance manufacturer as they may cause hazards.
6. Do not use this appliance near water " for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.
7. Do not place this appliance on an unstable cart, stand, or table. The appliance may fall, causing serious injury to a child or adult, and serious damage to the appliance.

Use only with a cart or stand recommended by the manufacturer, or sold with the appliance.

Wall or shelf mounting should follow the manufacturer instructions, and should use a mounting kit approved by the manufacturer.

An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

8. Slots and openings in the cabinet and the back or bottom are provided for ventilation, and to insure reliable operation of the appliance and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the appliance on a bed, sofa, rug, or other similar surface. This appliance should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.

9. This appliance 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 supplied to your home, consult your dealer or local power company. For appliance designed to operate from battery power, refer to the operating instructions.

10. This appliance system is equipped with a 3-wire grounding type plug (a plug having a third (grounding) pin). This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace obsolete outlet. Do not defeat the safety purpose of the grounding plug.

11. For added protection for this 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 product due to lightning and power-line surges.

12. Do not allow anything to rest on the power cord. Do not locate this appliance where the cord will be abused by persons walking on it.

13. Follow all warnings and instructions marked on the appliance.

14. Do not overload wall outlets and extension cords as this can result in fire or electric shock.

15. Never push objects of any kind into this appliance through cabinet slots 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 appliance.

16. Do not attempt to service this appliance yourself as opening or removing covers may touch dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

17. Unplug this appliance from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- a. When the power cord or plug is damaged or frayed.
- b. If liquid has been spilled into the appliance.
- c. If the appliance has been exposed to rain or water.
- d. If the appliance does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the appliance to normal operation.
- e. If the appliance has been dropped or the cabinet has been damaged.
- f. When the appliance exhibits a distinct change in performance this indicates a need for service.

18. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.



19. Upon completion of any service or repairs to this appliance, ask the service technician to perform routine safety checks to determine that the appliance is in safe operating condition.



PORTABLE CART WARNING
(symbol provided by RETAC)



S3125A

SAFETY PRECAUTIONS (VR-616U)

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

	ATTENTION RISQUE D'ELECTROCUTION NE PAS OUVRIR	
<p>ATTENTION: POUR EVITER TOUT RISQUE D'ELECTROCUTION NE PAS OUVRIR LE BOITIER. ACUCUNE PIECE INTERIEURE N'EST A REGLER PAR L'UTIUSEUR. SE REFERER A UN AGENT QUALIFIE IN CAS DE PROBLEME.</p>		



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 product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



Le symbole de l' éclair a l' interieur d' un triangle equilateral est destine a alerter l' utilisateur sur la presence d' une tension dangereuse non isolee dans le boitier duproduit. Cette tension est sufflsante pour provoquer l' electrocution de personnes



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.



Le point d' exclamation a l'interieur d' un triangle equilateral est destine a alerter l' utilisateur sur la presence d' openations d' entretien importantes au sujet desquelles des renseignements se trouvent dand le manuel d' instructions.
Ces symbols ne sont utilizes qu'aux Etats-Unis.

POWER SYSTEM

Connection to the mains supply
This unit should be used with 120V AC only.

CAUTION:

To prevent electric shocks and fire hazards, DO NOT use any other power.

NOTE:

The rating plate (serial number plate) is on the top of the unit.

This Class A digital apparatus complies with Canadian ICES-003.

INFORMATION

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

SYSTEME D'ALIMENTATION

Raccordement à la principale source d'alimentation
Ce magnetoscope ne doit etre utilize que sur du courant alternatif en 120V.

ATTENTION:

Afin d'eviter tout resque d'incendie ou d'electrocution, ne pas utiliser d'aufres sources d'alimentation electrique.

REMARQUE:

La plaque d'identification (numero de serie) se trouve dur le dessus de l'appareil.

Cet appareil numérique de la Class A est conforme à la norme NMB-003 du Canada.

CAUTION

CHANGES OR MODIFICATIONS NOT APPROVED BY JVC COULD VOID USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

SAFETY PRECAUTIONS(VR-616E)

POWER SYSTEM

Connection to the mains supply

This unit operates on voltage of 220 V to 240 V AC, 50 Hz/60 Hz.

Note:

The rating plate and the safety caution are on the top of the unit.

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Warning Notice

FOR YOUR SAFETY (Australia)

1. Insert this plug only into effectively earthed three-pin power outlet.
2. If any doubt exists regarding the earthing, consult a qualified electrician.
3. Extension cord, if used, must be three-core correctly wired.

IMPORTANT (In the United Kingdom)

Mains Supply (AC 230 V)

WARNING – THIS APPARATUS MUST BE EARTHED

The wires in this mains lead are coloured in accordance with the following code;

GREEN-and-YELLOW : EARTH

BLUE : NEUTRAL

BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked with the letter E or by the safety earth symbol or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or which is coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

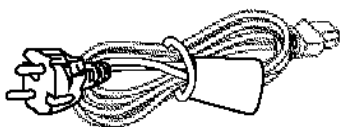
Caution for AC Power Cord

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

Appropriate AC Power Cord must be used in each local area.

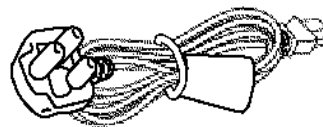
FOR CONTINENTAL EUROPE, ETC.

Not to be used in the U.K.



FOR U.K. ONLY

If the plug supplied is not suitable for your socket outlet, it should be cut off and appropriate one fitted.



SAFETY PRECAUTIONS(VR-616U/E)

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

To prevent electric shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified service personnel.

The OPERATE button does not completely shut off mains power from the unit, but switches operating current on and off.

●Place of storage and use

Please avoid storing or using this DVR in the following places:

- Extremely hot or cold places beyond the allowable temperature for operation (5°C (41°F) - 40°C (104°F)).
- Humid or dry places beyond the allowable humidity range for operation (30 % - 80 % RH).
- Dusty or sandy places.
- Places exposed to oil, smoke or steam, such as the kitchen vicinity.
- Vibrating or unstable places.
- Places prone to condensation.
- Places that generates strong magnetic fields, e.g., transformer or motor.
- Places near devices that generate electric waves, e.g., transceiver or mobile phone.
- Places that generate radiation, X-rays or corrosive gases.

●Handling the unit

- Please do not place heavy objects on the DVR, like a monitor or TV.
- Please do not block the ventilation openings.
- Avoid violent shocks to the unit. Do not drop the unit.
- Do not stack up the equipment to prevent temperature within from rising.
- Do not stand this equipment vertically during use.
- Handle this equipment with care. Do not subject it to physical shock.
- Do not insert foreign object into this unit as this may cause malfunction or electric shock.
- Please keep the mobile rack into the compartment. As injury may result from fingers getting clamped.

• Maintaining the unit (Please turn off the power before performing maintenance work.)

Please wipe the unit with a soft cloth. Do not wipe it with thinner or benzene lest the surface melts or becomes dull.

For stubborn stains, wipe first with a water-dilluted neutral detergent and then wipe dry.

- Please use the supplied power cord. Using a different type or damaged cord may cause fire or electric shock.
- To save energy, be sure to turn off the system when not in use.
- Do not use the power cord supplied with this equipment on other devices.

• Batteries (remote controller)

- Please use AAA batteries.
- Please use 2 new batteries. (Do not mix new and old batteries.)
- Please load the batteries correctly according to the + and - signs.
- Please read the precautions printed on the batteries.
- If leaked battery fluid gets in eyes, rinse with clean water and consult a doctor.
- If fluid leaks from the battery, please wipe the battery compartment thoroughly.
- If the fluid comes into contact with your body, please rinse the affected parts with water thoroughly.

PRECAUTIONS

WARNING

It should be noted that it may be unlawful to re-record pre-recorded tapes, records, or discs without the consent of the owner of copyright in the sound or video recording, broadcast, or cable programme and in any literary, dramatic, musical or artistic work embodied therein.

• Hard-disk

The hard-disk is a consumable item. Replacement is recommended after 10000 hours of use (if used in a 25°C environment). For information on maintenance planning and costs, consult your nearest JVC dealer.

• Handling of the Hard-disk

Please do not extract the removable Hard-disk or do not move this equipment for 15 seconds after OPERATE OFF. It may cause a failure of the Hard-disk.

- Do not expose the equipment to physical shock during transport. In particular, do not move the equipment during recording or playback.
- Please note that we will not provide compensation for any failure during recording or playback due to defects in this equipment or the hard disk drive.
- TV broadcast or other video (audio) recordings are for personal use only. Unauthorized use of these materials is strictly prohibited.
- Please note that recorded images will be erased when replacing hard disks or upgrading firmware.
- To make back-up with CD-RW etc is strongly recommended if the important data seems to be recorded.

* All Product names stated in this manual are trademarks or registered trademarks of their respective companies. Marks such as ©, ® are omitted in this manual.

2. Part Names and Features

2.1 Basic Organization of DVR System

: In this Instructions, Digital Video Recorder is written as "DVR".
 Contents and shape can be different.



VR-616



Lock Key
 Hard Rack Screw



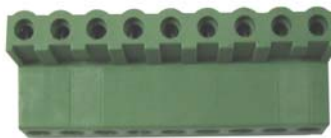
Rack Mount Bracket
 Rack Handle



RS-485



Alarm Out



Alarm In



CD-ROM



User Manual



Rubber Foot



Power Cord



Remote Control Unit
 Battery

2.2 Features

- 1) High quality digital recording
Output and playback High-Resolution digital recording by using Wavelet compression.
- 2) Simple operation
Simple operation by jog /shuttle.
- 3) Simple setting
Enables simple installation and operation with basic setting and camera inputs.
- 4) Remote data back up
It is possible to back up and playback by using client program via network.
- 5) Backup (IEEE1394, USB)
Video images may be backed up to a compatible IEEE 1394 device such as an external HDD or CD-RW device. In particular it is possible to extend HDD up to 4 pieces. It is also possible to back up still images by using USB FDD or USB memory via USB port.
- 6) Multi screen monitoring function
Many multi screen monitoring modes are available such as 1/4/6/8/9/13/16 /user/ZOOM screen.
- 7) Remote control/ view
Cameras can be remotely controlled and images can be viewed from anywhere through a web browser over a private line or via the Internet without any special software.
If the HDD set to "Backup", you will not be able to use playback (P/B) remote security function.(Live monitoring is possible through a web browser)
- 8) Audio Recording and Playback
One channel of audio may be selected for recording and playback with a video channel.
- 9) Diverse image backup function
Massive amounts of video can be stored in an internal HDD, removable HDD or external IEEE1394 HDD.
- 10) Motion detection and Alarm recording function
Detects optional field, sensitivity, and sensing speed of each channel, and able to record automatic register by connection with an outside sensor.
- 11) Alarm and Search Functions
Recorded images can be searched using search functions based upon time, date, alarm and motion detection functions.
- 12) In/output contact point control
Able to add In/Output Alarms via connection to a contact point In/Output terminal.
- 13) Recording and set-up options
All aspects of recording may be selected such as recording channel, fields per second, image resolution and covert channel recording.
- 14) Diverse recording functions
Recording is possible by Manual, Alarm, and Schedule modes.

15) Automatic check and recovery function

The system is designed for continuous, fault-free operation with built-in, self-monitoring functions that monitor each component of the system and will automatically restart into the previous mode if a system failure is encountered.

16) Camera control of popular dome models

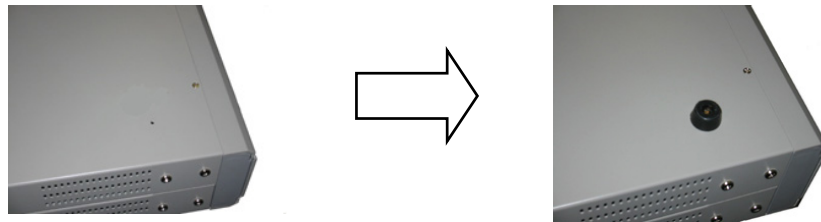
Able to control a multitude of external cameras through the RS-485 port.

2.3 Preparation of installation

■ Putting on a level place

(1) Attach rubber feet.

- Attach 4 rubber feet in the bottom surface of the equipment with 4 screws provided (M3 x 11mm).



■ Mounting to a Rack

(1) Assemble 2 rack-mounting brackets

- Fasten the rack-mounting handle to the rack-mounting angles using 2 screws provided (M4 x 10mm). Assemble 2 brackets in the same procedure.

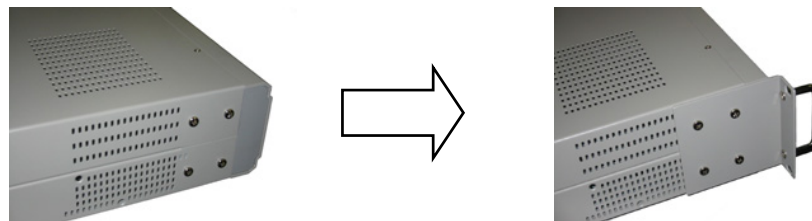
(2) Remove 8 screws





- Remove the 8 screws at the right and left side surface of the equipment. (M4 x 12mm).

(3) Mount the rack-mounting bracket to the equipment

- Fasten 2 rack-mounting bracket (Assembled in the procedure (1)) to the equipment using 8 screws (Removed in the procedure (2)).

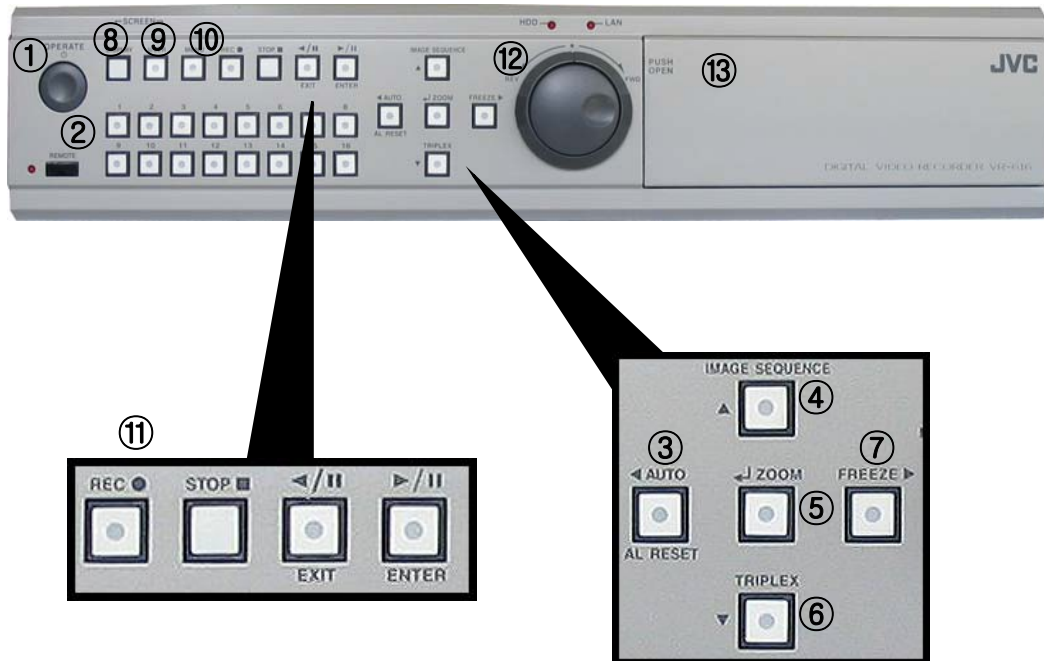
(4) Mount the equipment to the Rack



Provided screws			
	For rack-mounting angle M4 x 12mm (4 EA) (attached to the equipment previously)		For rack-mounting handle M4 x 10mm (4 EA)
	For rubber feet M3 x 11mm (4 EA)		For removable HDD M3 x 8mm (4 EA)

2.4 Part Names and Description

• Front



① Operate Switch

: Operate ON/OFF switch. Operate on/off by pressing this button for about 5 seconds. During system starting, it is displayed "16 CH Digital Video Recorder" and "Preparing system. Please wait a moment." -> "Waiting to detect 1394 HDD...". Please wait for a while to starting.

② Channel Selection Buttons (CH1 – CH16)

: These buttons are used to select the screen monitors and to change the channel settings at the menu.

③ AUTO Button

: The input channel is automatically switched in proportion to the speed setting at the menu.

ALARM RESET Button

: This button is to stop the alarm out.

◀ (left) Button

: Menu Navigation Button. Moves cursor to the left.

④ IMAGE SEQUENCE Button

: This button is for replay PB screen to IMAGE SEQUENCE mode.

▲ (up) Button

: Menu Navigation Button. Moves cursor up.

⑤ ZOOM Button

: This is used to zoom a freeze-frame in live or playback mode. Selected screen is X2.

ENTER Button

: This is for selecting set-up Menu.

⑥ TRIPLEX Button

: This button is for replay PB screen to TRIPLEX mode.

▼ (down) Button

: Menu Navigation Button. Moves cursor down.

⑦ Freeze Button

: This button is for seeing monitoring and PB screen as pause screen.

Freeze image backup button

: It is for backup freeze image at external FDD or USB memory.

▶ (right) Button

: Menu Navigation Button. Moves cursor to the right.

⑧ Display Button

: This button is for selection of the various on screen display options available.

⑨ USER Button

: This is for user's screen mode. You can select one split display out of 8 screen then you can organize the screen to your personal preference.

⑩ MENU Button

: The menu button allows scrolling through the available on screen menu.

⑪ REC, STOP, Reverse Playback (EXIT), PLAY Button (ENTER)

REC : This is for recording.

STOP : This is for stop PB.

Reverse Playback (EXIT) : This is for reverse PB. It is also for finishing menu setup, moving to previous menu or erase wrong character.

PLAY Button (ENTER) : This is for playback and set-up menu.

⑫ Jog Shuttle (REV, CUE, Up, Down)

: It is possible to 'quick search' during playback and also used to change the modes of the menu.

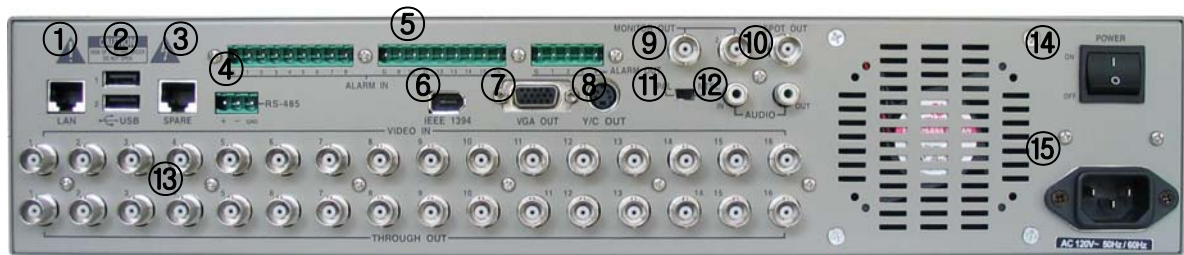
Shuttle : This is for quick search when PB and it is used for change MENU.

JOG : This is for slow search when PB and it is used for moving MENU' s cursor.

⑬ Backup HDD (Removable HDD)

: This is removable HDD and it is used for Backup or Main.

• Rear



① LAN : Enables screen search and control via Network. (Please use a category 5 cable with a shield.)

② USB Port 1,2 : For backup with external FDD or memory stick. It does not work both USB1 & 2 at the same time. Please use one of them.

! Please turn off the power when you connect external USB with DVR.

③ Spare : This terminal is not used.

④ RS-485 : For connecting with external Pan/Tilt camera. (Please use a twisted-pair cable with a shield.)

⑤ ALARM IN : For alarm input. (Please use a shielded cable.)

ALARM OUT : For alarm output. (Please use a shielded cable.)

⑥ IEEE 1394 Port: Possible to extend storage space or backup by adding external IEEE1394 or CDRW.

! Please turn off the power when you connect external IEEE1394 with DVR.

! If you connect external HDD with external CDRW, impossible to recognize.

⑦ VGA OUT : Possible to connect with computer monitor. (CRT type)
Please set-up in Menu before use this connector.

⑧ Y/C OUT : Outputs contents of monitor output as a S-VIDEO signal.

⑨ MONITOR OUT 1,2 (Composite) : Menu appears at the time of menu setting and displays when screen search or recording.

⑩ SPOT OUT (Composite) : Outputs video which is set-up from the menu.

⑪ MODE(PAL/NTSC) : Selects input video signal mode.

If you change PAL/NTSC, once it carries out operate-off. Operate-on is carried out, and a message "Video mode was changed!" is displayed and it shows a subsequent message. Select "O.K.", changes video signal mode.

! When PAL/NTSC is changed, former record data is deleted!
An administrator password is reset when the PAL/NTSC mode is changed.
Please disable a password setting before changing the PAL/NTSC mode. When PAL/NTSC mode is changed with a password setting enable, please use a default password "1234".

⑫ AUDIO : I/O for audio recording/playback.

⑬ VIDEO IN BNC & THROUGH OUT (CH1 ~ CH16)
: Inputs asynchronous video signal 1.0Vp-p.(75 ohm)
: Loop out is changed to HI-Z automatically.

⑭ POWER Switch
: This is the main power switch.

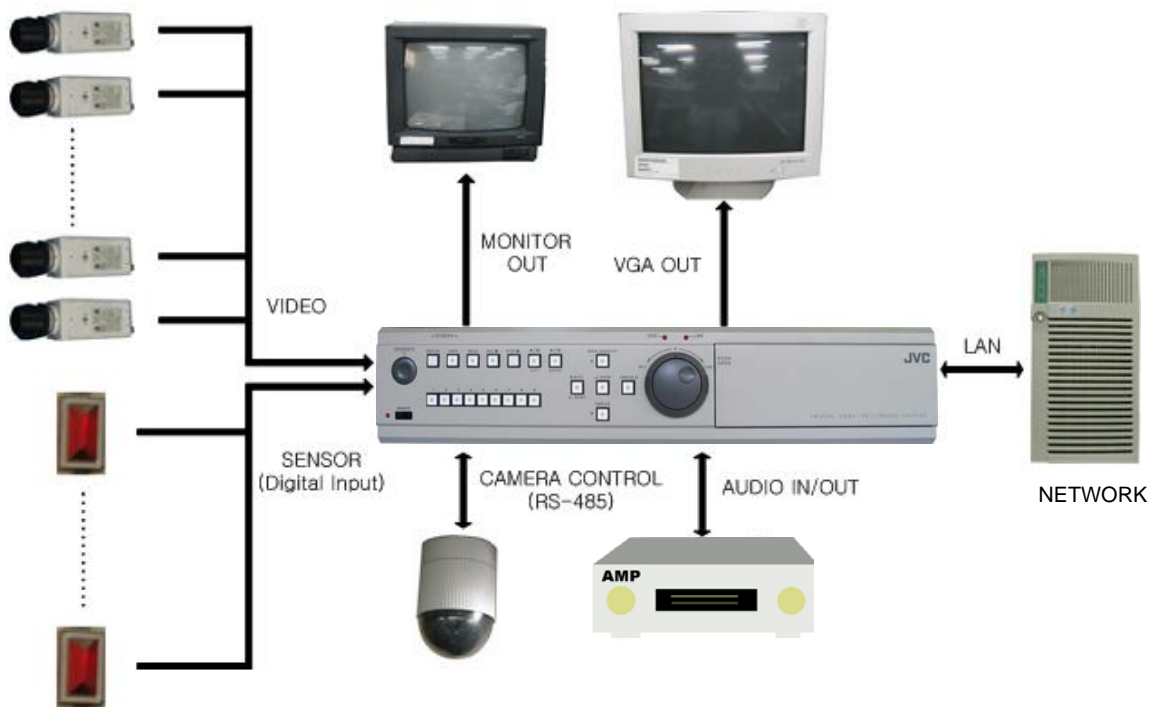
⑮ AC INLET : For connecting with power cord.

3. Explanation and Application

3.1 Basic Schematic of the DVR System

: This system can record up to 16 composite video signals.
Ability to check multiple screens during playback by using monitors & VGA units. It supports screen search, monitor, and remote control through the Network.

3.1.1 Basic Schematic



Video signal of the input channel is 1.0 V_{p-p} on a 75Ω load. THROUGH OUT is changed to Hi-Z Automatically.

3.2 Basic Connections



LAN Connector



USB Connector



RS-485 Connector



Alarm IN Connector



Alarm OUT Connector



IEEE 1394 Connector



VGA OUT Connector



Y/C OUT Connector



VIDEO IN Connector



MONITOR OUT 1,2 Connector



SPOT OUT Connector



AUDIO IN Connector



AUDIO OUT Connector

3.3 Pan/Tilt Camera Connection and Control

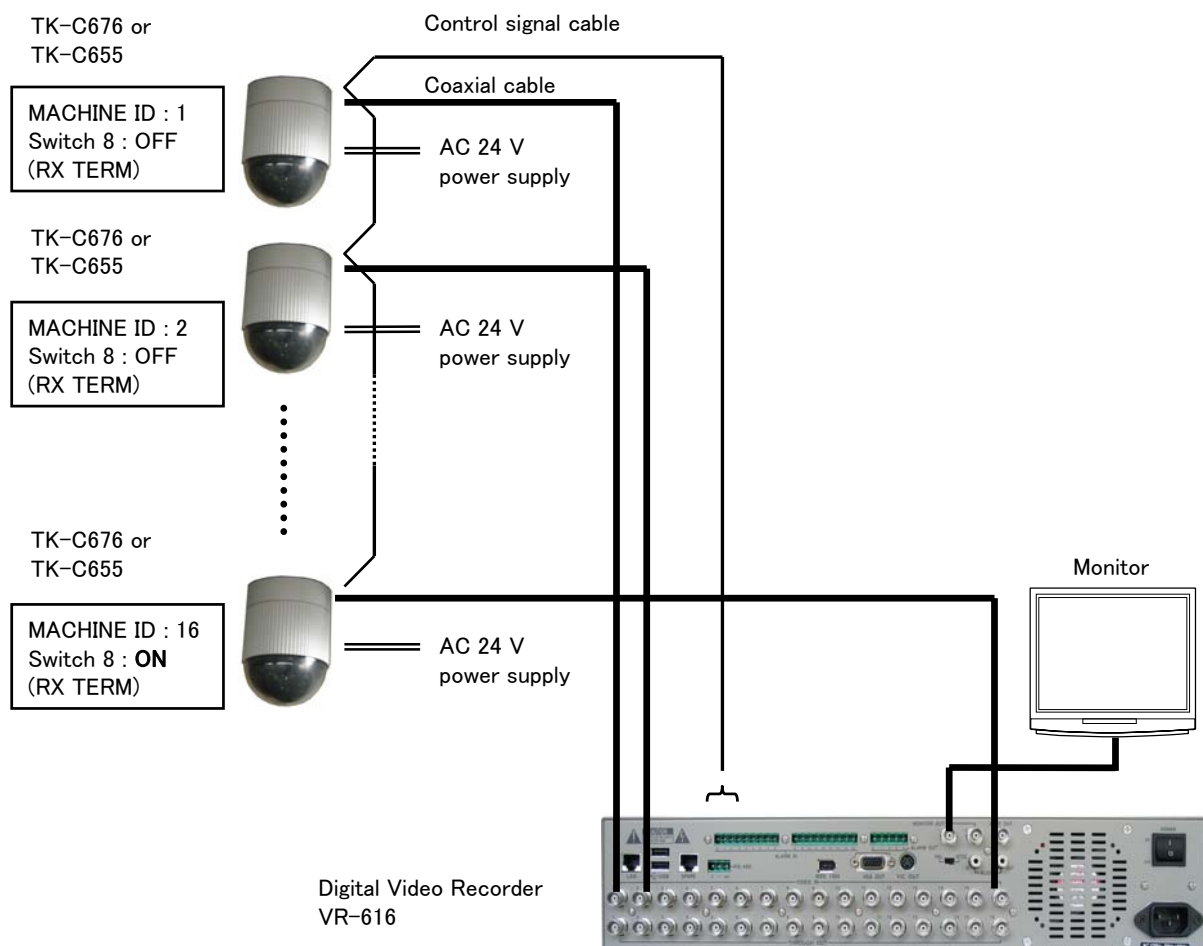
It is possible to control the Pan/Tilt camera without special devices.
 The Pan/Tilt camera supports RS-485 and is given an ID for parallel connection.
 Easy to install from the menu screen and possible to control by using the Jog Shuttle.

Recommended Cameras:

Manufacturer	Model
JVC	TK-C676
JVC	TK-C655

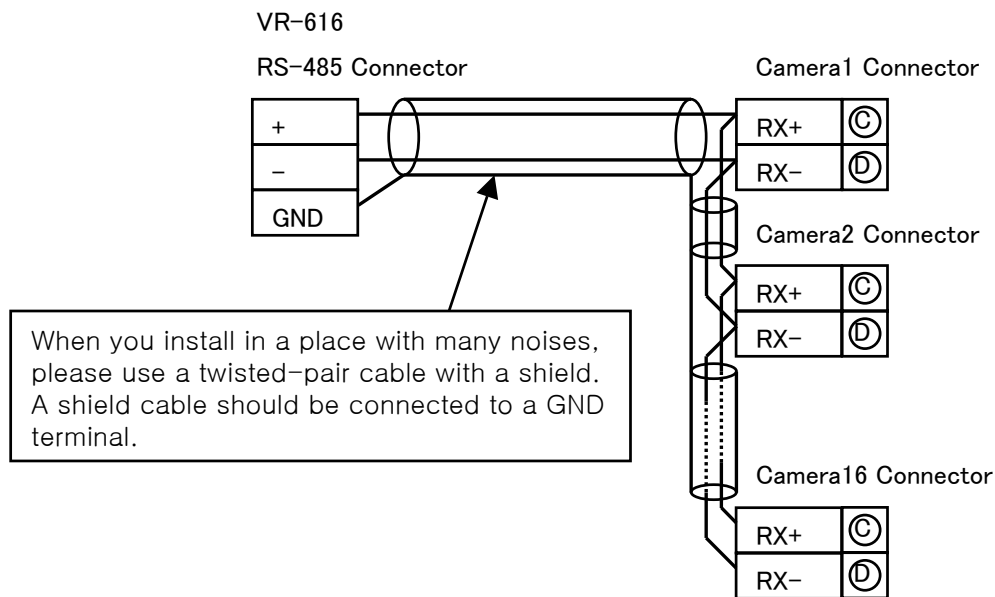
3.3.1 The example of connection with TK-C676 or TK-C655

Linked with a power connection, control terminal connection, and video signal output connection. The following figure is the example of connection with 16 sets of TK-C676 or TK-C655.



- Camera power connection.
- Control terminal connection (RS-485) : Please use a twisted-pair cable. Connect a +terminal (TX+) / -terminal (TX-) to the RX+ / RX-terminal of a Pan/Tilt camera. The camera connected at the end should set-up a terminus (110 Ω).
- Video signal connection (Composite)
 : Checks video mode (NTSC/PAL) and inputs video signals at each input terminal.


● Connection of RS-485 Control signal cable



3.3.2 Setting values of TK-C676 or TK-C655

Item	Value
Switch 4	ON
Switch 5	ON
Switch 8	Terminal equipment is set to ON. Other equipments are set to OFF.
ID	Install ID value independently.

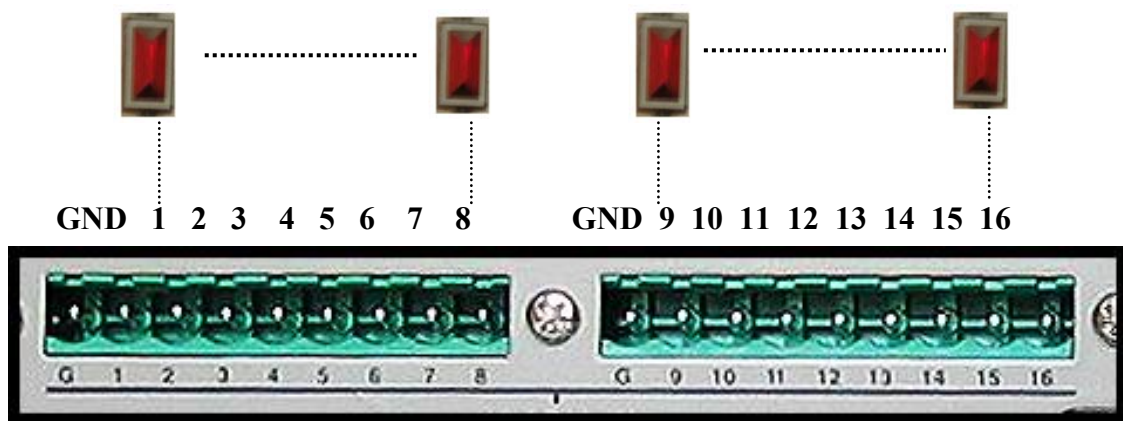
- The functions can be used by this equipment are PAN/TILTE/ZOOM/FOCUS/AUTO FOCUS. (A setup of a home position, a preset position, etc. cannot be performed) In addition, in order to perform a home position setup and a camera image setup in advance, it is possible to use and set-up by remote controler of RM-P2580 grade. Please read the Instructions of RM-P2580.
- About setting values of VR-616, please refer to 5.1.2 Camera details and 5.1.3 Pan/Tilt Model Select.
- For information of other model, consult your nearest JVC dealer.

 Please connect the Pan/Tilt camera of the same protocol (Camera Setup -> Pan/Tilt Model Select -> Select Model).

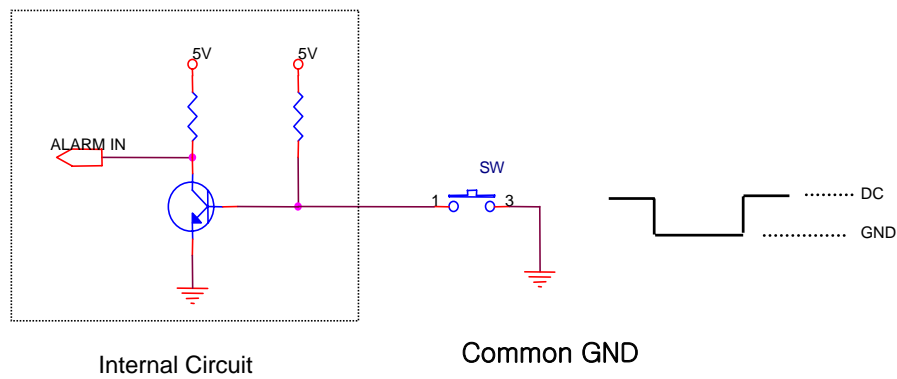
3.4 External Product Connections and Applications

3.4.1 External Product Connection of ALARM INPUT and Application


There are 16 alarm jacks for external devices.
 Able to set-up REC ON/ OFF and Digital out motion according to ALARM IN signals.



Connection Diagram

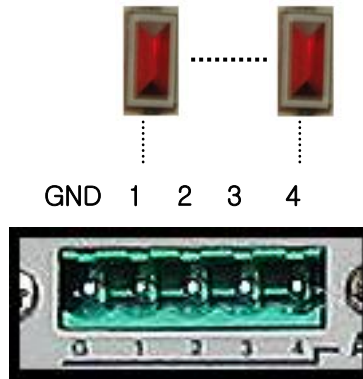


Circuit Diagram

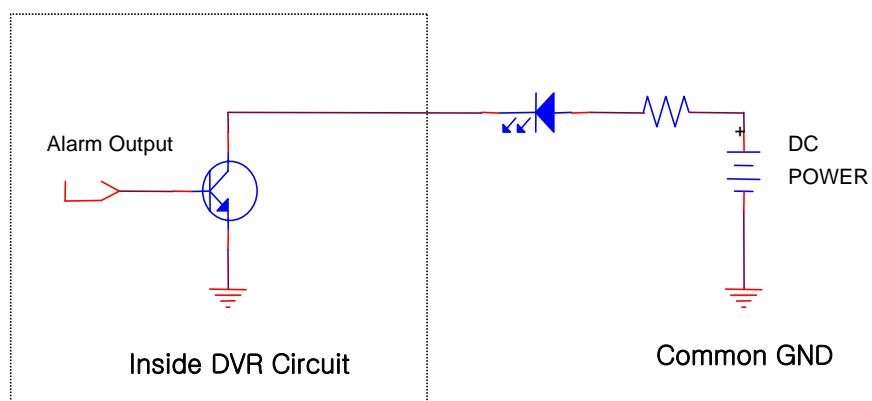
 Each External device which is connected with ALARM IN should be connected with GND and Alarm In.

3.4.2 External Product Connection of ALARM OUT and Application

Supports up to 4 separate alarms for motion control or alarms.
Possible to install output-events to each out terminal from the menu.



Connection Diagram



Circuit Diagram

OUTPUT EVENTS

Digital inputs to alarm 1~ 16, Disk Full, Video Loss, Power Off, Admin. PW Changed, Motion Detect.

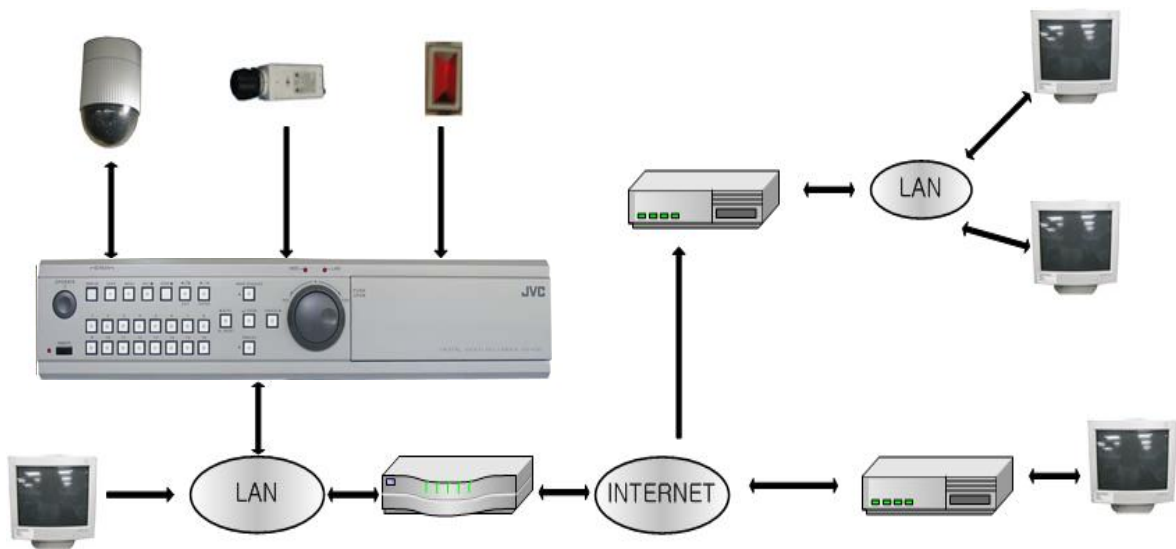
Alarm-out outputs, and open collector state continuously until the alarm is reset.
When connecting to an external device, it is better to connect with the interface circuit.

 Maximum output current is 0.1A. Damage may occur if output is higher!

3.5 Installation and Application for Network Interface

3.5.1 Connection and Installation for Remote Control

Supports Web server, remote control, and remote file transfer due to 10/100mega Ethernet I/F.



Organization of Remote Control

3.5.2 How to Setup Static IP

- 1) Connect Network line, which has a fixed IP, by using the hub.
- 2) set-up system network at the Setup Menu.

Main Menu ► System ► Administration ► Network Setup

- 3) Link web browser which supports JAVA Applets. (MS Internet Explorer 6.0, etc.)

3.5.3 Network Setup

IP Address : ____ . ____ . ____ . ____

Subnet Mask : ____ . ____ . ____ . ____

Gateway : ____ . ____ . ____ . ____

DNS : ____ . ____ . ____ . ____

Web Server Port Number : ____

We highly recommend you consult the Network Manager.



Note

- IP Address : This is the name of the product in TCP/IP.
You can use any IP in one Network.
If you want to link with the Internet, you need an Global IP address to avoid conflict.
- Subnet Mask : It is 32 Bit in length. (= Address Mask)
- Gateway : This is used for connecting to the Network, which has a different structure and Protocol.
- DNS : It is a link system for easy connection to the Internet.
For example, you can use an alphabetic address, e.g. www.company.com instead of a number address.
- We highly recommend you consult the Network Manager.
- Web Server Port Number : This is for connecting external computer from Web Server.
In case of WWW using http, it is used 80 generally.

3.6 Application of Remote Control Software

3.6.1 Using the "remote control software"

This is for viewing live or searching playback screens from a remote location.
 [Quality of the live screen depends on the recording quality and Network condition.]

How to Setup

- 1) Start Web browser.
 (We highly recommend CPU : over 500MHz, RAM : over 64MB,
 OS : Windows 98/ Me/ 2000/ XP, Browser : over Internet Explorer 5.5/ 6.0)
- 2) Enter IP number in the homepage address.
 (Use Domain name)



- If the icons are not displayed as change the screen, please check the menu bar on the web site as followings.
 Tools → Internet Options → General → Temporary Internet Files Settings → Check for newer versions of stored pages → Automatically
- If Record/Web Select is not selected on the menu, live monitoring is not possible to see on the Web Browser.
- When selecting divided screen, the screen display should delay due to network condition.
- Please set to the "on-line" mode of Internet Explorer. It does not work "off-line mode".

3.6.2 Web Browser

This is for wire internet by using computer.



Web Browser

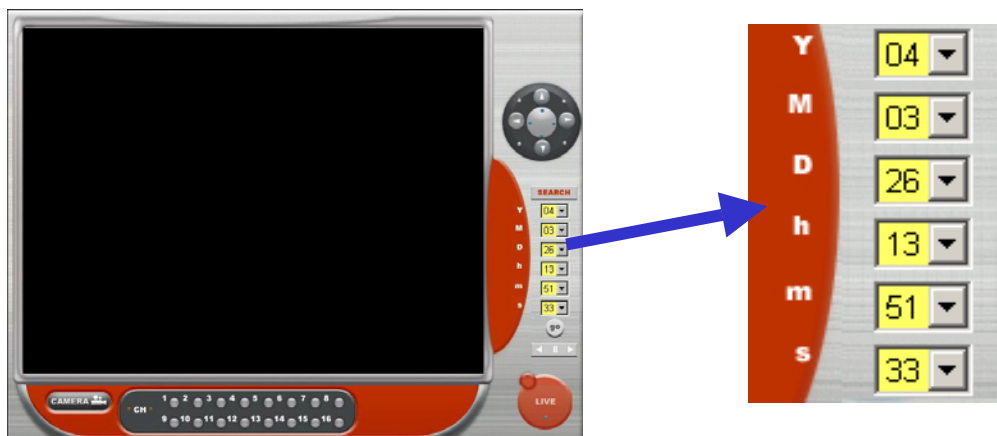
3.6.3 Live Screen Search



This is for searching 1, 4, 9 or 16 channels simultaneously from a remote location. It is possible to control the Pan/Tilt camera, which allows to set-up the position of the Pan/Tilt camera from a remote location.

► Pan/Tilt control : Possible to PAN, TILT and ZOOM by clicking the button on the web screen.

3.6.4 Playback Screen Search



This is for searching playback screens. It is possible to check date and time.

**Note**

- Remote monitoring is limited to 6 persons for assurance of the reliability of the system.
- Only one person is allowed to see the web playback screen.
- Possible to restrict remote user by password.
- Possible to delay because of system status.
- The reliability of remote monitoring is subject to the reliability of the Internet connection.
(Try rebooting in case of Internet malfunctioning.)

**Notice**

If the product is being backed up by HDD in use, you will not be able to use the remote control function.(but live monitoring is possible.)

- HDD content for backup can not be replayed from remote software.

3.6.5 Client Software

The Client Software is at an attached CD-ROM, and if use this instead of the web browser, more highly efficient operation can be performed. This software has the following functions.

- Live Mode
- Search Mode
- Player Mode
- PTZ camera control
- Download (Back-up) Mode
- Support converting to AVI format to play with Windows Media Player

* Installer/ Menu/ buttons are written in English.

● CD-ROM Content

Following files and folder are in CD-ROM.

(1)"VR-616 ClientSW" Folder

Client software. As double click "setup.exe" as start installation.

(2)"VR-616 ClientSW Manual(Japanese).pdf"

Instructions of this software. (Japanese)

(3)"VR-616 ClientSW Manual(English).pdf"

Instructions of this software. (English)

● Operating Environment

System Requirements

PC	Type	PC/AT compatible machine
	CPU	Pentium III 500MHz and more
	Memory	64MB and more
	HDD	Free space 12MB and more
Compatible OS	Windows 98/ 2000/ Me/ XP	

4. Function Explanation and Menu Setting

This system can set-up the motion conditions of the camera, recording conditions, alarms, audio, and system settings from the monitor menu.

4.1 Front Button Explanation

4.1.1 Before Use

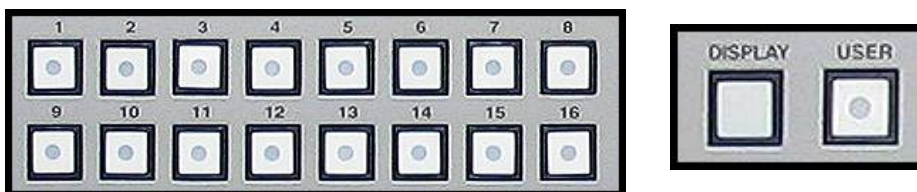
Make sure all the devices are properly connected as described in Chapter 2, then connect to the power source.



When you turn on/off the power, please use power switch on the front. HDD can be damaged as you use main power switch on the rear.

4.1.2 Monitor Out

This product can simultaneously record while live monitoring. You can select a screen form by using the DISPLAY / USER button and INPUT button.



- It displays the selected channel on the monitor by pressing the INPUT button during live or playback. It is used for selecting INPUT_CH at the MENU.
- Selected monitor configuration is displayed on the monitor "USER" button is for screen configuration, which is set-up from the menu. 1,4,9,16,6,7,10 screen is displayed as pressing the DISPLAY button during live. 1,4,9,16 screen is displayed as pressing the DISPLAY button during playback.



- Alarm Reset button is for stopping the external alarm motion.
- AUTO Button is ON/OFF. As pressing this buttons, the divided screen is switched automatically.

4.1.3 REC



- By pressing this button, recording starts. The REC LED is on while recording. As pressing this button again, recording is stopped. The REC LED blinks during the Alarm record.

4.1.4 PLAY



- Press this button to select playback condition. Play LED is on while playing. (Refer to play mode for more details.)



- **DISPLAY** : It displays multi-screen when its' monitoring or playback. As pressing this button repeatedly when its' monitoring, divided screen is displayed 1/4/9/16/6/7/10 and as pressing this button repeatedly when its' playback, divided screen is displayed 1/4/9/16.



- **IMAGE SEQUENCE** : One playback screen is displayed with time slice on 4/ 9/ 16 divided screen.



- **ZOOM** : It can be X2 zoomed at any mode. Possible to zoom status by using X (◀▶) axis , Y (▲▼) axis and it is possible to move by using direction button in zoom status.



- **TRIPLEX** : This is overlay screen. Background screen is monitoring screen and overlay screen is playback screen. PB screen and Triplex screen will be displayed repeatedly as pressing Triplex button while it is replaying.



- JOG & SHUTTLE can search by frame in play mode by using JOG when it is paused (||) and possible to quick search by an angle of the shuttle.
- At the menu setting, it is possible to move the position or change the value by using JOG .
- Slow playback can be performed by using JOG during playback/Reverse playback. It takes a time for a while, from a SLOW onscreen display "| | | | ► " appear and then a SLOW PLAYBACK image starts. When you press twice the PLAY/Reverse Playback button under shifting, the image changes immediately.



- When the DVR is in PLAY MODE, the buttons have the functions indicated above button mark. (REC, stop (■) / pause (||) / reverse play (◀) / pause (||) / play (▶))
- When the DVR is in menu mode, the buttons have the functions indicated below. (EXIT, ENTER)



In the play mode if you press the Enter button the DVR will be paused, then you can search field by field using the jog/shuttle control. You can search quickly using the Shuttle and slowly by using the Jog.

4.1.5 Menu Setup



- You can easily change the Camera Setup, Recording Setup, and Audio Setup by the graphical user interface screen.

If you press the menu button, you can see the next menu screen. It can be moved up and down by using Jog. The Menu is selected by clicking the ENTER button.

Setup value (symbols, Alphabet Upper case (Capital) letters, lower case letters, numbers and position) of the menu can be changed by using X & Y axis /EXIT/ENTER buttons, and INPUT button.

4.1.6 FREEZE



- By pressing the freeze button then pressing the channel buttons(1~16), the selected screen will display a still image.

4.1.7 Explanation of Image Sequence and Triplex

- **IMAGE SEQUENCE** : One playback channel is replayed to the divided screen field by field in sequence.
Press the display button to select the type of display division.



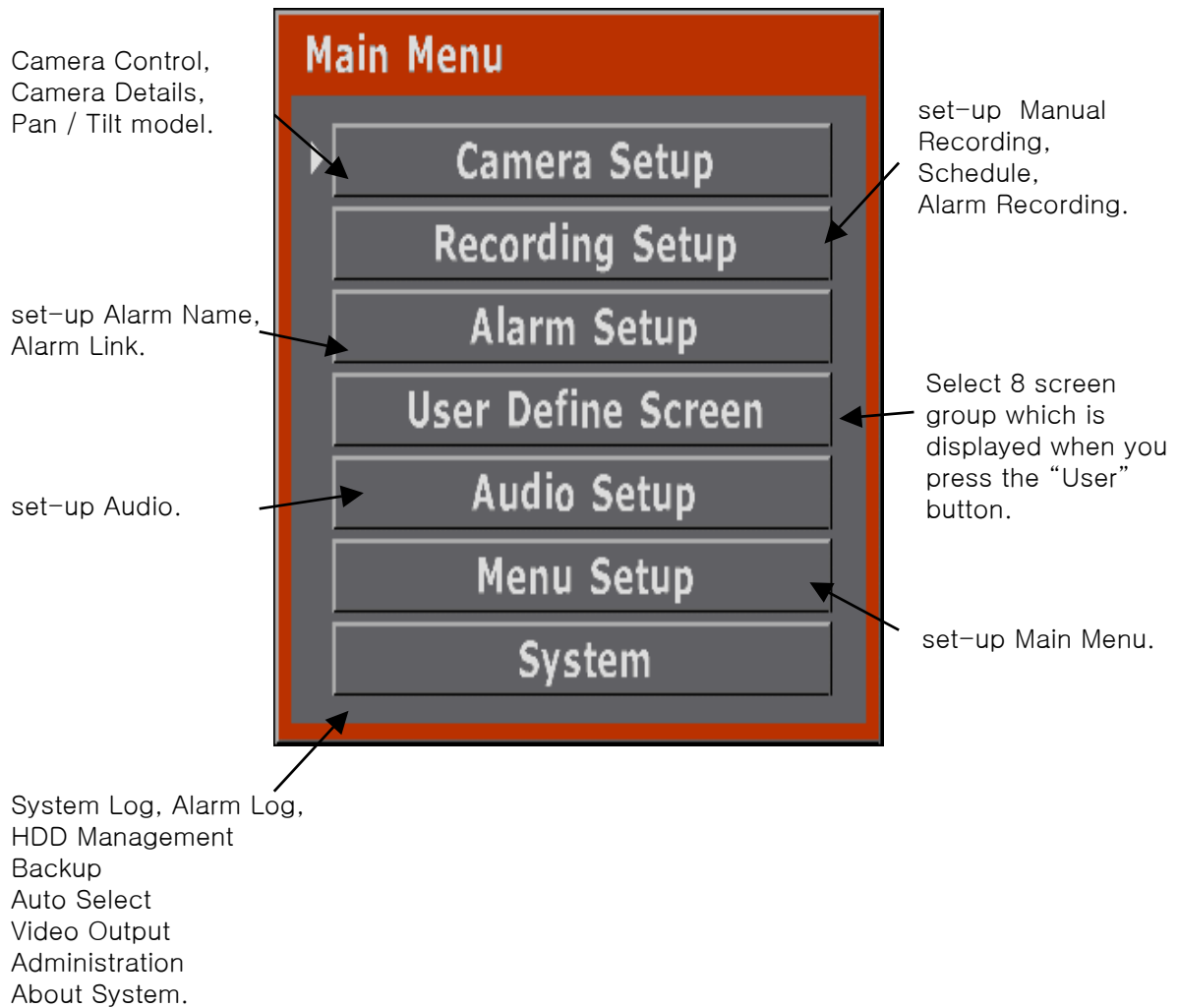
Image Sequence Playback Screen of 16 Channel

- **TRIPLEX** : This is an overlay (picture in picture) screen. You can monitor live screen and playback screen at the same time. It is returned to playback screen as pressing the PLAY button (ENTER button) after setup monitoring channel you want to see. If you want to change playback screen, press the Channel Selection buttons.



TRIPLEX Playback Screen

5. Main Menu



Possible to change setting value by using Jog and direction buttons. According to cursor position, cursor should move right/left when press up/down buttons.

5.1 Camera Setup

It is possible to set-up image which will connect at input port and able to set-up Pan/Tilt camera which will connect with RS-485.



5.1.1 Camera Control

Make sure all of the Pan/Tilt cameras are the same manufacturer. Use the cameras which are supported by the same protocol.

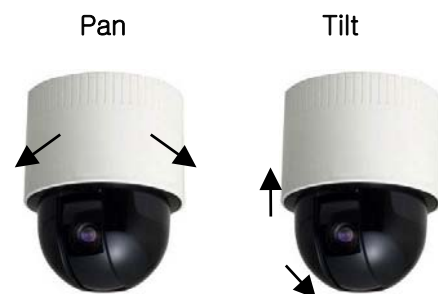
- 1) RS-485 enables long distance transfer.
- 2) Possible to connect in parallel.

5.1.1.1 Pan/Tilt Camera



Pan/Tilt Camera

Examples of Camera Rotation



5.1.1.2 How to Use

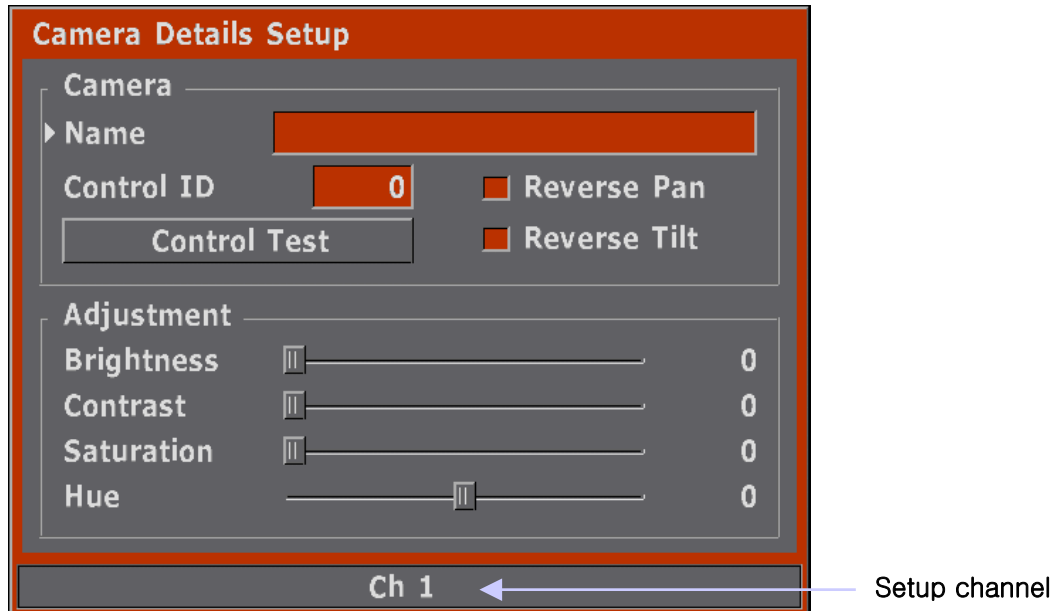


- 1) Checks camera ID setup value from the camera setup menu.
- 2) Selects Pan/Tilt Control from the menu.
- 3) Selects motion by Jog or right/left button.
- 4) Moves shuttle left or right.
Checks whether camera ID and Pan/Tilt camera ID are the same installation if the Pan/Tilt camera does not activate.
Also, checks whether the control line of the Pan/Tilt camera is in the correct location.
- 5) Press the EXIT button to return to the Camera Setup Menu.



If you use multiple Pan/Tilt cameras, make sure all of the Pan/Tilt cameras are the same manufacturer.

5.1.2 Camera Details



- Installs Name, Camera ID (Pan/Tilt Camera), Model and Color (Brightness, Contrast, Saturation, Hue) of each channel.

5.1.2.1 How to Setup

- 1) Checks the channel number as indicated at the bottom of the tab, and then checks whether the background is the correct screen.
(The channel number can be changed by pressing the INPUT button.)
- 2) Selects contents which you want to change by jog.
- 3) Possible to change setup status by using the buttons as follows.

ENTER button	: Change and complete selected contents.
EXIT button	: Make cancellation.
◀ button	: Move to left at the Name.
▶ button	: Move to right at the Name.
Jog	: Can change character and number by jog rotation.
- 4) To return to the preset menu, press the EXIT button.
- 5) If a Pan/Tilt camera is connected, test after setting-up the camera ID.

5.1.2.2 Camera Name

- Name : Possible to create an alphanumeric nickname of up to 16 characters (including symbols) as shown below.
You can see the next character repeatedly by using Jog.

Character Mark

Blank ! " # \$ % & ' () " + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ?
@ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
[\] ^ _ ' a b c d e f g h i j k l m n o p q r s t u v w x y z { } ~

How to Use

- 1) Selects Name by Jog.
- 2) Possible to write and amend if you press the ENTER button.
- 3) Writes and amends by using the RIGHT/LEFT button and Jog.
- 4) Complete by clicking the ENTER button.



It is NOT possible to display all the characters when the screen is divided into more than 6 pictures. In this case "..." is displayed.

5.1.2.3 Pan/Tilt Camera Setup

- Camera Setting : Camera ID, Reverse Pan, Reverse Tilt, Control Test

- 1) Camera ID : For controlling the Pan/Tilt camera.
Setting ID is for distinguish the Pan/Tilt camera, which is connected in parallel.
Camera ID uses 1~255 number.
(Be sure to check the specifications of the Pan/Tilt cameras.)
- 2) Reverse Pan, Reverse Tilt : It reverses a Pan/Tilt Camera direction.
Usually, the Pan/Tilt direction can be changed depending on the location and mounting of the Pan/Tilt camera.
- 3) Control Test : Possible to test whether Pan/Tilt Camera setup is correct or not.
Useful when checking after setup finishes.

5.1.2.4 Adjustment

- Possible to install each input video color (Brightness, Contrast, Saturation) value as a number 0~100 and Hue can be installed as a number -128~127.
Please, install a proper value for a background checking screen.

- How to Setup
 - 1) Move to the desired position by using Jog or up/down buttons.
 - 2) If you press the ENTER button, the next image is displayed with video input.
 - 3) Jog left or right (or press up/down buttons) for changing the number.
 - 4) If you press either the ENTER or EXIT button, setup is finished. After finishing setup, the previous screen is displayed.



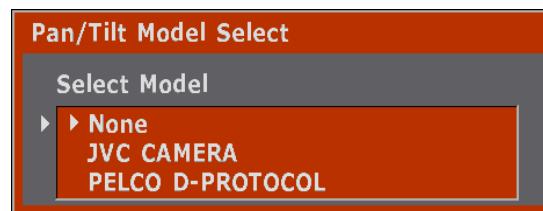
Brightness : Controls brightness.

Contrast : Controls contrast.

Saturation : Controls saturation.

Hue : Controls hue.

5.1.3 Pan/Tilt Model Select

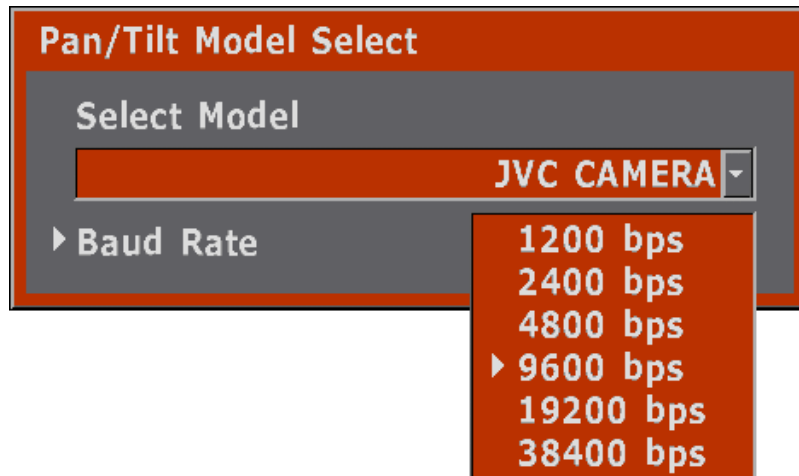


Selects one of Camera driver.

* If you connect with TK-C676/TK-C655, please select "JVC CAMERA"

● How to Setup

- 1) Connect the Pan/Tilt camera to the RS-485 port.
- 2) Select the same drive, which is selected from the "Pan/Tilt Model Select" menu.
- 3) Set-up the Camera ID at "Camera Setting".
- 4) Test it by using Camera Control.



- Selects baud rate for each camera. (Factory default is 9600 bps)

* If you connect with TK-C676/TK-C655, please select "9600 bps"

5.2 Recording Setup



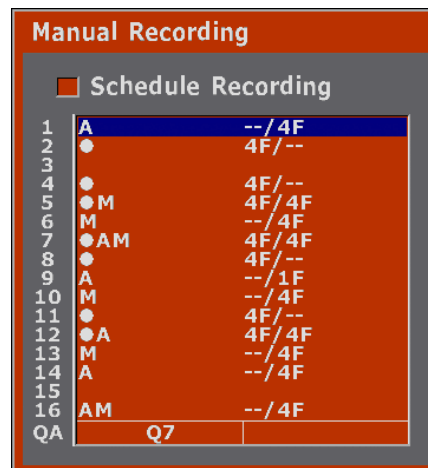
5.2.1 Manual Recording

Manual Recording is for setup recording condition of each channel as pressing REC button when it is not recorded according to schedule.



- Possible to control recording for each channel as pressing REC buttons.
- As pressing Enter button after moving cursor to channel by using Jog, channel for setup will be changed blue bar as blow.

In case Schedule Recording Box is checked, Manual Recording is not working.



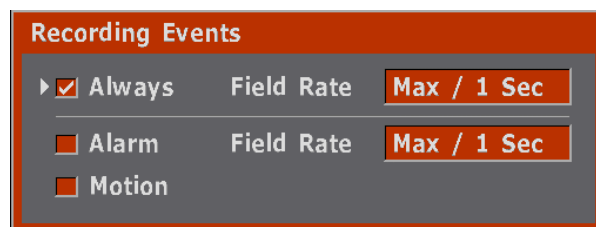
- Each symbol means as below.

! In case Schedule Recording box is checked, recording is started according to schedule regardless of Manual Recording. For using Manual Recording, do not check Schedule Recording box.

- : Always Recording.
- A : Alarm Recording.
- M : Motion Recording.
- fps/fps : The former 'fps' is field rate of Always Recording, the latter 'fps' is filed rate of Alarm Recording/Motion Recording.

- From the Manual Recording menu, press the Enter button then the below picture (Recording Events) will display.

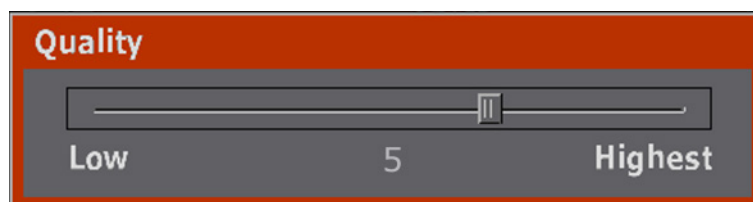
5.2.1.1 Recording Events



- As press the ENTER button at the selected block, possible to set up Recording Events of block like above picture.
- Always : Records always if it is in Recording Time
- Motion : Recording is started if motion is detected which is in set up screen of Channel
- Alarm : Records when the selected alarm is received.

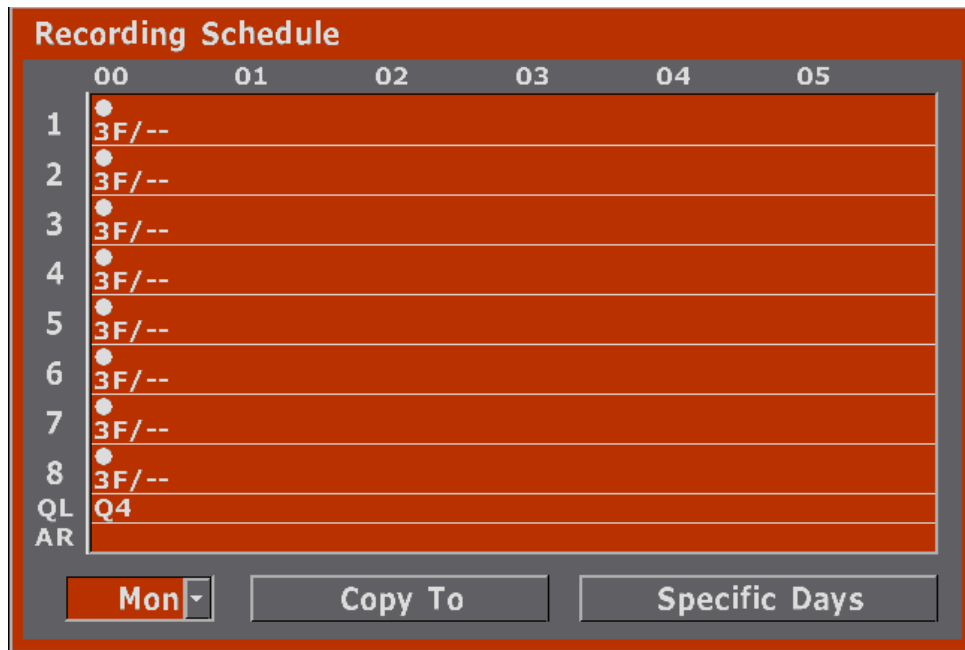
! Please do not set-up a channel without video input as record. Please take out all checks, Always, alarm, and motion.

5.2.1.2 Quality



- As press the ENTER button on the left-side of the QA line, possible to set up Recording Quality like above picture.
- Setup range : 1 ~ 7. (Default setting : 5) (1=Low, 7=the Highest.)
- When you place the bar on the right-hand side of the "QA" line and press the Enter button, you will be able to select Audio Recording On and Audio Recording off as below.

5.2.2 Schedule



- Schedules recording by date, time and channels.
- Schedules recording for specific day.
- If it changes from a menu, a clock mark is displayed on the screen lower right, and it will be in the state of TIMER STANDBY or TIMER RECORD. VR-616 does not have a power-saving mode.

5.2.2.1 Explanation of Recording Schedule

1) Time



- The above numbers indicate the hour in the day. (00 ~ 23)

2) Channel



- The left numbers indicate the input channel. (1 ~ 16)

3) Quality Level, Alarm Recording



- QL indicates quality level as recording.
- AR indicates whether Audio Recording or not.

4) Recording Events





- : Always Recording.

A : Alarm Recording.

M : Motion Recording.


- F/F=fps/fps : The first 'fps' means field rate of Always Recording, The second 'fps' means field rate of Alarm Recording/ Motion Recording.

Ex)  The left picture indicates it is being Always Recording with recording 3fps.

 The left picture indicates it is being Alarm, Motion Recording with recording 4fps.

5.2.2.2 How to Setup

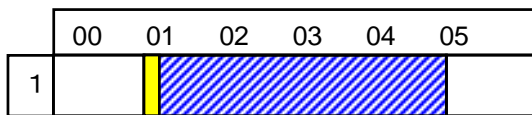
- Recording Schedule is set-up in block. Minimum block is an hour.

 A time setting cannot be performed from the remote control unit. Please use the front panel buttons.

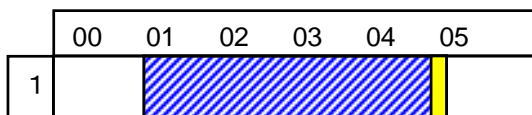
● How to Setup Recording Schedule Block

1) As using left/right direction button, designates time block at the same channel.
As using up/down direction button or jog, designates channel block at the time zone of 0 hour.

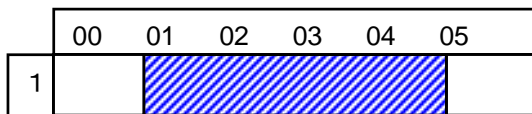
2) As pressing 'DISPLAY' button at the block to change, the following picture will display in order.



- Appears yellow bar at the left of block.

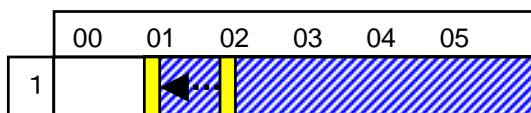


- Appears yellow bar at the right of block.

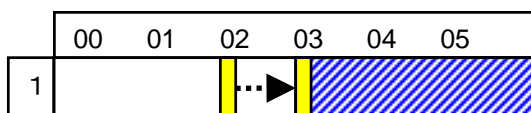


- Disappears yellow bar at the block.

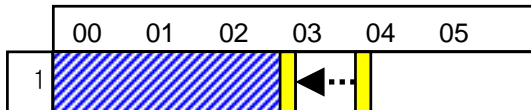
3) As pressing the left button in case yellow bar is at the left of the block :
The block extends for an hour and extended time is set-up as Recording Schedule of present block.



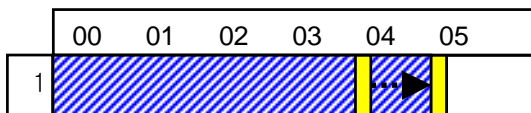
When the yellow bar is located in the left side of the block and you press the right arrow button, then the source configuration in the block will be deleted (reduced) and the configuration in the deleted block will follow the configuration in the left block. (But, if the current block is located in the most left side, then the configuration of deleted block will follow the default setting.)



- When the yellow bar is located in the right side of a specific block and you press the left arrow button, then the source configuration of the block in the right side of the current block will be copied (expanded)
(But, if the current block is located in the most right side, then the configuration of deleted block will follow the default setting.)



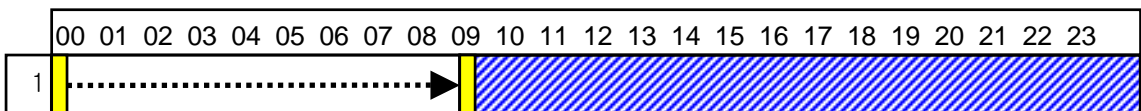
- When the yellow bar is located in the right side of a specific block and you press the right arrow button, then the source configuration of the block in the current block will be copied (expanded) to the right block.



Ex.) Setup the schedule recording at 9:00 - 12:00 and 15:00 - 18:00.

(Attention In order to give explanation simply, all are displayed for 00:00- 24:00.
On an actual screen, it displays a part of them.)

- (1) Press the Enter button when the cursor is on the schedule table.
- (2) Select camera 1 by using JOG or up/down button. Press the display button, and a yellow bar is displayed on the position at 00:00



- (3) Press right button, and move it to the position of 09.
- (4) Press display button and a yellow bar is displayed on the right-hand side of 23 (23:59).



- (5) Press left button, and move it to the position of 12. Press display button, and a yellow bar will disappear.
- (6) Press right button, and move the specific block.
- (7) Press display button, and a yellow bar will be displayed on the left-hand side of a specific block.



- (8) Once again, press a display button, and a yellow bar will be displayed on the right-hand side of 23 (23:59).
- (9) Press left button, and move it to the position of 15. Press display button, a yellow bar will disappear.



- (10) Press right button, and move the specific block.
- (11) Press display button, and a yellow bar will be displayed on the left-hand side of a specific block.



- (12) Once again, press display button, and a yellow bar will be displayed on the right-hand side of 23 (23:59).
- (13) Press left button, and move it to the position of 18. Press display button, and a yellow bar will disappear.



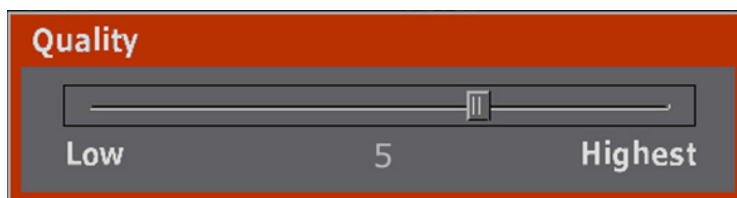
- (14) By the above procedure, schedule setup has completed. Moreover, this state seems that one day is divided into five blocks. If a block is chosen with a right/left button and an ENTER button is pressed at it, a record setup of each block can be set-up freely. However, mind that a boundary line will disappear if an adjacent block is set to the same setup.

- If press the ENTER button as block is selected, the below picture (Recording Events) will be displayed then possible to set-up recording option for selected channel.



- The way of setup is the same with Manual Recording.
- After finish setup, press the EXIT button then it is returned to Manual Recording menu.

! Please do not set-up a channel without video input as record. Please remove all checks such as Always, Alarm, and Motion.



- As press the ENTER button at the QL, possible to set-up Recording Quality like above picture.
- Set-up range : 1 ~ 7. (Default setting : 5)
(1=Low, 7=the Highest.)
- After finish setup QL and each channel, press the EXIT button for out of menu.

5.2.2.3 Audio Recording

- When you place the bar in AR and press the “Enter” button, then you will be able to select Audio Recording On and Audio Recording off as below.

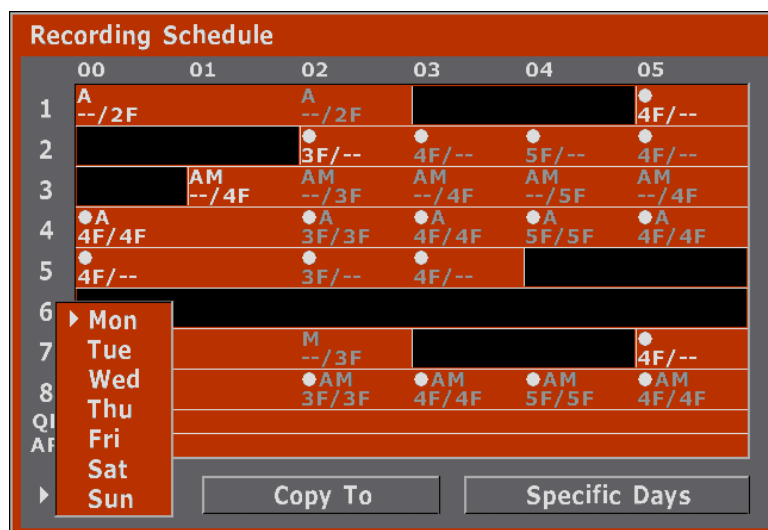


- Audio Recording On



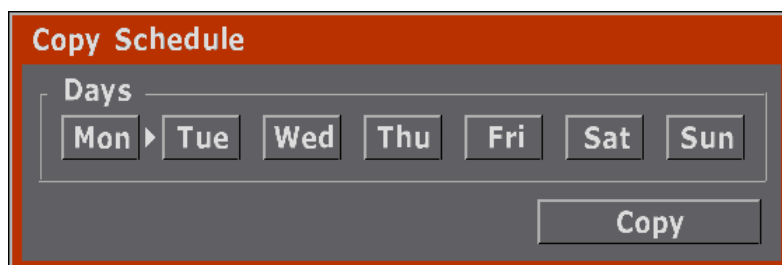
- Audio Recording Off

5.2.2.4 Setup Days of the Week



- You can select a day to configure the recording schedule using Enter button and Jog dial.

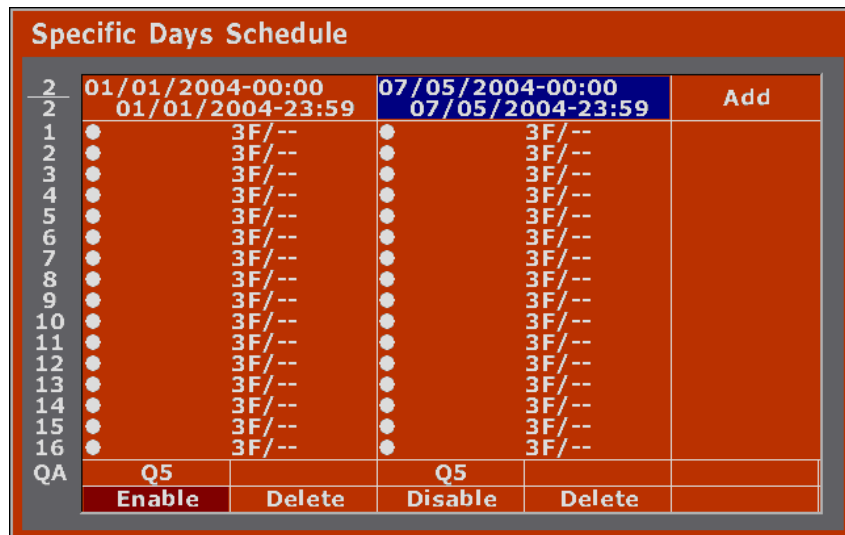
5.2.2.5 Copy Schedule




- You can copy the recording schedule configuration of a specific day of the week to other days of the week. After set-up the day of copy, press the Copy button.

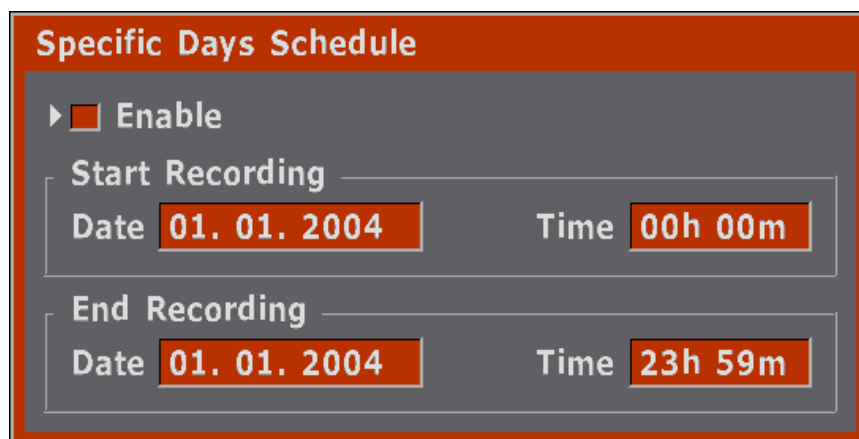
5.2.2.6 Specific Day Schedule

- You can configure the recording schedule of a specific day by pressing “Enter” button in the ‘Specific Days...’.
- If it changes from a menu, a clock mark is displayed on the screen lower right, and it will be in the state of TIMER STANDBY or TIMER RECORD. VR-616 does not have a power-saving mode.




- Using the left/right arrow buttons and the ‘Enter’ button and selecting the ‘Add’, you can add and configure new “Specific Day Schedule” up to 16.
- Using the up/down arrow buttons and the “Enter” and Jog dial and selecting the “Disable/Enable”, you can decide if you will record it according to the configuration of recording schedule, or not.
- Using the up/down arrow buttons and the “Enter” and Jog dial and selecting the “Delete”, you can delete the configured recording schedule.

 Please do not set-up a channel without video input as record. Please remove all checks such as Always, Alarm, and Motion.



- You can set the start and the end time of the schedule recording for the specific day.

 Actual record will be till end time +1 minute.

As each input channel is selected, the maximum recording Field/Sec can be changed as in the below table. (Only for NTSC)

1CH → 30F/S	2CH → 30F/S	3CH → 15F/S	4CH → 15F/S
5CH → 10F/S	6CH → 10F/S	7CH → 7F/S	8CH → 7F/S
9CH → 6F/S	10CH → 6F/S	11CH → 5F/S	12CH → 5F/S
13CH → 4F/S	14CH → 4F/S	15CH → 3F/S	16CH → 3F/S

It is NOT possible to be 60 field according to input channel number.

Ex) 16CH → 16*3=48(Field), 5CH → 5*10=50(Field), 1CH → 1*30=30(Field)

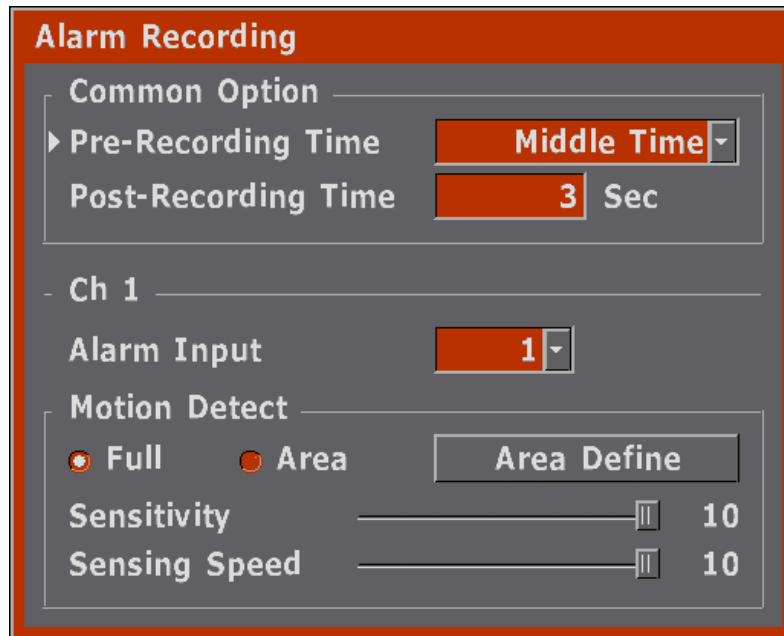
As each input channel is selected, the maximum recording Field/Sec is changed as in the below table. (Only for PAL)

1CH → 25F/S	2CH → 25F/S	3CH → 12F/S	4CH → 12F/S
5CH → 8F/S	6CH → 8F/S	7CH → 6F/S	8CH → 6F/S
9CH → 5F/S	10CH → 5F/S	11CH → 4F/S	12CH → 4F/S
13CH → 3F/S	14CH → 3F/S	15CH → 3F/S	16CH → 3F/S

It is NOT possible to be 50 field according to input channel number.

Ex) 16CH → 16*3=48(Field), 5CH → 5*8=40(Field), 1CH → 1*25=25(Field)

5.2.3 Alarm Recording



- Set-up recording time which is before event and after event when its' Alarm/Motion Events.
- The RECORD Indication LED and ONSCREEN display might be displayed 10 – 20 seconds longer than actual record time.
- set-up Alarm Input.(1-16)

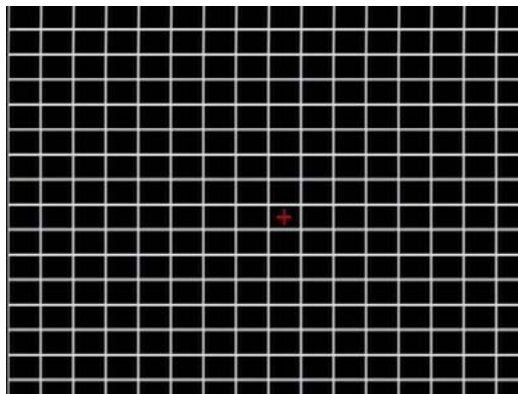
! If the record is started by alarm / motion detection from the stop mode (the sensor record mode), audio does not record even though it is set to on.

- **Motion Setup**

Full : Recording (REC) is started when motion is detected on the full screen.

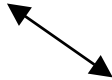
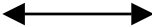

Area : REC is started when motion is detected on the selected grid. ()
(this grid can be selected by the user.)

- set-up area as pressing the ENTER button at Area Define menu.



● How to Setup

- ① Jog direction of field setup.

Jog Direction	X-axis Direction Button	Y-axis Direction Button
		

- ② The user field setup is moved to the place by jogging. The first location and the last location can be selected by clicking ENTER.
- ③ Area field setup is moved to the place by jogging and can check the field by using ENTER.
- ④ After setup is finished, move to the higher level menu by clicking EXIT.

● Sensitivity

Sensitivity refers to the sensitivity to motion. Sensing Speed is the speed of motion. Possible to set-up a range from 1 to 10. (1=Low/Slow, 10=High/Fast.)



Motion must be clicked on Recording Events. After detecting motion by Motion Area, Sensitivity and Sensing Speed, recording is started.

How to Setup

- ① Move to Sensitivity or Sensing Speed by using Jog then press the enter button for setup value.
- ② After setup is finished, move to the previous menu by clicking EXIT.



Sensitivity is detected sensitive changing in proportion to value. Sensing Speed is no reaction to fast changing because renewal speed is slow down as increasing Sensing Speed value. If a setup is completed, please be sure to check real operation.



When an area setting screen is opened during recording, even if there is no motion in an image. Although the detection log may be recorded, the Motion-Detection Recording does not work.

5.2.4 Recording Duration



- MODE : NTSC / PAL
- Maximum Field Rate : 60 F/S (NTSC)
: 50 F/S (PAL)
- Recording Channel Number : 16Ch
- Resolution : 720 * 240 (NTSC)
: 720 * 288 (PAL)

Quality	Field Rate									
	3F/ 1S	2F/ 1S	1F/ 1S	1F/ 2S	1F/ 3S	1F/ 4S	1F/ 5S	1F/ 6S	1F/ 8S	1F/ 16S
Record Condition HDD : 240 Gbyte, Audio Sampling Rate : 8KHz										
7	31	46	93	187	280	374	468	561	748	1497
6	41	62	124	249	374	499	624	748	998	1997
5	52	78	156	312	468	624	780	936	1248	2496
4	52	78	156	312	468	624	780	936	1248	2496
3	62	93	187	374	561	748	936	1123	1497	2995
2	72	109	218	436	655	873	1092	1310	1747	3495
1	104	156	312	624	936	1248	1560	1872	2496	4993
Record Condition HDD : 240 Gbyte, Audio Sampling Rate : NONE										
7	31	46	93	187	280	374	468	561	748	1497
6	41	62	124	249	374	499	624	748	998	1997
5	52	78	156	312	468	624	780	936	1248	2496
4	62	93	187	374	561	748	936	1123	1497	2995
3	72	109	218	436	655	873	1092	1310	1747	3495
2	83	124	249	499	748	998	1248	1497	1997	3994
1	104	156	312	624	936	1248	1560	1872	2496	4993
(Unit : Hour)										

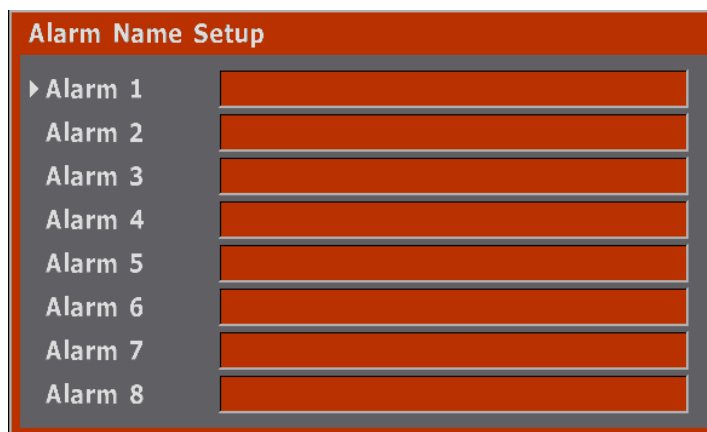
(You can control recording quality from Manual Recording of the Recording Setup.
This record timetable is indicated the minimum guaranteed values.)

5.3 Alarm Setup

Alarm Setup is used for connecting with external devices such as alarm or buzzer.



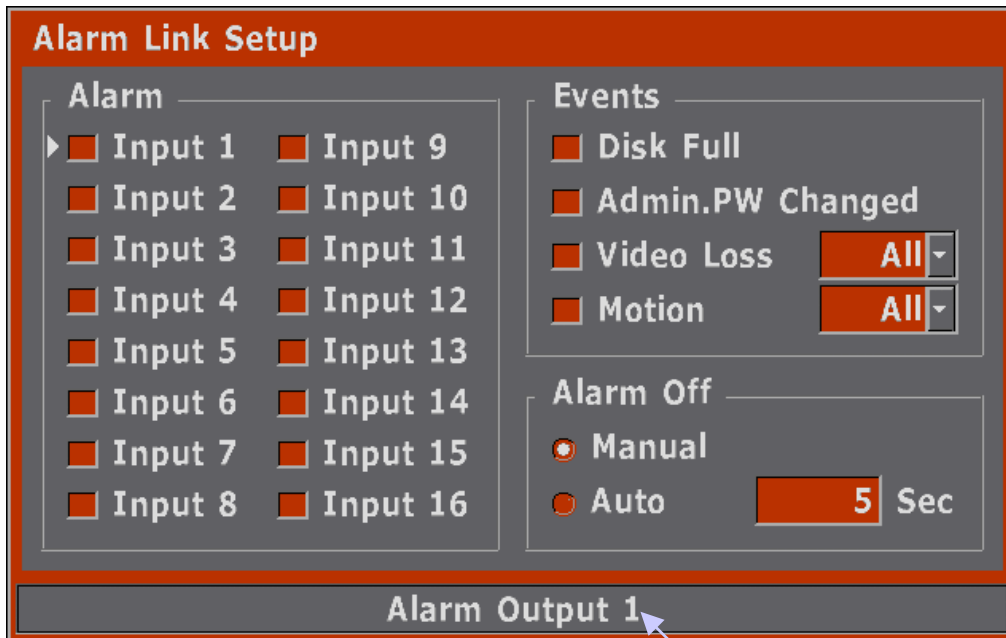
5.3.1. Alarm Name



How to Setup

- a. Select alarm channel by using Jog.
- b. Selects name by using play, right/left, and jog.
- c. As jog is rotated from right to left, characters change.
Possible to write up to 16 alphanumeric and symbolic characters.

5.3.2 Alarm Link Setup



Alarm output number
Present output number is 1

- **Events** : Select condition of Alarm Out.
Alarm inputs are 16EA and Alarm outputs are 4EA.
- **Alarm Link Explanation**

The above menu will display as checking Alarm Link button.

- 1) **Alarm (left of the above picture)** : Sets up which alarm will be output when alarm occurs. Inputs are 1~16 and possible to select repeatedly.
- 2) **Events (above of right)** : Sets up events which will be output alarm signal. There are Disk Full, Admin, PW Changed, Video Loss, and Motion. Possible to select repeatedly.
- 3) **Alarm Off (below of right)** : How to off alarm when alarm occurred.
There are Manual and Auto.
- 4) **Alarm Output Number** : The part for selecting output port when signal is in according to alarm and event setup. Output ports are in rear of product and able to select one of them.
- 5) Alarm in/out ports are in rear of product there are 16pcs of input ports and 4pcs of output ports.

Move to previous menu after finish setup by using EXIT button.

5.3.2.1 Alarm

Moves by using ▲, ▼ buttons or Jog.

Displays alarmed channel. For selecting channel you want to detect, press ENTER button after moving cursor to detect. Canceling is the same way.

5.3.2.2 Events

- Alarm has occurred according to select events such as Disk Full, Admin PW. Changed Video Loss, Motion Detect.
- Checks event you want to detect from the Events menu by using Jog and ENTER button.
- Each event type is indicated by the following.
 - Disk Full : When HDD is fully recorded.
 - Admin.PW Changed : When Admin Password has been changed.
 - Video Loss : No video image. Possible to select channel number or ALL.
 - Motion : When motion is detected. Possible to select channel number or ALL.

5.3.2.3 Alarm Off

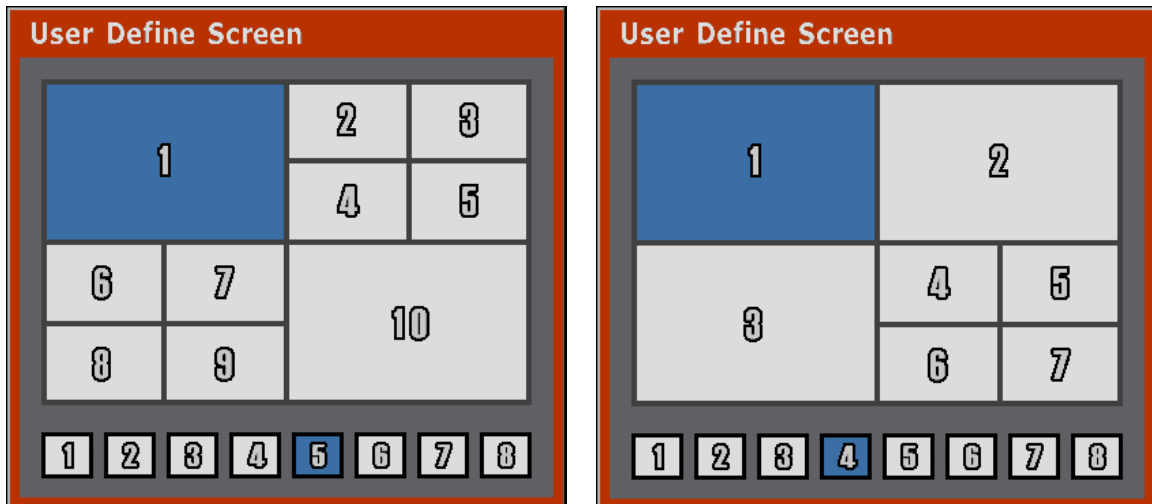
- How to off “Alarm” when alarm has occurred
 - Auto : Alarm is turned off automatically after setting time.
 - Manual : As press the Alarm button on the front, alarm is turned off.
 - Time (Sec) : This is for selecting “Auto”. (Unit : Sec)

5.3.2.4 Alarm Output Number

- Select Alarm Output Number by using channel button.(1~4 buttons)
Alarm Output Number is changed according to pressing button.
- Alarm Output port is Open Collector and could be connected to rear port of the product. It has 4 outputs. Refer to External Product Connections and Application for the details.
- For Alarm OUT connector, please refer to P.29

5.4 User Define Screen

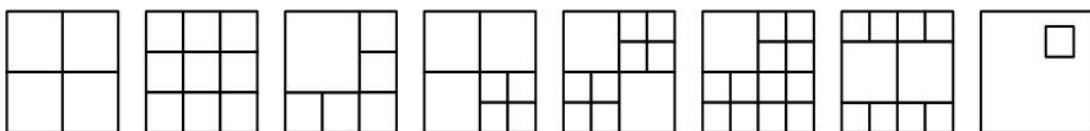
User can organize the screen to your personal preference by using the user button. It is very convenient if you use AUTO function at User Screen.



● How to Setup

1) Select one of 8 variations of multi-screen views by using left/right buttons or Jog.

(NTSC : 8 Screen, PAL : 8 Screen)

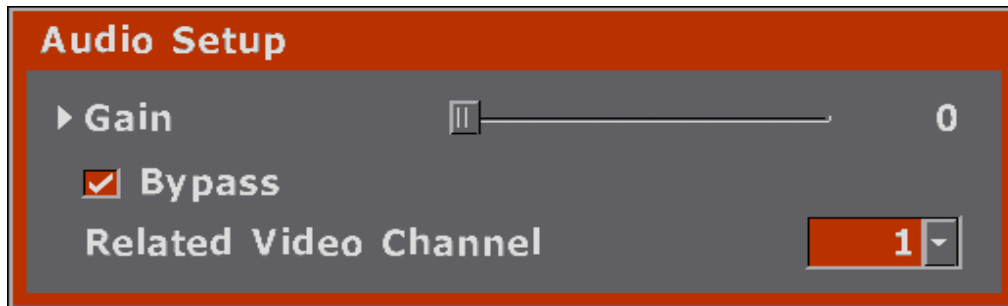


2) As color is changed to blue, change the screen by using Button.

- Ⓐ Change the screen, which color is blue, by selecting the Channel Selection button.
- Ⓑ Move to another screen by using Jog/ up-down button.
- Ⓒ After finishing, select either ENTER or EXIT.

3) After setting end, finish the menu and then press the "USER" button of screen button. User Screen will display as press the INPUT CH on USER SCREEN mode.

5.5 Audio Setup



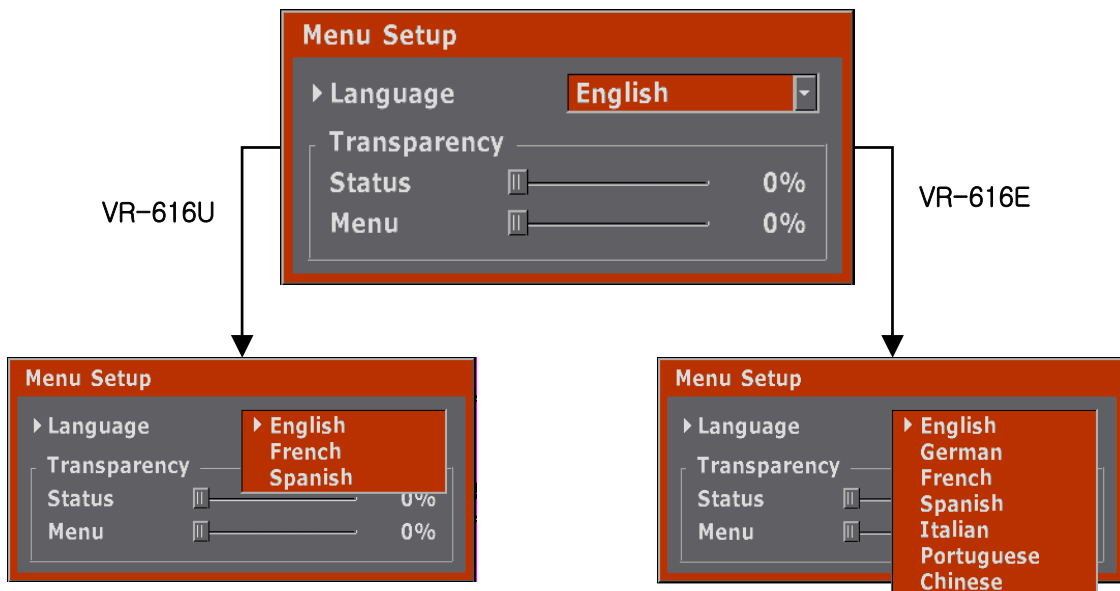
- Audio is capable of recording one channel.
- Sampling Rate is 8 KHz.
- Bypass is possible to Audio Out as recording Audio.
- Master Gain is from 0 to 5. 0 is standard input status. (-5db)
- Audio can be recorded, provided that Audio of Channel Selection at Recording Setup is checked

Caution!! Cannot record Audio at the time Recording Quality is set to "7".

● How to Setup

- 1) Selecting Audio Setup from the menu, displays the above picture.
- 2) Select "Bypass Audio".
- 3) Select "Bypass Audio".
You can hear sound from "Audio Out".
- 4) For audio recording
 - ① Select "Manual Recording" from the Recording Setup.
Check whether Audio is set-up or not.
 - ② Select Channel of Related Video Channel from the Audio Setup.
 - ③ Check whether Channel of Related Video Channel is set-up or not at Manual Recording of Recording Setup.
- 5) Finish by using EXIT button.
- 6) Audio is recording as REC button is on.

5.6 Menu Setup

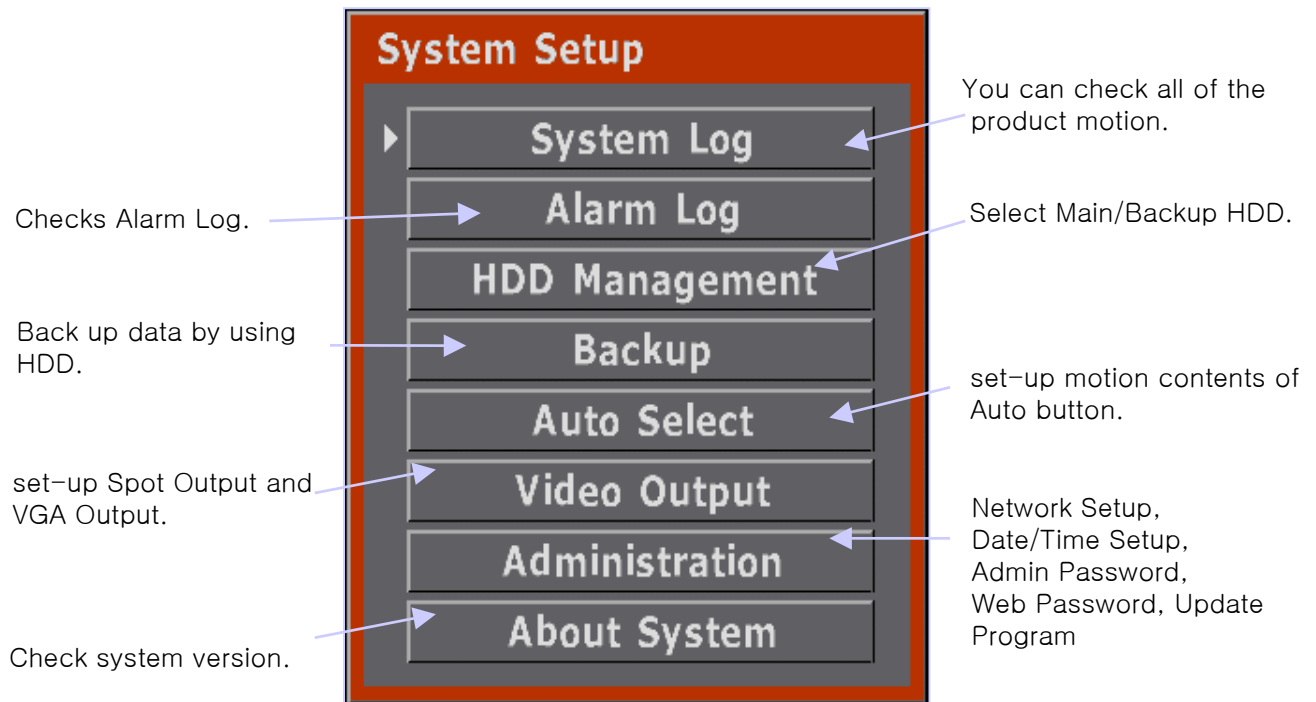


- Language is set-up at English and able to change to French and Spanish on VR-616U. (English, German, French, Spanish, Italian, Portuguese, Chinese are available on VR-616E)
- Status : It controls transparency of present status(channel name, recording status indicator, clock, indicator of HDD recording amount) which is displayed on screen. (0 ~ 80%)
- Menu : It controls transparency of Menu screen. (0 ~ 80%)

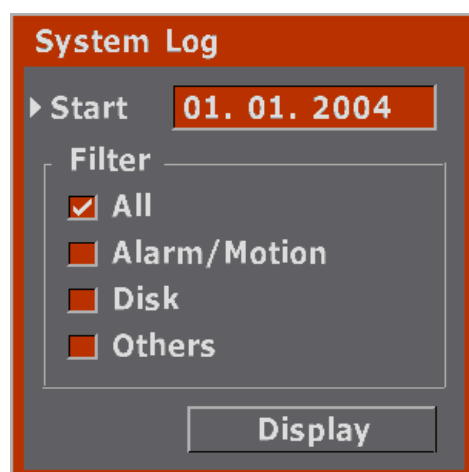
● How to Setup

- 1) Selecting Menu Setup from the menu, displays the above picture.
- 2) Move to the place you want to set-up by Jog.
- 3) For changing language, press the ENTER button at Language and select the language.
- 4) If you change the value by jog after moving to Status and pressing the Enter button, it controls transparency of present status(channel name, recording status indicator, clock, indicator of HDD recording amount) which is displayed on screen.
- 5) If you change the value by jog after moving to Menu and pressing the ENTER button, it controls transparency of Menu screen.
- 6) Finish setup by using EXIT button.

5.7 System Setup



5.7.1 System Log



- Log records all actions which occurred on the system while operating.
- Easy to use by using Date or Filter.

● How to Setup

- 1) Log records all actions which occurred on the system while operating.
- 2) You can check “Log” by the following :
 - ① Set-up start date, which will be marked on the LOG, by Jog.
Select year/month/day by using the right/left button.
Change year/month/day number by using Jog.
 - ② Select “Log Filter” for quick search.
 - ③ Select “Display” button.

● Log Screen

Log screen contents are as follows:

Alarm In 1-16	Disk Full
Video Loss	Power On/Off
Network Access	Menu Setup
Motion Detect	

- On the system log display screen, if you chose a log line by the vertical button or JOG Dial and then press the ENTER button, playback the recorded image starts from the time when the log was recorded. If there was no record image when a log is recorded, playback the recorded image from the nearest position. As pressing a stop button, it will return to a system log screen.

5.7.2. Alarm Log

Alarm Log		
Time	HDD 1	Events
04/29/2004-19:51:47		Alarm Detect - Ch 1
04/29/2004-19:51:47		Alarm Detect - Ch 1
04/29/2004-19:51:48		Alarm Detect - Ch 1
04/29/2004-19:52:18		Alarm Detect - Ch 1
04/29/2004-19:52:43		Alarm Detect - Ch 1
04/29/2004-19:52:44		Alarm Detect - Ch 1
04/29/2004-19:52:45		Alarm Detect - Ch 1
04/29/2004-19:52:46		Alarm Detect - Ch 1
04/29/2004-19:52:48		Alarm Detect - Ch 1
04/29/2004-19:52:50		Alarm Detect - Ch 1
04/29/2004-19:52:50		Alarm Detect - Ch 1
04/29/2004-19:52:51		Alarm Detect - Ch 1

- Alarm Log displays alarm recording which detects on system such as motion.
- On the alarm log display screen, if you chose a log line by the vertical button or JOG Dial and then press the ENTER button, playback the recorded image starts from the time when the log was recorded. As pressing a stop button, it will return to an alarm log screen.

5.7.3 HDD Management

The screenshot shows the 'HDD Management' menu with the following table:

No	For	Type	Cap.	Free
▶ 1	Main	IDE (PM)	115.04G	115.04G
2	Main	IDE (PS)	115.04G	115.04G
3	Main	IDE (R)	115.04G	115.04G

Below the table, there are three checkboxes:

- Overwrite Disk When Disk Full
- Clear All Previous Log

At the bottom, the 'Disk Full Message' is set to 95 %.

Annotations on the right side of the image:

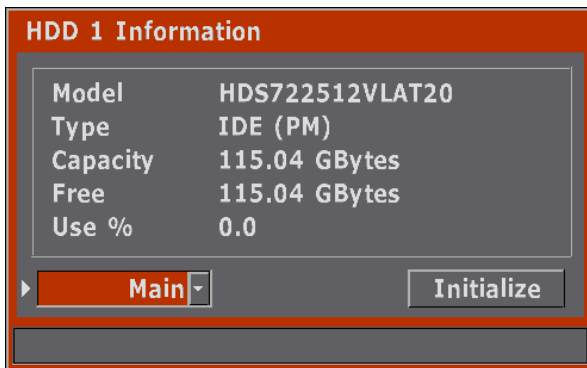
- An arrow points to the first row of the table with the text: "The state of the 1st Built-in HDD. Capacity is 120GB, and Free Space is 120GB".
- An arrow points to the second row of the table with the text: "The state of the 2nd Built-in HDD.".
- An arrow points to the third row of the table with the text: "The state of the removable HDD.".

- set-up HDD
 - Main HDD : Can be used for basic REC.
 - Backup : For backup HDD.
- set-up REC mode of the main HDD.
- set-up overwrite mode.
- Log clear function.
- set-up HDD using percent.

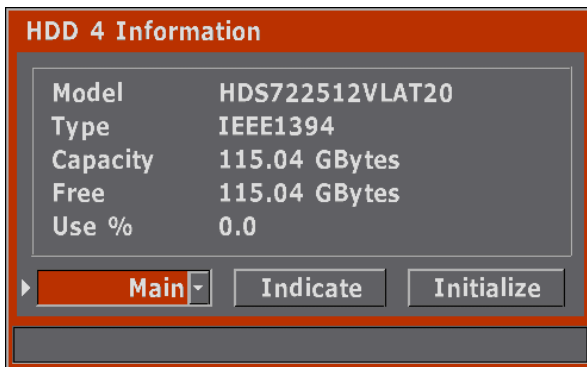
■ Clear All Previous Log

If you check here, and press EXIT button, "Do you want to Update Disk?" is displayed. As pressing "Yes" button, Log information will be deleted.

● HDD Information



● This is for information of Local HDD.



● This is for information of external IEEE 1394 HDD.
As clicking the "Indicate" button, you can know which HDD is.



Please turn off the power when you connect external IEEE1394 or USB with DVR for the purpose of avoiding damage. After power off, connect IEEE1394 or USB device and then turn on the power.



If you reset DVR, you have to power off the IEEE 1394 or USB device.

■ Initialize

•If you press "Initialize" button at Main HDD, "Data stored in HDDs numbered larger than x will be lost. Are you sure?" is displayed. As pressing "Yes" button, HDD will be initialized. Please note all HDD for main after specified HDD is initialized.

•If you press "Initialize" button at backup HDD, "All data in HDD x will be lost. Are you sure?" is displayed. As pressing "Yes" button, HDD will be initialized.

HDD Almost Full!

- It is displayed when HDD is almost full.
- How to Setup New HDD
 - 1) Add new HDD.
 - ① When adding a new HDD, you must turn the power off.
 - ② Backup HDD is only one.
 - ③ It is better to clear the data when an HDD is registered for the first time.



MAIN

IDE1 : Master (Internal HDD)



IDE1 : Slave (Internal HDD)

MAIN/
BACKUP

IDE2 : Slave (Removable HDD)

**Notice**

If you make a mistake during HDD installation or removal, HDD contents can be erased. (Ex. When changing Main HDD to Backup HDD or changing Backup HDD to Main HDD.)

2) Overwrite Disk When Disk Full

Monitor screen displays a similar message as the following according to overwrite on/off.

On **04/29/2004-20:08:18**


Main HDD is full, it starts to overwrite old DATA.

Off **04/29/2004-20:08:18**  **0%**

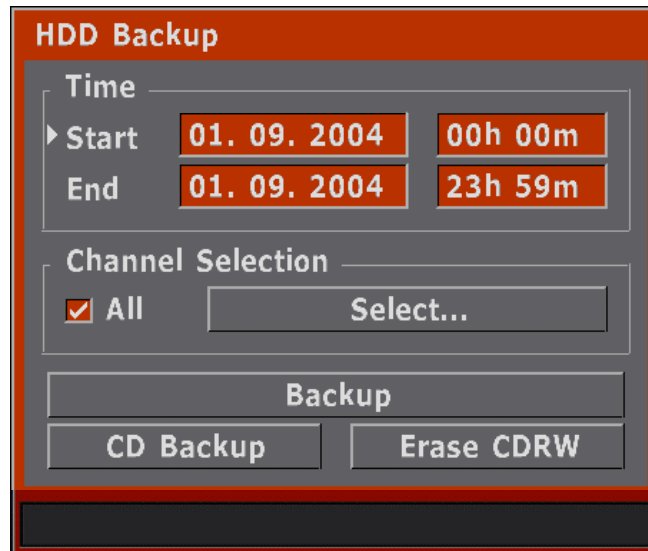
When Main HDD is full (100%), recording is stopped.

3) Clear All Previous Log.

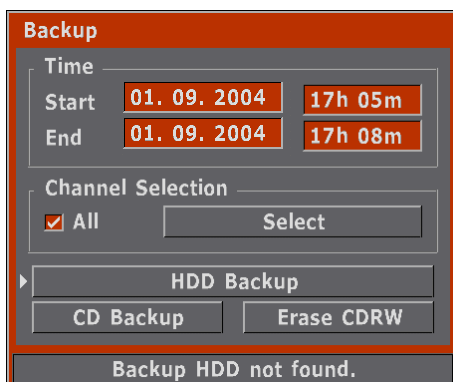
It is the place for initial Log content.
It is better to initiate Log, when HDD or DATA is changed.

 To make back-up with CD-RW etc should be strongly recommended if the important data seems to be recorded.

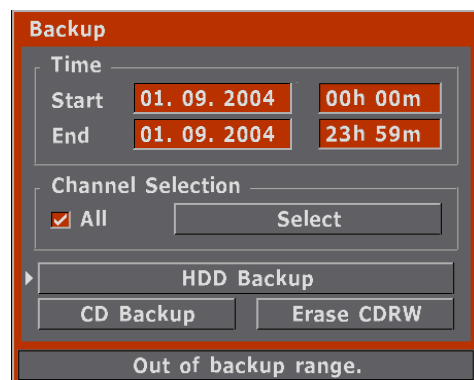
5.7.4 Backup



- Record a portion of the main HDD content to a Backup HDD.
- Must have more than one Backup HDD and recording content of setup date.
- Possible to backup HDD and CD.
- **How to Setup**
 - 1) Set-up start and end dates by using Jog and the right/left button.
 - 2) Select Backup and backup will start.
It is possible for this to take a long time depending upon the motion contents of the system.
 - 3) If there is no data to backup, "Out of backup range" message will display.
 - 4) If there is no HDD to backup, "Backup HDD not found" message will display.
 - 5) For CD-R media, cancellation will damage the CD while it is being backup.
Please press the EXIT button as power off forcibly.



- This message is displayed if there is no Backup HDD



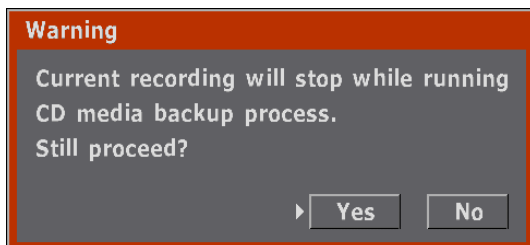
- This message is displayed if there is no date to Backup



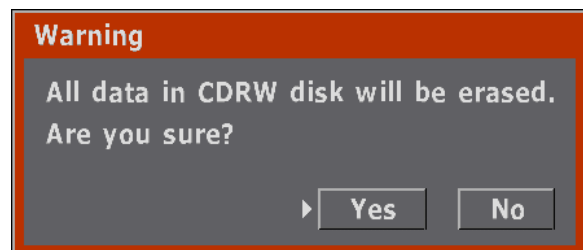
- This message is displayed if there is no CD-recorder when backup at CD.



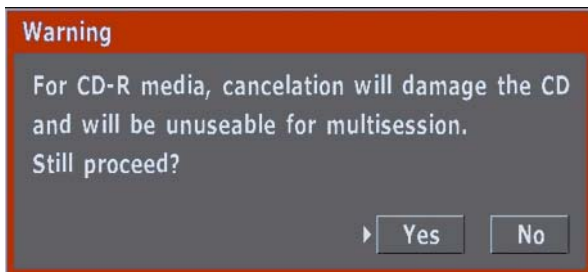
- This message is displayed if there is no CD for backup when backup at CD.



- This message warns that recording is stopped while data is being backed up to a CD-RW.



- This message is for warning the data of CD could be lost while erase CD.



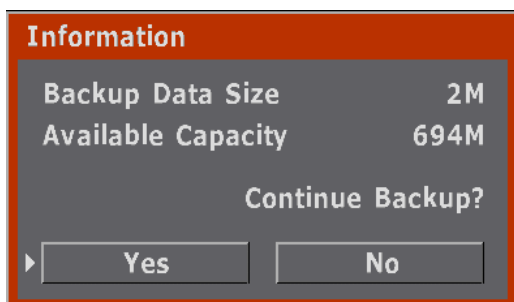
- This is warning message cancellation will damage the CD while it is being backed up.



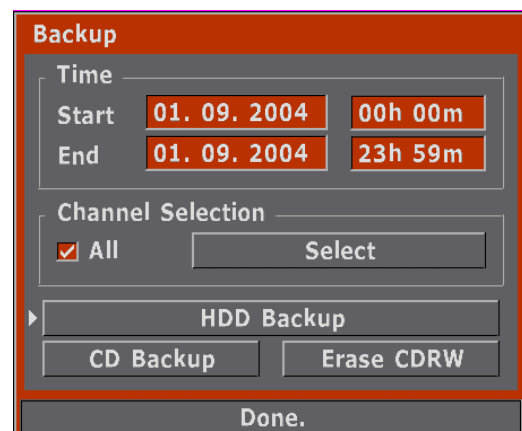
- Decide whether you back up or not after check.



- It means Backup is being progressed



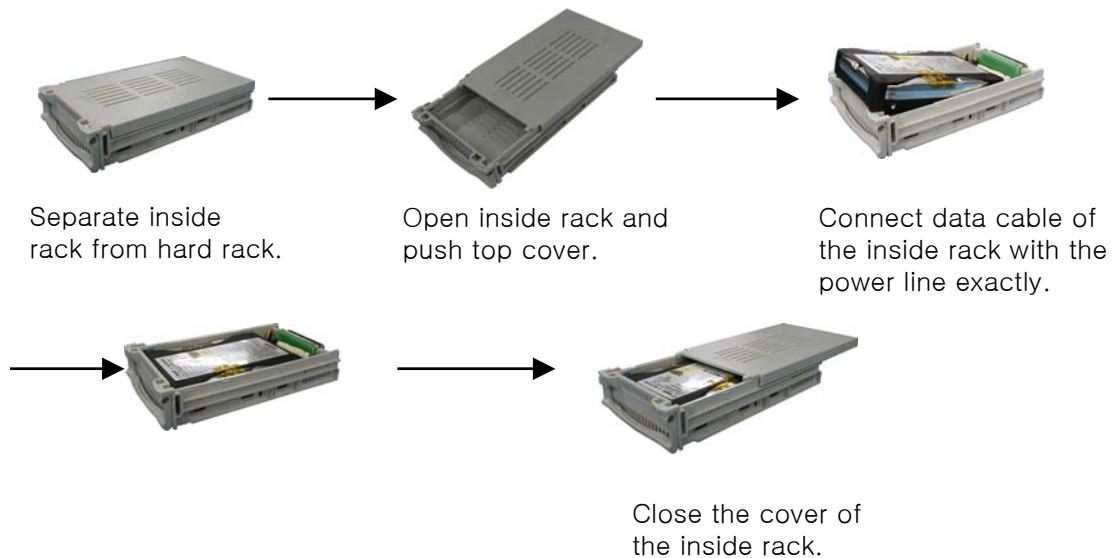
- This message is indicated amount of date and space of CD to use when you back up CD.





- This message is displayed when Backup is done.


● How to connect removable HDD

The jumper of HDD which connects additionally, set-up as slave.
(Refer to HDD's user manual for setup jumper.)

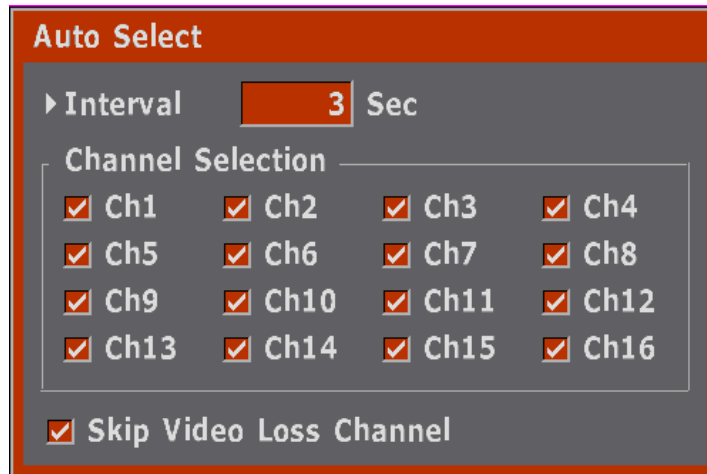


 If Removable HDD is set-up for backup, this HDD's contents are not be able to replay from the remote place.(Monitoring is possible.)

 **Notice**
If the product is being HDD backed-up, you will not be able to use the playback (P/B) via the Internet. (Live monitoring is possible)

 When add HDD or take HDD, please turn off the power. HDD is possible to damage when its' remove while power is on.

5.7.5 Auto Select

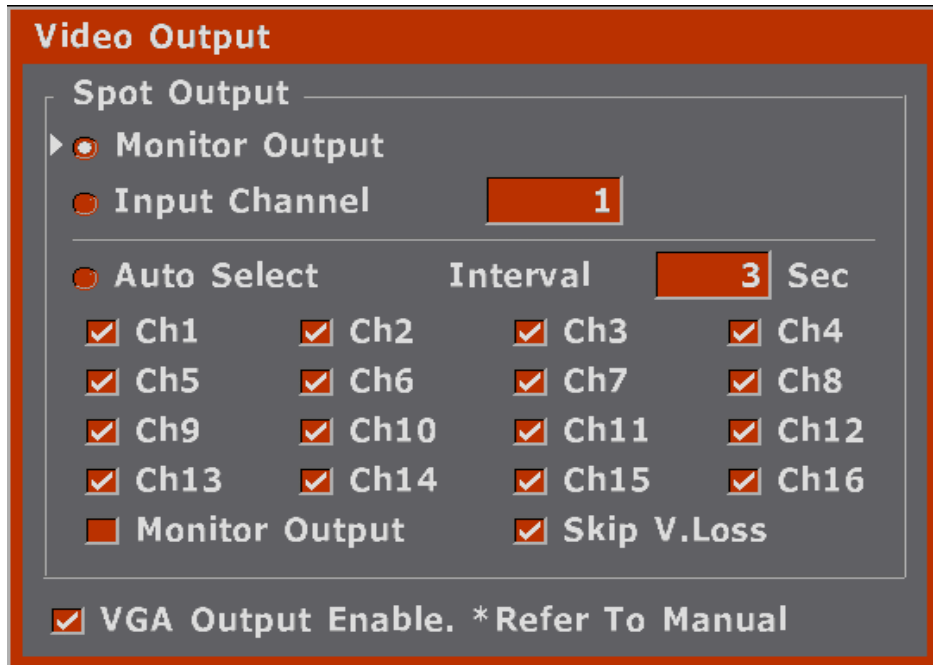


- Select Delay and Skip of the Auto Switch.

- How to Setup

- 1) Auto Select function is for automatic switchover of the Monitor screen.
- 2) Delay of the Auto Switch range is 1 ~ 300sec.
- 3) All Channels are On when the system starts for the first time.
- 4) When select Skip Video Loss Channel, no signal channel is not displayed in case of sequence which is displayed only one channel.
- 5) Auto Select of User Define is automatically switching by mode switching.

5.7.6 Video Output



- Select the Spot Out channel.
- Select VGA output.(If you check the VGA output, monitor screen quality is worse than before.)
- If there is no VGA output on the VGA output port, press the STOP button and DISPLAY button at the front button for about 3sec then VGA output will be on automatically.

● How to Setup

- 1) Select what you want to change by using up/down buttons or Jog.
- 2) When you select Monitor Out, the Spot Out port is the same as the Monitor Out.
- 3) If you select Input Channel, the selected channel is displayed beside Input Channel.
- 4) If you check VGA Output Enable, the image is displayed to VGA port.
- 5) Finish setup by pressing EXIT button.

5.7.7 Administration

The Administration menu is shown with the following options and callouts:

- Network Setup**: This is for remote security.
- Date/Time Setup**: set-up date and time.
- Password**: This is for Setting password.
- Web Password**: This is for setting web password.
- Covert Channel**: Covert Channel allows Administrator to select channels that only they can view.
- Mail Notification**: DVR will send an Email upon events selected during set-up.
- Lock Front Button**: This is for locking front button.
- Lock Remote Control**: This is for locking remote controller.

5.7.7.1 Network Setup

The Network Setup screen displays the following configuration:

▶ IP Address	192.168.0.1
Subnet Mask	255.255.255.0
Gateway	192.168.0.1
DNS Server	192.168.0.1
Web Server Port Number	80

Apply

- You should install the following items for remote search and control by LAN. (Refer to the Internet setup value you want to install.)

● How to Setup

- 1) Move to the place you want to change the setup by using Jog.
- 2) Select contents to change by using the ENTER button.
- 3) Select place to change by using the right/left button.
- 4) Select the number you want by using Jog.

IP Address : _____.

Subnet Mask : _____.

Gateway : _____.

DNS : _____.

Web Server Port Number : ____

**Notice**

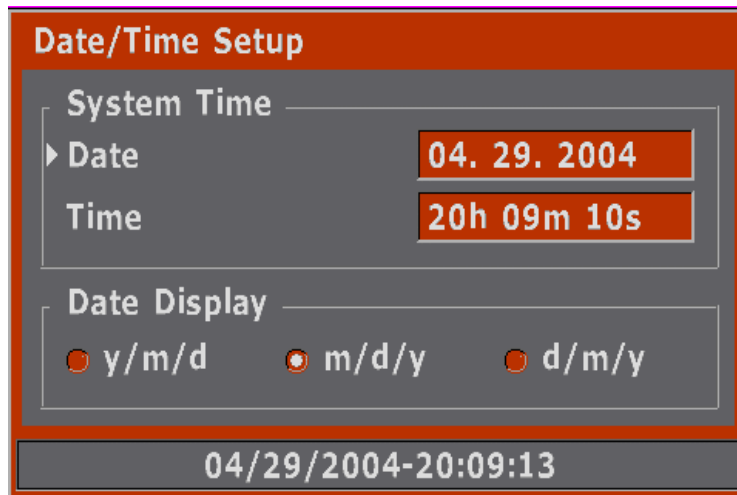
(Possible to have a Network problem when its installation. To avoid this problem consult the network manager for setup values.)

- 5) Setup contents are automatically applied if you press the “ Apply” button and move to a higher menu.



If Port Number is set-up besides 80, monitoring through web browser is not possible. In case of using client program, the port number should be set-up at the client program.

5.7.7.2 Date/Time Setup



- Set-up Date and Time, which will be used in the system.
- Set-up “Date Display”.
- How to Setup
 - 1) Move to the place you want to change the setup by using up/down buttons or Jog.
 - 2) Select contents to change by using the ENTER button.
 - 3) Select the place to change by using the right/left button.
 - 4) Select the number you want by using Jog.

Date (year/month/day) : ____:____:____

Time (hour/minute/second) : ____:____:____
 - 5) Select the type of display.

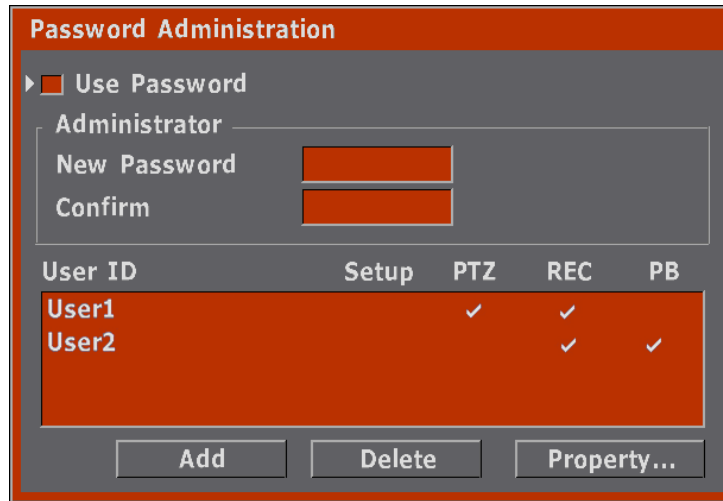
y/m/d m/d/y d/m/y

(Default setting is m/d/y (VR-616U) or d/m/y (VR-616E))
 - 6) Setup contents are automatically applied if you move to a previous menu.




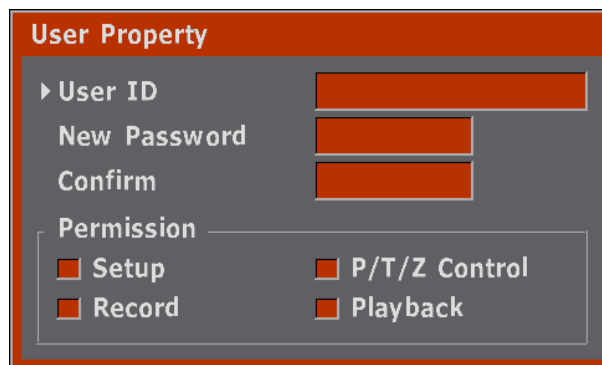
When the "system time" is changed and then the same time image was recorded, The Playback image is performed in the recorded order. On the searches mode, it should jump to the designated time out of two recorded images.

5.7.7.3 Password

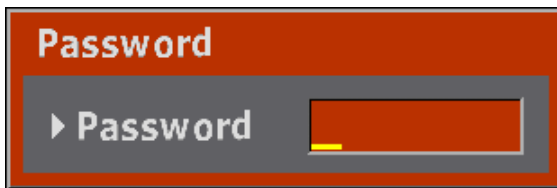


- You can use a password for system security.
- Password mode will display as click the check box.
- The password must 4 digit numbers.
- Enter “New Password” and “Confirm” through Channel Selection buttons.
Please use the each 1–9 Channel Selection button.
- Setup : Setup menu, PTZ : Control camera, REC : Recording
PB : It means playback.

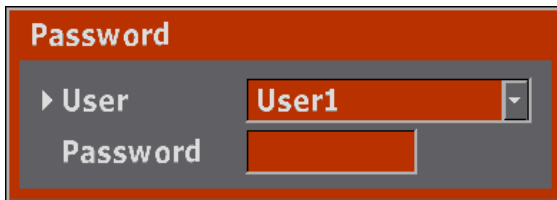
 When the "Use Password" on the "Password" menu is checked, a default password will be set-up if it changes the other view from the menu without inputting a password. The default password is "1234".



- As pressing "Add" button, the upper screen will be displayed.
- Each user may have their own unique ID.
- Each user may have their own unique password.
- Each user have a different permission to use. Even user have setup right, some menu can not access. (ex. Administration)
- For input User ID, using right/left buttons and up/down buttons (or JOG).
- Enter “New Password” and “Confirm” through Channel Selection buttons.
Please use the each 1–9 Channel Selection button.

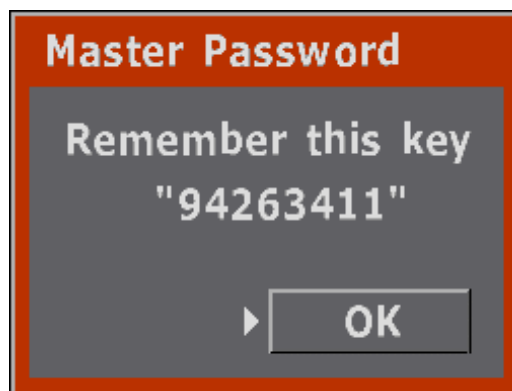



- It is displayed if there is no User ID.



- It is displayed if there is User ID. Please input a password after choosing a user name.

- This message is displayed when enter "MENU" after setting password.
- Enter the Password.
- If you input wrong password, you can not enter the MENU. If you input wrong password 3 times, MENU screen will disappear. To input password again, please press the MENU button.



 If you operate quickly, possible to miss Master Password. Please be careful.

- It is displayed when using Admin Password for the first time. It shows for one time when set-up password after initializing system.
- It is important to remember the Master Password and write down in a secure place.
- Enter Master Password on Password.
- As use Master Password, possible to enter to the menu.

● How to Setup

- 1) Check the box to activate passwords.
- 2) Select a new password and then enter again for confirmation.
- 3) Select a new password by using Jog.
- 4) Enter “New Password” and “Confirm” through Channel Selection buttons. Please use the each 1–9 Channel Selection button.
- 5) As “Setting” select, password is changed.

! Notice

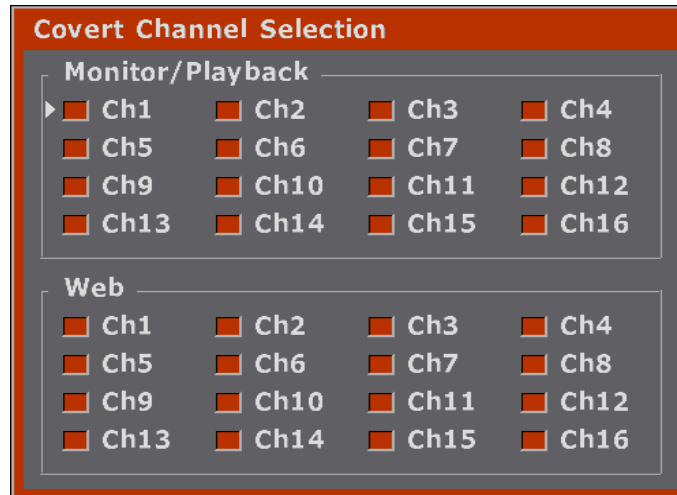
If you forget the password, you can not operate the system! Please be sure to remember the password or write it down in a secure place.

5.7.7.4 Web Password

User ID	Password
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

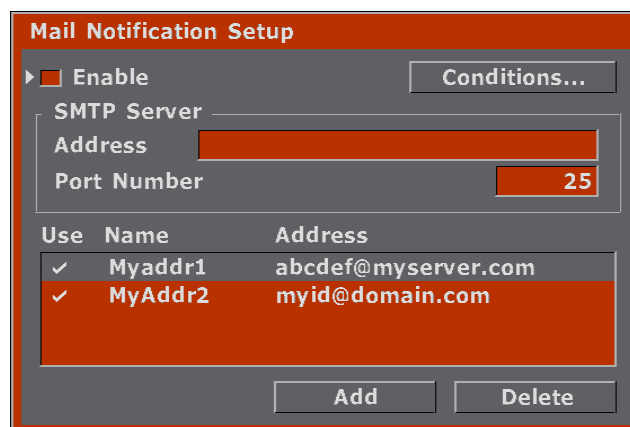
- This is for remote control by using Network.
- A user ID containing 8 numeric characters is possible.
- After selecting by jog, press the ENTER button for setup. Please use the each 1–9 Channel Selection button.

5.7.7.5 Covert Channel

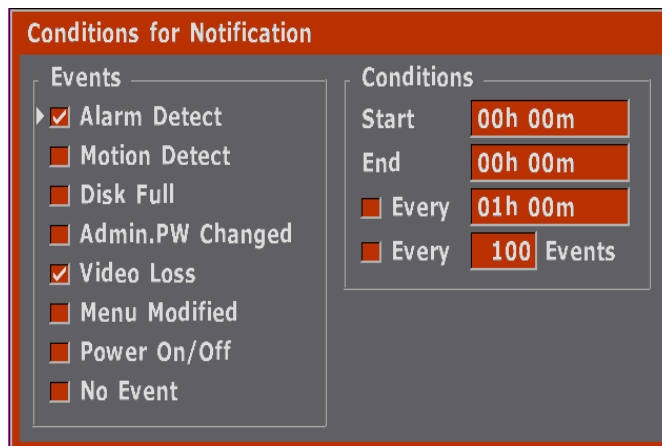


- Covert Channel Selection should be setup to use password.
- The selected channel at Monitor/Playback is only possible to record and live screen or playback screen is displayed with V-Loss.
If you want to see playback screen, you must use Administrator Password.
- The selected channel from the Web is not able to see live or playback screen through the Web.
- It is not reflected in SPOT OUT.

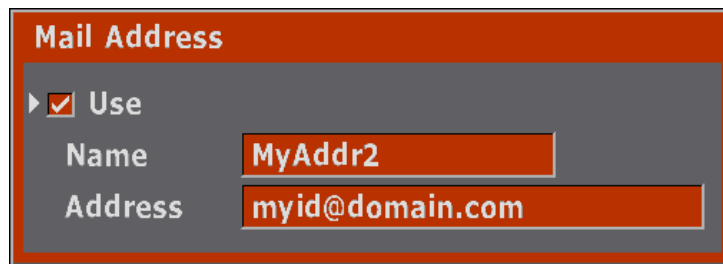
5.7.7.6 Mail Notification



- Events selected at setup can automatically send email notification to event.
- The email address list remains active for all events.
- A list of SMTP and Email address may be set-up initially and updated to send event notification.



- **Events** :DVR will send an email when any of the checked events occur.
- **Conditions** : It sends email at Start and End time as setup.
 - 1) Start/End : Defines the time interval during which emails will be sent based upon the selected events.
 - 2) Every (Time): Defines that every time a selected event occurs an email will be sent every hour of time.
 - 3) Every (Events): Defines that every time a selected event occurs an email will be sent regardless of time.
 - 4) For sending email, it must to be checked both Every except follow condition.
 - 5) Every Events are limited to 100 units so if you set-up Every Events at 100, it sends email as 100 events are happened regardless of time intervals. (Every Time)
- Both Every (Time) and Every (Events) are checked.
 - As events are happened as Every (Events) during Every (Time), send email
- Only Every (Time) is checked.
 - Each setup Every (Time), send email.
- Only Every (Events) is checked.
 - As events are happened as setup at Every (Events), send email.
- In case of nothing checked.
 - Do not send email.



- An 8 character ID may be selected to identify a recipient.
- Email address are entered into the menu and can include up to 128 characters.

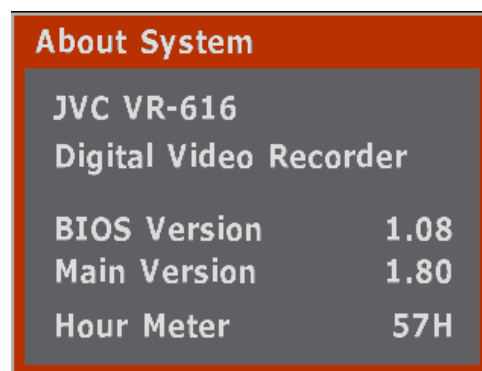
5.7.7.7 Lock Front Button

- **Lock Front Button** : This selection will lock the front panel buttons to prevent unauthorized operation. Only the Menu and Operation button will operate.
- When you press the LOCKED button, the message is displayed on "the button is locked" for a moment.

5.7.7.8 Lock Remote Control

- **Lock Remote Control** : This selection will lock out use of the IP remote control to prevent unauthorized operation.
- When you press the LOCKED button, the message is displayed on "the button is locked" for a moment.

5.7.8 About System



- This is Software and Bios version of the System.
- Hour Meter indicates the passage time after DVR is on.

5.7.9 Default in Setup Menu

Camera Setup	Recording Setup	Alarm Setting
Name : Not installed Control ID : the same as a camera No. Reverse Pan : OFF Reverse Tilt : OFF Brightness : 50 Contrast : 50 Saturation : 50 Hue : 0 Select Model : None Baud Rate : 9600bps	Manual Recording : ON Schedule Recording : OFF (Recording Schedule : 00:00 – 23:59) (Specific Days : Not installed) Always : ON, MAX/1 sec Alarm : OFF, MAX/1 sec Motion : OFF Quality : 5 Audio : OFF Pre-Recording Time : Middle Time Post-Recording Time : 3sec Alarm Input : the same as a camera No. Motion Detect : Full (Aria Define : Not installed) Sensitivity : 10 Sensing Speed : 10	Alarm Name : Not installed Alarm Input 1-16 : All OFF Events : All OFF (Video Loss : All) (Motion : All) Alarm Off : Manual (Auto : 5sec)
Audio Setting	Menu Setup	HDD Management
Master Gain : 0 Bypass : ON Related Video Channel : 1	Language : English Transparency (Status) : 0% Transparency (Menu) : 0%	Overwrite Disk : OFF Clear All Previous Log : OFF Disk Full Message : 95%
Auto Select	Video Output	Administration
Interval : 3sec Channel Selection 1-16 : All ON Skip Videl Loss Channel : ON	Spot Output : Monitor Output (Input Channel : 1) (Interval : 3sec) (Ch1-16 : All ON) (Monitor Output : OFF) (Skip V.Loss : ON) VGA Output Enable. : OFF	Web Server Port Number : 80 Date Display : m/d/y (VR-616U) d/m/y (VR-616E) Password : Not installed Web Password : Not installed Covert Channel : Not installed Mail Notification : Not installed Port Number (SMTP Server) : 25 Lock Front Button : OFF Lock Remote Control : OFF

● Design and specifications are subject to change without notice.

5.8 Monitor Display



● Recording Status (According to color)

- 1) GREEN : Camera is Recording. (Always recording)
- 2) RED : It means it is being Event recording by motion detection or alarm input.
- 3) BLUE : It means DVR is on monitoring.
(No recording, just for monitoring)
- 4) WHITE : No input signal status.

5.9 Playback



- The above picture will be displayed by pressing the PLAY Button.

- **How to Setup**

- 1) Please enter the date and time.
- 2) Press "Play Start", the playback screen is displayed according to the date value. The menu button can be used as a shortcut key of the "Play Start" button. The PLAYBACK starts without cursor position.
 - Play Audio : You can listen to the recorded audio if input.
 - Auto Repeat : After completing playback, picture returns to the first playback screen automatically.
 - Continuously : After completing playback of video selection, it will restart to replay images from the start of selection.
 - From The Beginning : Replays images beginning at the start of HDD.
 - Backup HDD Search : Search contents of the backup HDD.
 - Backup CD Search : Search contents of the backup CD.
 - Recording Event List : Log screen is displayed which records activity triggered by alarm or Motion. Possible to check recording contents according to Event.



Note

- If you press the PLAY and MENU button together, Play is begun.
- If you press the PLAY button twice, it replays like Continuously condition.
- If you press the STOP button during the play mode, play is stopped.
- The playback speed may not be the consistent with the record speed.
- A motion may become unnatural at the time of playback.
- When a PLAYBACK the image during record with checked to "Auto repeat" on the PLAYBACK menu and then PLAYBACK image was cached up the live recording point, the PLAYBACK image should be jumped to the oldest recorded one. If you replay past time than the time which is recorded on HDD, it is replayed the first recorded screen.
- During replay external IEEE1394 HDD, screen should wave because of data transfer speed.
- If DVR has HDD impact or other damage during replay, screen could be stopped in a moment or different channel could be displayed.

● **Motion by Mix Button**

If you press the Display button and Mode button (Image Sequence, Triplex) during the play mode, the screen format is displayed with Multi/Image Sequence/Triplex.

- 1) **DISPLAY** : Recording channel is displayed with a 1/4/9/16 screen.
Because "Multi" is able to check several channels simultaneously, it is useful to search quickly.
- 2) **IMAGE SEQUENCE** : Multiple images from a single camera are displayed in order in which they were recorded in a 16 image screen format.
- 3) **TRIPLEX** : Possible to view playback while monitoring.

● **Jog & Shuttle motion**

- 1) It is more convenient to search by using Stop, Pause, Replay, Play, Jog, Shuttle.
- 2) Possible to reproduce each frame by using Jog from the pause screen.
- 3) Enable quick search by using Shuttle.

● **Backup HDD Search**

- 1) Recorded contents of the Backup HDD are displayed.
- 2) You can view recorded contents by using the Jog and ENTER buttons.

● **Recording Event List**

- 1) Contents of Alarm/Motion are displayed at the Log View.
- 2) You can view recorded contents by using the Jog and ENTER buttons.

5.10 Power Off



- You can power off by using the front operate switch.

- ! If system is to not be used for long periods of time, turn off the rear panel power switch. If the rear power switch is in the on position, DVR will reboot after a power failure.
- ! You must wait at least 15 seconds after shut down before removing the removable HDD.

6. External Backup

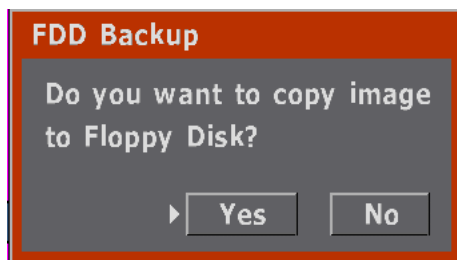
6.1 External USB Port

6.1.1 Connect with External USB Port

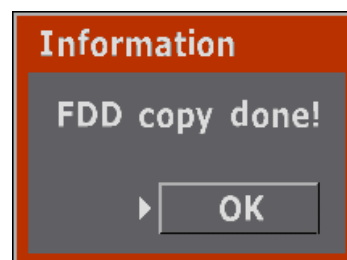
USB1.1 port will allow you to connect to a FDD, Zip Drive or USB memory device to record still images from the DVR.

6.1.2 How to Backup

Connect with external USB port after selecting the image in full screen mode. If there is power on, please turn off the power then connect with USB device.



Format FDD.



backup is done at USB FDD.

● How to Setup

- 1) Pause the full screen after playback you want to backup.
- 2) Press the direction button (▶) then FDD backup menu will display.
- 3) Press the ENTER button for setup.
- 4) Recorded still image could be checked from private Client Program.



If you reset DVR, you have to power off the IEEE 1394 or USB device.



The data file which is stored at USB is showed as like ****.601.

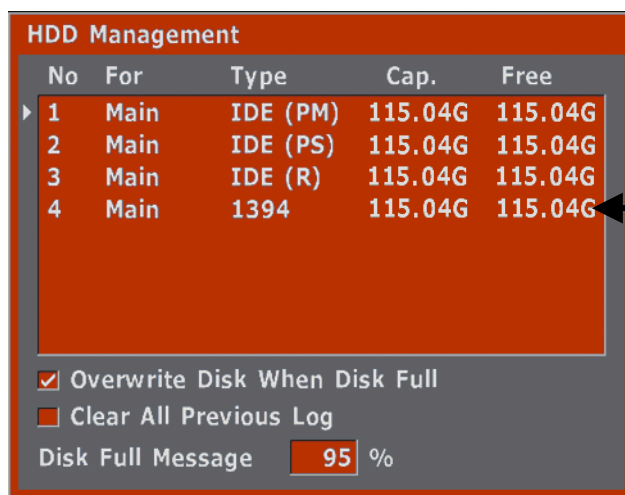
6.2 External IEEE 1394 Port

6.2.1 Connect with External IEEE 1394 Port

The IEEE1394 port is used to connect to external devices as a HDD or CD-RW drive to back-up images.

6.2.2 How to Connect with IEEE 1394 Port

Connect with external IEEE1394 port as blow picture. If there is power on, please turn off the power then connect with IEEE1394 device.



The left picture will appear on HDD Management as connecting HDD with external IEEE 1394

- As selecting system/HDD Management at Setup Menu, the above picture is displayed.
- After confirmation that status is correct, select HDD and set-up for normal operation.
- IEEE1394 HDD is able to use Main or Backup and possible to playback as well.

※ **Note**

IEEE1394 enables direct connection up to 4 device.



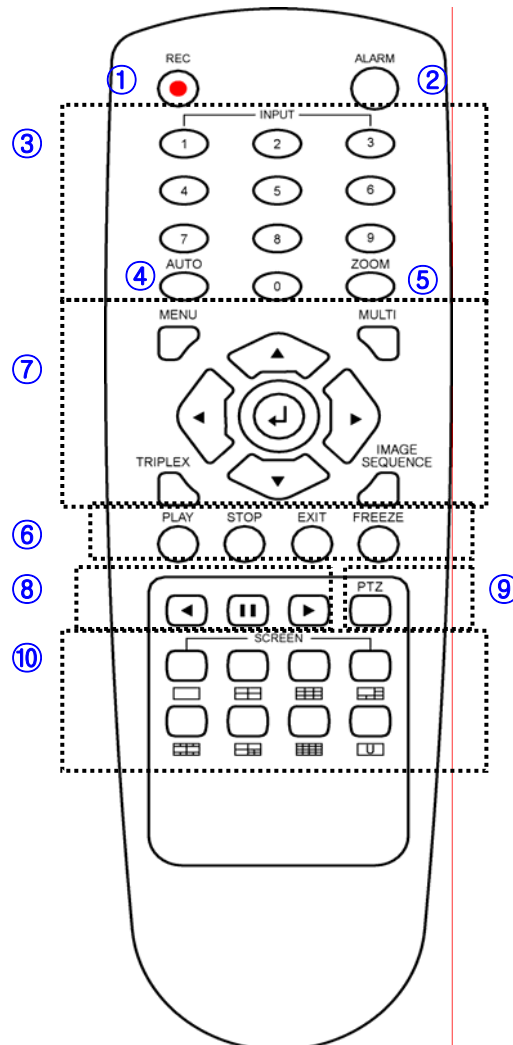
If you reset DVR, you have to power off the IEEE 1394 or USB device.



During replay external IEEE1394 HDD, screen wave is possible because of data transfer speed.

7. Remote Controller

7.1 Outline




! For the first step, you should give an ID for control DVR by one remote controller.

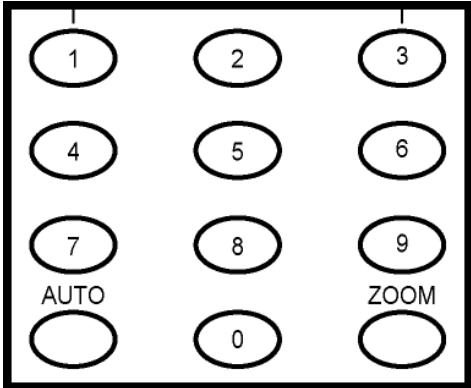
- 1) Press one of INPUT button (1~9) and STOP on DVR at the same time then the number which you pressed will be the ID.
- 2) Press INPUT button (1~9) on remote controller for 3 seconds then remote LED on front panel of DVR will be flickered.
- 3) This DVR has ID by pressed button number.
Make sure there is no same ID as using several DVR.


! For control DVR by remote controller, press the number buttons(1~9) which are the same with DVR ID, for about 3 seconds. If you do not designate DVR ID, you can not control remote controller so you must set-up ID of remote controller for the first.

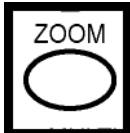
7.2 Details

①  ● REC Button : When the REC LED is on, DVR is recording as per set-up instructions.

②  ● ALARM RESET Button : Stops the Alarm Output.

③  ● INPUT Button : These buttons are used to select the screen monitors and to change the channel settings at the menu. If you want to change channel, press 01,02,03, ..., 10,11, ..., 16.

④  ● AUTO Button : The Input channel is automatically switched in proportion to the speed setting at the menu.

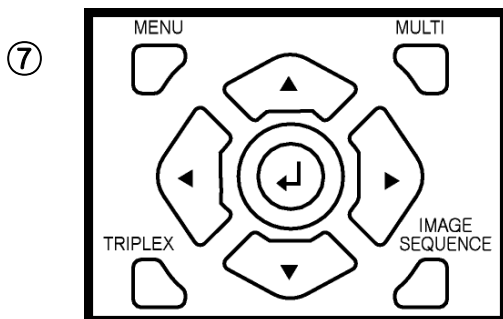
⑤  ● ZOOM Button : This is used to zoom a freeze-frame in playback mode. Power is X2.

● PLAY : This button is for playback.

⑥  STOP : To stop playback.

EXIT : To exit the menu after completing setup.

FREEZE : For pause the image.



● **MENU** : This button is for selecting or canceling the monitor setup menu mode.

MULTI : This button is for canceling Image Sequence or Triplex mode.

TRIPLEX : To see live and PB screen at the same time as making replay screen to PIP mode.

IMAGE SEQUENCE : Changes playback mode to sequence of images from single camera.

ENTER : For applying setting value.

Up/Down/Left/Right Button : For moving Menu to Menu.



● **REVERSE PLAY, PAUSE, FORWARD PLAY** :

These buttons are used for controlling the playback. At the Menu mode, Reverse Play Button is used for Cancel and Forward Play Button is used for Enter.

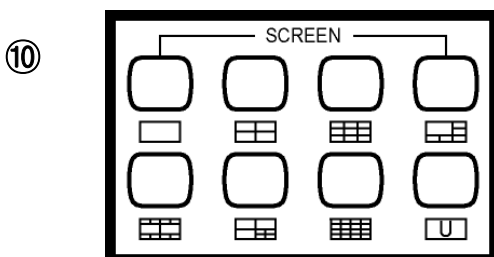


● **PTZ Button** :

This button is for Camera control.

◀ / ▶ Button: Choose the item.

▲ / ▼ Button : For control.



● **SCREEN Button** : This button changes display mode to the various configurations available.



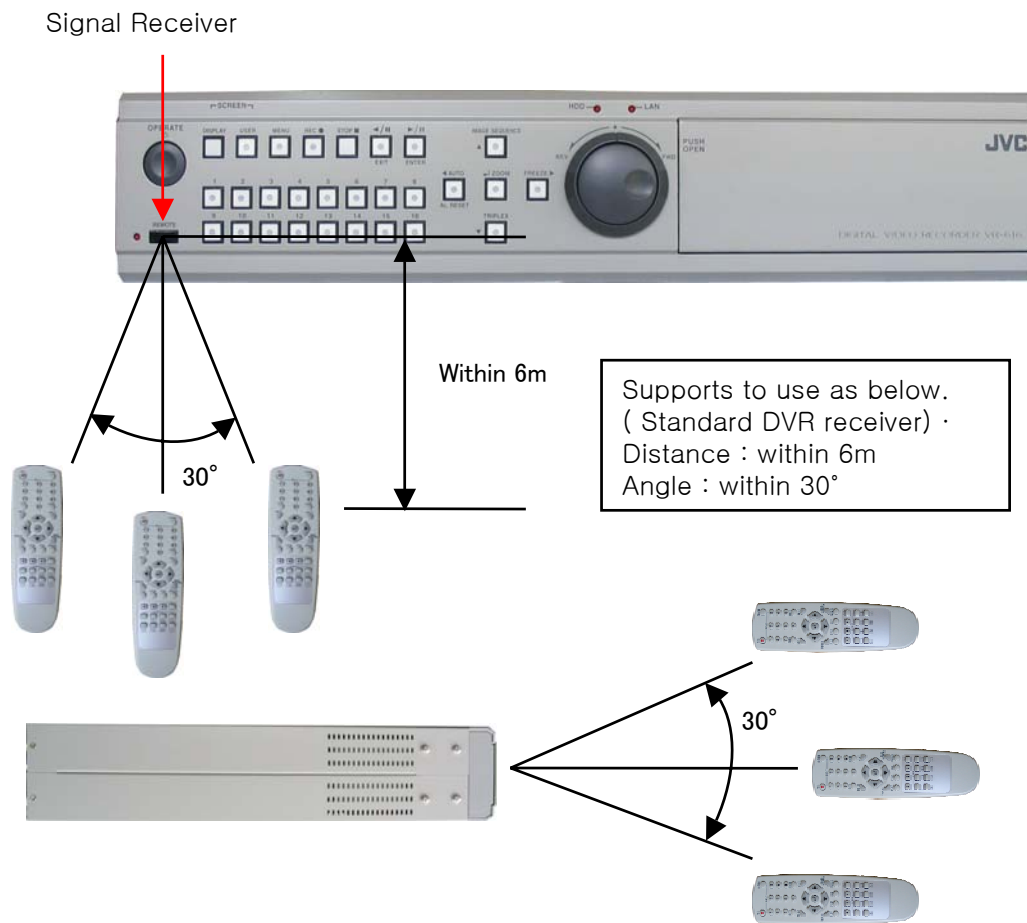
CAUTION

Risk of explosion if remote controller's battery is replaced by an incorrect type.
Size : AAA size, Rating : DC 1.5V



For using remote controller after restarting DVR, operate again from the start.

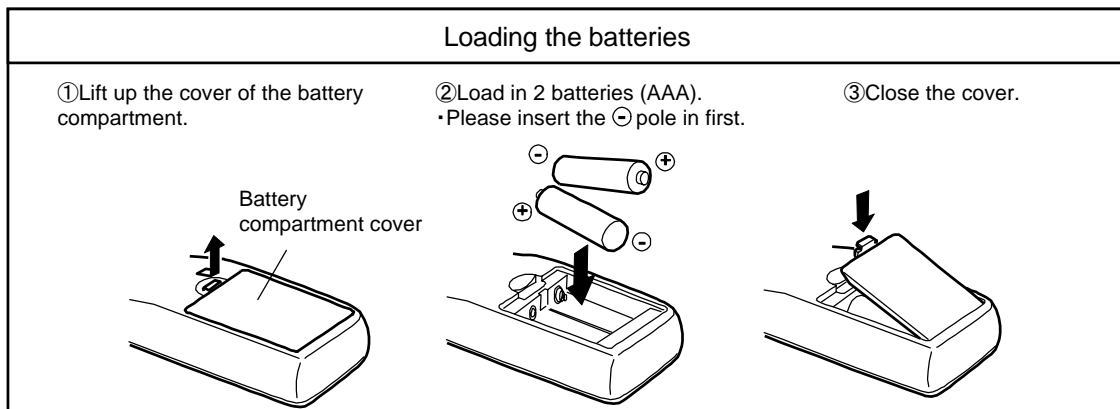
● Working Range of Remote Controller



! Do not leave any material near the signal receiver between remote controller and DVR. Remote controller could not be controlled as closing direct light or strong lighting. Do not press DVR and remote controller's buttons at the same time. Disorder is possible.

•Guide on battery replacement.

When the operatable distance of the remote controller is decreased, the batteries have become exhausted. Please replace to new batteries (AAA, a Manganese dry battery).
(Guide for replacement: Approx 10 months based on average usage of 2000 times a day.)



8. Troubleshooting

Symptom	Cause	Action
Power cannot be turned on.	● Is the power cable properly connected?	● Plug the supplied power cable to the outlet
[REC] and [PLAY] buttons do not work.	● Is the Operation Lock turned on?	● Turn off the Operation Lock
REC cannot be started even if pressing [REC] button.	● Is it in the state of Timer Standby?	● Remove the check of "schedule recording".
Playback image is not displayed on the monitor.	● Is the monitor properly connected?	● Connect the monitor properly.
Menu screen is not displayed.	● Is the Operation Lock turned on?	● Turn off the Operation Lock
Unable to play back audio sound.	● Is the audio recording selected when recording setup? ● Is audio volume properly setup when audio recording?	● Select audio recording when set-up recording. ● set-up audio volume properly when set-up audio recording.



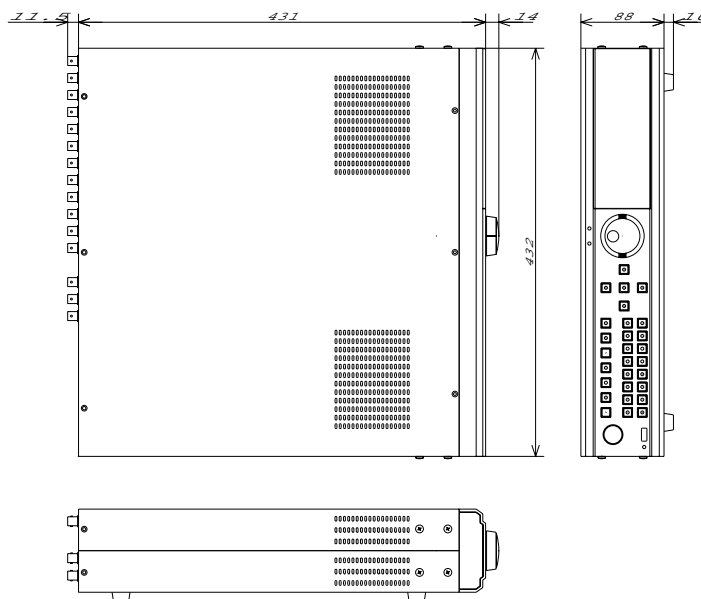
If there's any other problem, contact your nearest JVC dealer.

9. Specifications

Parts	Item	VR-616 U/ E	
Number of Channels	Q'ty (EA)	16	
Camera Input Signal	Video Signal	NTSC	PAL
	Signal Input	Composite 1.0V With Loop Output, BNC	
Input Signal Processor	Compression Type	Wavelet based	
	Resolution (H*V)	720*240	720*288
	Compression	7 Mode	
Monitor Output (Composite)	Q'ty (EA)	2	
	Video Level (Vp_p)	1.0	1.0
	Burst Level (Vp_p)	0.286	0.3
Monitor Output (Y / C)	Q'ty (EA)	1	
	Y Level (Vp_p)	1.0	1.0
	C Level (Vp_p)	0.286	0.3
VGA Output	Q'ty, Type	1EA, 15Pin D-SUB Jack	
SPOT Output	Q'ty, Type	1EA ,Composite 1.0Vp_p 75 Ohm BNC	
Output Display Mode	Live	Full/4/6/7/9/10/16/Zoom	
	User & Live	4/6/7/9/10/13/PIP	
	Playback	Full/4/9/16/Sequence/Zoom	
	Triplex	Live & REC & Simultaneous PB	
	Auto Select Time	AUTO Mode 1-300sec, CH Skip Function	
	Search Mode	4 Mode (Date, Time, Channel, Event)	
Audio Signal Processor	Audio Input	1 channel, Mono RCA Jack	
	Audio Output	1 channel/ Mono, -5dB RCA Jack	
	Sampling late	8 kHz	
System Control Part	HDD Control	ULTRA DMA IDE Internal & Removable Type	
	HDD Q'ty (EA)	2	2
ID Character Display	Q'ty	Max 16EA/channel	
	Character	Capital/Small Letter, Digit, Symbol	
Time Display	Mode	yy/mm/dd/, mm/dd/yy, dd/mm/yy, hh/mm/ss	
Back_up & Copy	IEEE1394	1EA, HDD, CD-R/RW	
	USB	2EA, Flash Memory, FDD	

Alarm Control	Alarm Input	16EA, Low Active Alarm , TTL Level	
	Alarm Output	4 EA, Low Active Alarm, TTL Level Open collector	
	Output Mode	Alarm Input, V-loss, Motion, Disk Full, Admin-PW Changed	
	Log Display	Date & time, CH, Name, Event	
Motion detect	Mode & Grid	Full/Grid(16H*12V)	
	Sensitivity	10 Step	
	Velocity	10 Step	
Network & Camera Control Part	Serial I/O Port	RS-485 (1EA):3P Terminal	
	LAN	1EA, Ethernet 10/100M , RJ-45P	
Record Processor	Mode	Time-Lapse/Motion/Alarm	
	Rec. Rate	Max at 60fps	Max at 50fps
	Time-Lapse Rate	30F/1sec ~ 1F/60sec	25F/1sec ~ 1F/60sec
Recording	Mode	Schedule & Manual	
Schedule Recording	Day setup	7EA, Sun, Mon, Tue, Wed, Thu, Fri, Sat	
	Special Day	Max 16EA	
Power Supply	AC Input (V, Hz)	120V, 50Hz/60Hz (VR-616U), 220V-240V, 50Hz/60Hz (VR-616E)	
	Fuse	T6.3AH 250V	
Current Consumption	A	1.2 A (VR-616U), 0.6 A (VR-616E)	
Operating Humidity	RH	30%RH – 80%RH	
Operating Temperature	°C (°F)	5 °C – 40 °C (41 °F – 104 °F)	
Size	W*H*D (mm) (Inch)	432 x 88 x 431 (17 x 3.46 x 17)	
Weight	w/o Packing	9 Kg (19.8 lbs)	
Accessory	Power Cord	1	2
	User Manual	1	1
	Remote Control Unit	1	1
	Battery	2	2
	CD-ROM	1	1
	Lock Key	2	2
	Rack Mount Bracket	2	2
	Rubber Foot	4	4
	Screw	4	4
	I/O connector	4	4
	Rack Handle	2	2
	Screw	4	4
	Screw	4	4

<Appearance>



unit : mm



Specifications and appearance of this unit are subject to change for improvement without prior notice.

VR-616 DIGITAL VIDEO RECORDER



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