FURUNO

INSTRUCTION MANUAL

VDR MAINTENANCE VIEWER

MODEL VR-3000/VR-3000S

This manual is solely for use by the installer. Under no circumstances shall this manual be released to the user.

The installer shall remove this manual from the vessel after installation.

This manual contains no password data. Obtain password data from FURUNO before beginning the installation.

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ECF
(Elemental Chlorine Free)
The paper used in this manual
is elemental chlorine free.

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A 30 June 2008	VR-3000 SYSTEM 2450031-02 RAP 2450026-01	1st Printing
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This manual describes how to set the VR-3000/VR-3000S after installation. The outline of the setup is as below.

Step 1. Network setting on PC and VDR
Step 2. Software setting
Step 3. Backup data setting
Step 4. Software configuration from file data
Step 5. Media management
Step 6. Other functions

After setting up, make a backup copy of configuration data onto the CompactFlash (CF) and the PC.

Parts and Equipment needed

a) PC with Internet Explorer 6.0
b) Ethernet cross cable

1. How to Set the PC

Before connecting to VR-3000/VR-3000S, set the IP address and subnet mask of the PC as below. The IP address of VR-3000/VR-3000S is 10.0.0.100.

How to set IP address and subnet mask on Windows XP

1. Click Start, Settings, Control Panel and Network and Dial-up Connections.
2. Click Local Window Network, Properties and Internet Protocol (TCP/IP).
3. Click the **Properties** button.
4. Choose “Use the following address”.
5. Enter IP address and subnet mask:
   IP address: 10.0.0.102 or 10.0.0.99 (other than 10.0.0.100).
   Subnet mask: 255.0.0.0.
6. Click the **OK** button and then click it again.

How to set IP address and subnet mask on Windows Vista

1. Click Start, Control Panel, Network and Internet, Network and Sharing Center.
2. Click View status to show the Local Window Connection Status dialog box and click the **Properties** button.
3. Select Internet Protocol Version 4 (TCP/IP v4) and click the **Properties** button.
4. Select "Use the following IP address" and enter IP address and subnet mask:
   IP address: 10.0.0.102 or 10.0.0.99 (other than 10.0.0.100).
   Subnet mask: 255.0.0.0.
5. Click the **OK** button and then click it again on the next screen.
6. Restart the PC.

How to install the Maintenance Software

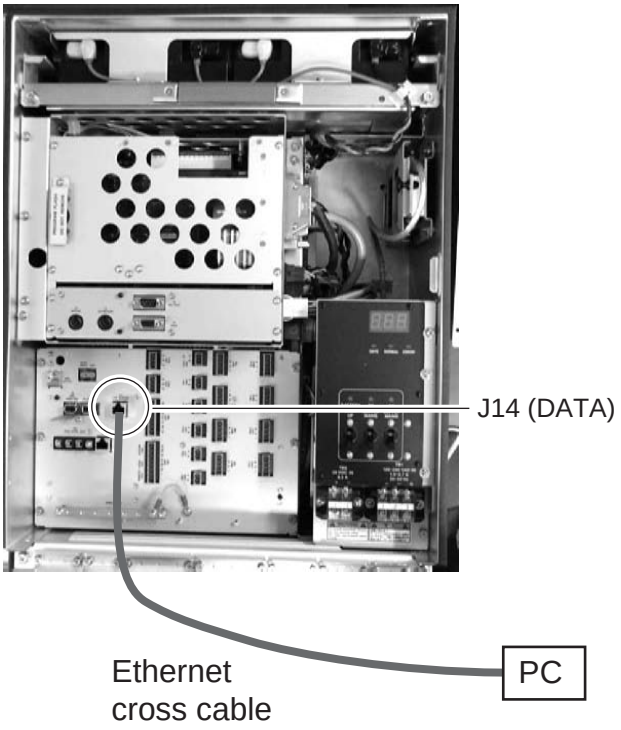
Live Player V4 and the VDR Maintenance Viewer Program are included on the accessory CD. Install these programs onto the PC.

1. Place the CD in the PC CD drive.
2. The CD contents are displayed in a window. Double click on the file “view.exe”. The Installation Wizard opens.
3. Follow the directions of the Installation Wizard.

The Live Player V4 and Maintenance Viewer are installed onto the computer. The Live Player V4 is not required for use here.

Connection

Use an Ethernet cross cable to connect a PC to J14 (DATA) in the DCU.



2. Software Configuration

Disconnect the Remote Alarm Panel until the software configuration is completed, otherwise an alarm (grabber failure or no radar video) sounds.

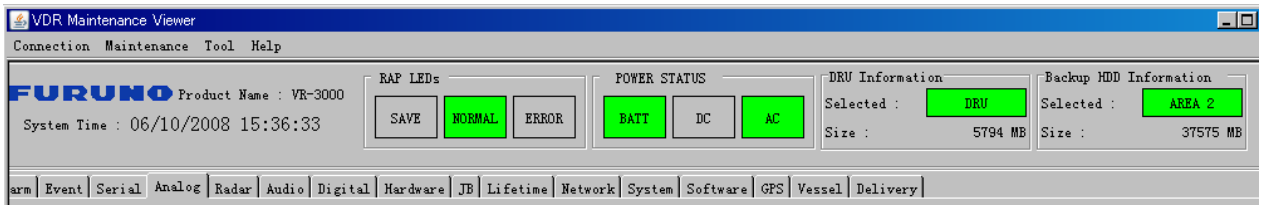
Procedure:
1. In the Maintenance Viewer, log in to Serviceman.
2. Download the configuration data from the VDR into the Maintenance Viewer.
3. Set each tab. (Refer from section 2.2 for further explanation).
4. After each tab has been set up, save the data to the VDR.
5. Lastly, click the **write** button to backup the set data to the DRU, Backup HDD and the CF.

2.1 Preparing the software setup

To configure VR-3000/VR-3000S software with the VDR Maintenance Viewer, do the following:

1. Make sure that the PC and DRU are connected securely to the DCU.
2. Turn on the VDR and wait about three minutes.
3. Download “equip.xml” from the VDR to the PC using the following steps:
    1. Open Internet Explorer on the PC.
    2. Enter the URL ftp://10.0.0.100/pub/ to access the VDR from the PC.
    3. Copy the file “equip.xml” and paste it onto the PC desktop.
4. Start the VDR Maintenance Viewer.
5. Enter the IP address10.0.0.100 in the Maintenance Login dialog box.
6. Checkmark “Serviceman”, enter the password and click the **OK** button.

    Note: Do not release the password to unauthorized personnel.



If the connection is successful the information shown below appears in the status window.
- System Time
- RAP LEDs
- POWER STATUS
- DRU Information
- Backup HDD Information

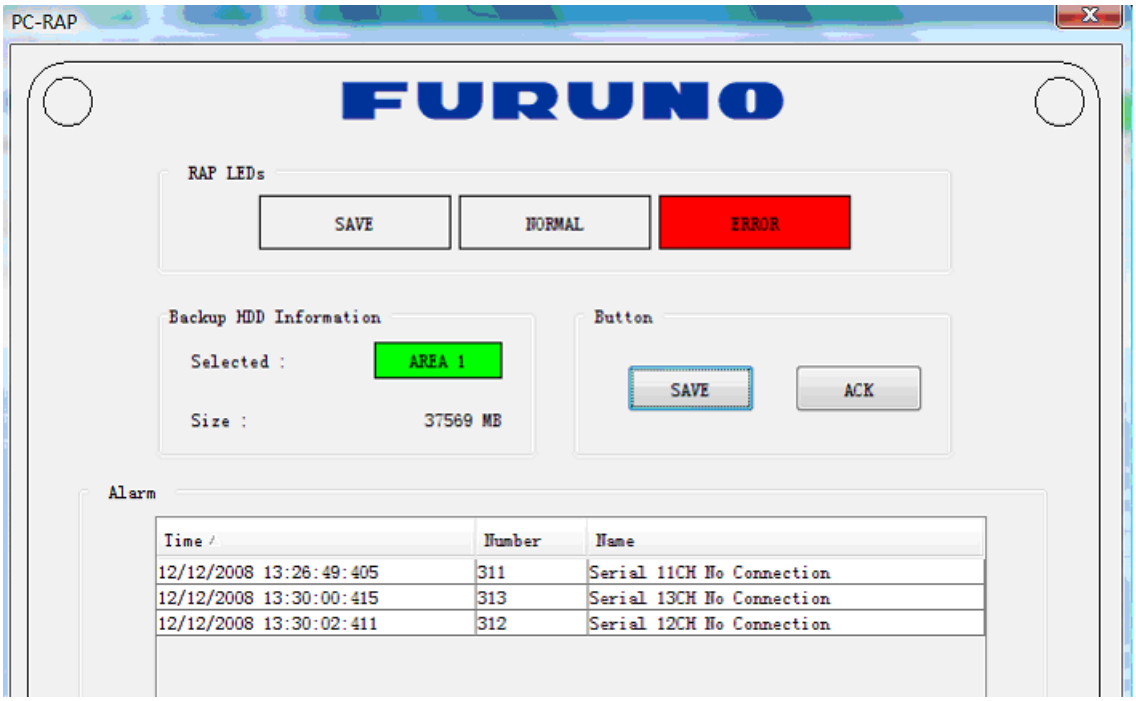
If an error message appears, the IP address or password may be wrong, or the cable between the PC and VDR is not correctly connected.

7. Check the memory size of the DRU and Backup HDD that appear in the status window.
If the memory size display shows "****MB" (data read error) restart the VDR. If the display still does not change, check that the DRU and HDD are correctly connected.

Example of acceptable memory size displays:

6 GB DRU Information Selected: DRU Size: 5564MB	6 GB DRU Information Selected: AREA2 Size: 37569MB	9GB DRU Information Selected: DRU Size: 8822MB

8. Select PC_RAP from the Tool menu.



Confirm Alarm box in PC_RAP. When a 3xx error is displayed as above, the data is not input correctly. Data settings are explained on the page 11. If error messages 094, 098, 018, 022 etc. are displayed, remove the error before going to the next step. Refer to the VDR Operator's Manual or error code list for definitions of the meanings of individual error codes.

9. Click the **X** button at the top right corner to close the PC_RAP.
10. From the menu, select Maintenance> Equipment Management> Import.
11. Select the file "equip.xml" from the desktop and click [open].
12. From the menu, select Maintenance> VDR Config Management> Download. Click the **OK** button, and then [Close].

    If the configuration file has already been downloaded, the 12th step is not necessary. The following explanation refers to setting individual tabs.

On the signal tab, there is an Information Area (left) and a Setting Area (right). Select the channel to set in the Information Area on the left by selecting it with the cursor, and then set it in the Setting Area on the right. The results of the updated setting are displayed in the Information Area. After setting each channel, click SET to finish.

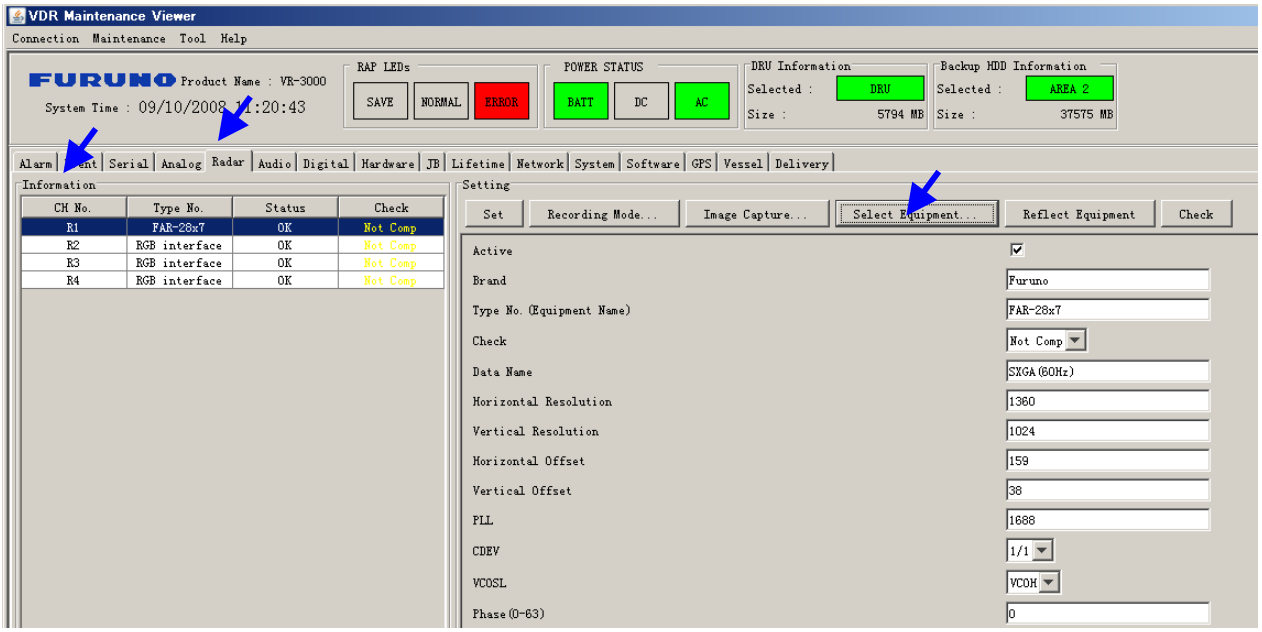
2.2 Radar

Radar Setup is performed in the Radar Tab.

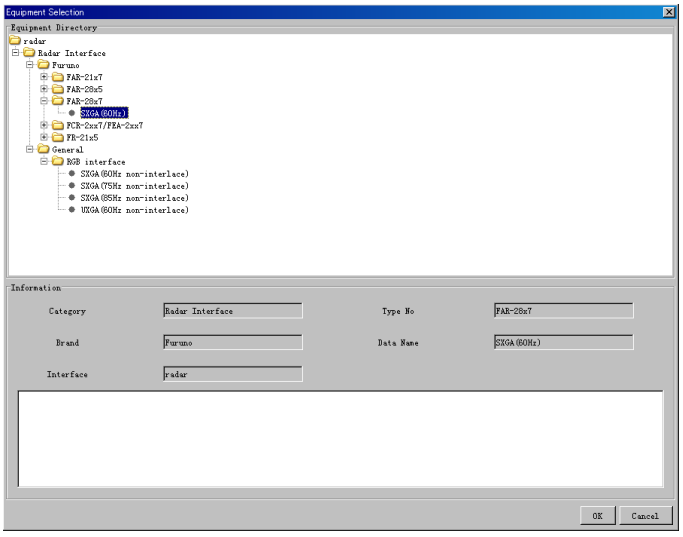
Equipment Setup:

1. Click the Radar tab.

   The Radar information setup screen appears.

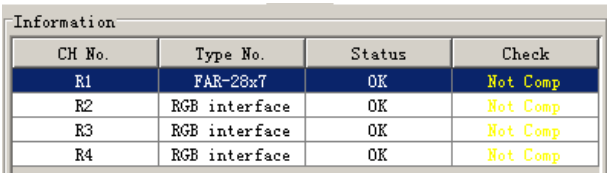


2. Select a radar channel from the Information area. For example, click the CH No.1 box to open the corresponding setup.
3. Click the **Select Equipment** button in the Setting Area. The following dialogue box appears.



4. Select a radar model.

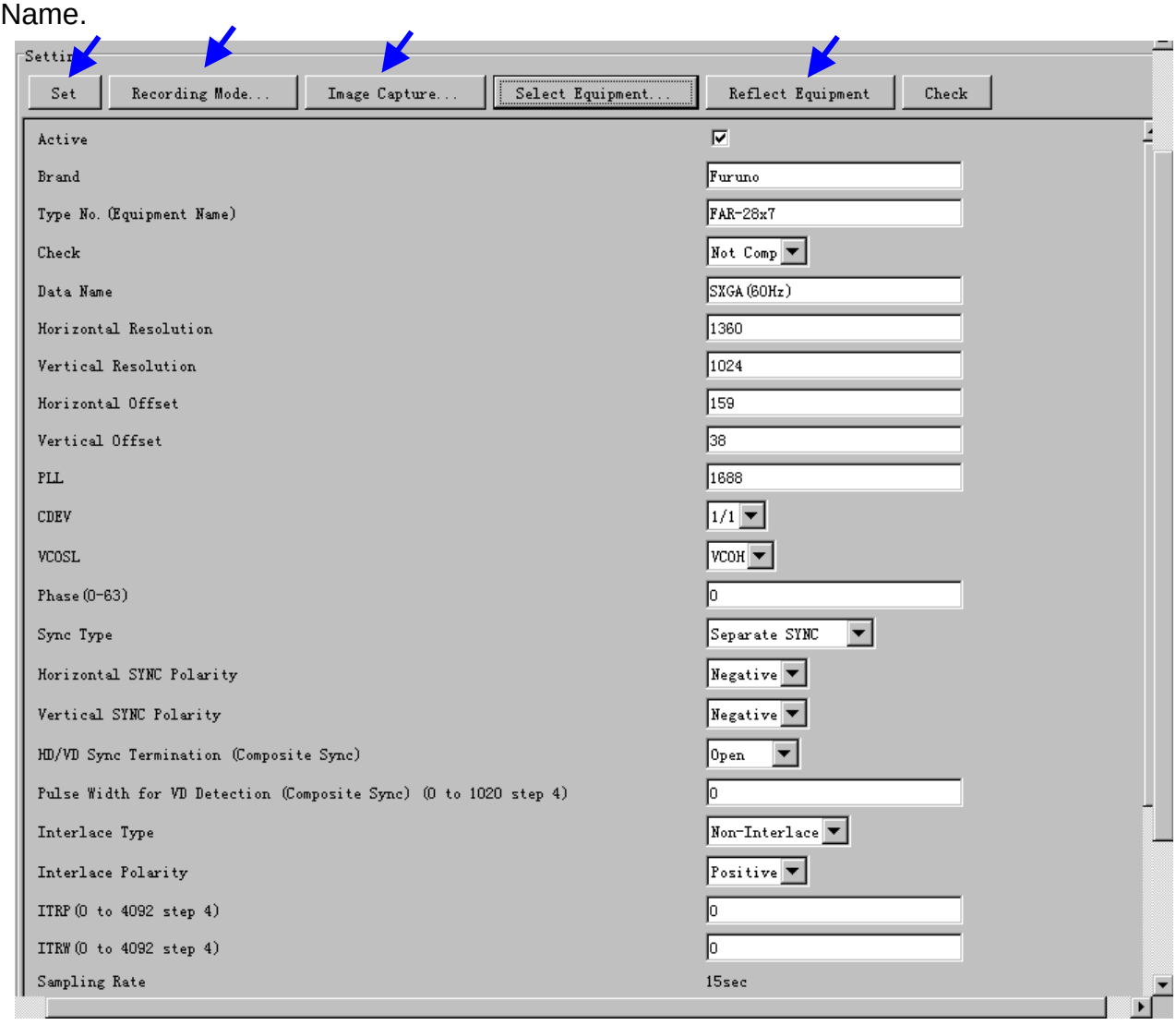
   For example, as in the above illustration, select Radar> Radar Interface>Furuno>FAR-28x7> SXGA(60Hz) and click the **OK** button. As in the following illustration, FAR-28x7 appears in the Type No. field in the CH. No 1 of the Information Area. Detailed information about the selected radar appears in the Setting Area.



If your radar model is not in the list, enter the required information manually. The setting values are the same as the previous Web Configuration values.

5. Click the **Image Capture** button in the Setting Area. Confirm the correct video signal.
6. If required, update the Setting Area item contents.

   It is not necessary to enter information very every item in the Setting Area. For easy identification of Input Source, enter Equipment Category, Brand, Type No and Data Name.



7. Click the **Set** button to finish.
8. To setup multiple radars, repeat steps 2 through 7.
9. Click the **Check** button in the setting area to perform radar check. Results appear in the Check section of the Information Area.

To import the exact settings to another ship, save the settings of the device in the Setting Area to the PC database.

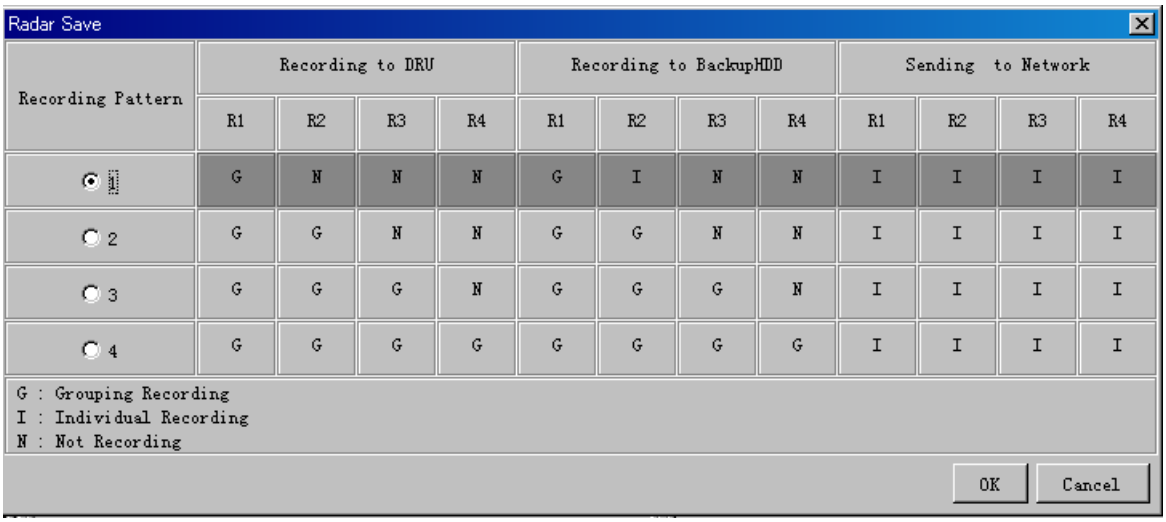
1. Click on **Reflect Equipment**.
2. Copy the file to the PC by using Maintenance> Equipment Management> Export in the menu.
3. Import to the other ship's VDR from the PC.

How to Set the Record Pattern

When there are two or more Radar units connected to the VDR, select which radar to record to.

Note: When using a 6 GB DRU it possible to record to 1 channel, and when using a 9 GB DRU it is possible to record to 2 channels.

1. In the Setting Area click the **Recording Mode** button. The following dialogue box appears.



R1-R4: 1st Radar (CH No.1)~4th Radar (CH No.4)

G: Records signal to the youngest radar number in a group pattern (ex; R1-R4 are grouped). If the youngest number is inactive, signal is recorded to the next youngest number in sequence within the group.

I: Indicated unit records/sends

N: Indicated unit does not record/send

2. Select a recording pattern from Patterns 1-4.

   For example, the settings in the above illustration are as follows.

   Recording Pattern 1: R1 signal is recorded to DRU, R2 – R4 do not record.

   R1 and R2 signals are recorded to the Backup HDD, R3–R4 do not record.

   Network Sending; R1-R4 all send to network.

   Recording Pattern 3: Recording signal to the DRU automatically routes to the next youngest active number in the group, between R1 and R3. R4 Does not record. Example: If R1 is inactive, signal is recorded to R2.

   Recording to Backup HDD: Same as DRU

Send to Network: R1-R4 all is sent to the network.

3. Update I and N as needed.

   Place the cursor above either I, or N, and left click to alternate. With this, I is set to record while N is set to not record. G cannot be changed.
4. After completing setup, click the **OK** button.
5. To record settings to the database, click Reflect Equipment in the Setting Area.

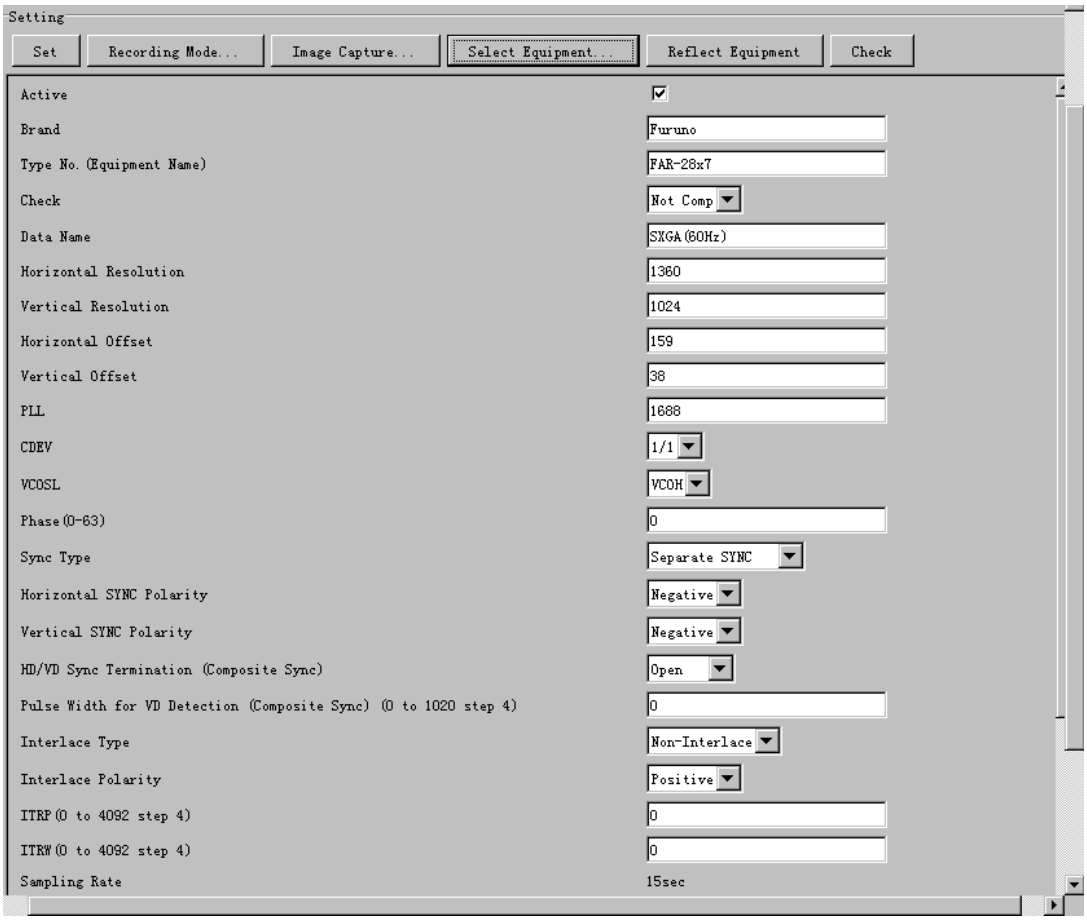
How to Enter Information Manually

This VDR system receives in VESA (Video Electronics Standards Association) signal.

- Image signal: 0.5-1Vpp (When using composite signal, the minimum synchronization signal is 50 mV).
- Horizontal Synchronization Signal: Max. ±91146 kHz.
- Vertical Synchronization Signal: Max. 35 Hz.
- Acceptable Image Resolution: 640x480 – 1280x1024.
- Channel number conforms to the number displayed by the DCU.

To set the Radar tab, do the following:

1. Click the Radar tab.
2. Choose the channel with the entered Radar Image from the Information Area.
3. Check the Active box in the Setting Area and enter the Horizontal and Vertical resolution of the incoming image in the Horizontal resolution and Vertical resolution columns.
4. Click the **Set** button.
5. Click the **Image Capture…** button. The Image Capture dialogue box appears.
6. Click the **Test** button in the Image Capture window. Radar image appears a few seconds later.
7. If the image is normal, close the Image Capture window.
8. Input each item in the Setting Area.



Items are as follows:

Active: Check a channel to activate it.
Brand: Enter brand name.
Type No.: Enter type no.
Check: Set and activate check.
Data Name: Enter data name.
Horizontal resolution: Set horizontal resolution.
Vertical resolution: Set vertical resolution.
Horizontal Offset: Move the picture horizontally.
Vertical offset: Move the picture vertically.
PLL: This sets the frequency of the PLL-oscillator.
CDEV: Set CDEV.
VCOSL: Set VCO Signal Lead.
Phase (0-63): Phase setting selects the phase of the sampling clock relative to phase locked loop signal, in 64 steps of 5.625 degrees. If Phase is not set correctly, any section of an image consisting of vertical lines may show line “tearing”.
Sync Type: Select the type of video sync signal.
Horizontal sync polarity: Set the polarity of the horizontal sync signal.
Vertical sync polarity: Set the polarity of the vertical sync signal.
HD/VD Sync Termination: Sets horizontal and vertical synchronization point. When using a composite signal, set to 75ohms.
Pulse Width for VD Detection (0-1020 Step4): Sets the pulse width for video signal detection.
Interlace Type: When the video image is interlace, set “Interlace“ sampling

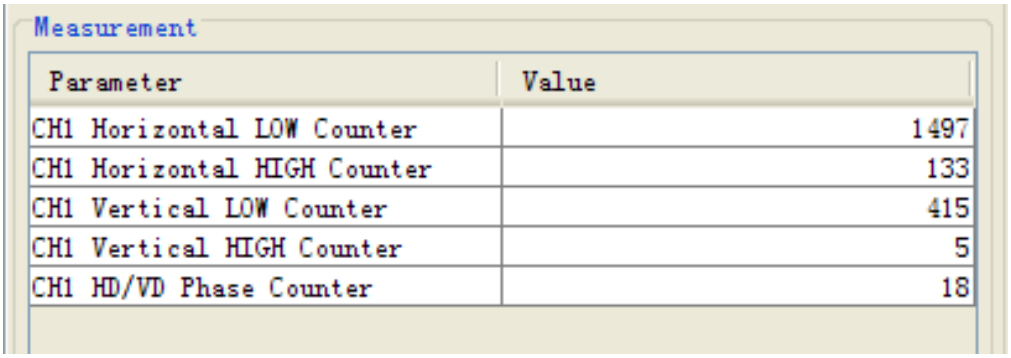
mode. In Interlace mode, the even pixels are sampled on one frame and odd pixels are sampled on the other frame.

Interlace Polarity: Set interlace polarity.
ITRP (0-4092 Step4): Enter interlace pulse position.
ITRW (0-4092 step4): Enter interlace pulse width.
Sampling Rate: Display sampling rate. Fixed at “15 seconds”.
Compress Type (viewer): Set compress type (viewer).
Color Bit: Display and set Color Bit.
Charge Pump Current: Set chance pump current. Fixed at “0.5 mA”.
Video Clock Polarity: Set video clock polarity. Fixed at “Through”.
Counter Clock Selection: Select counter clock selection. Fixed at “49 MHz”.
VCO Clock Hold: Sets VCO clock hold.
Red Gain (0-255): Enter red gain.
Green Gain (0-255): Enter green gain.
Blue Gain (0-255): Enter blue gain.
Red Offset (0-255): Enter red offset.
Green Offset (0-255): Enter green offset.
Blue Offset (0-255): Enter blue offset.
Black Level (0-255): Enter black level.
Equipment Category: Enter equipment category.
Board Name*: Enter board name for corresponding channel.
Note*: Enter note.

Note: Offset, Phase and Color Bit change with the length of the antenna cable.
*Marked Items: For easy identification of input source, enter Equipment Category, Brand, Type No., and Data Name.

Measurement Box

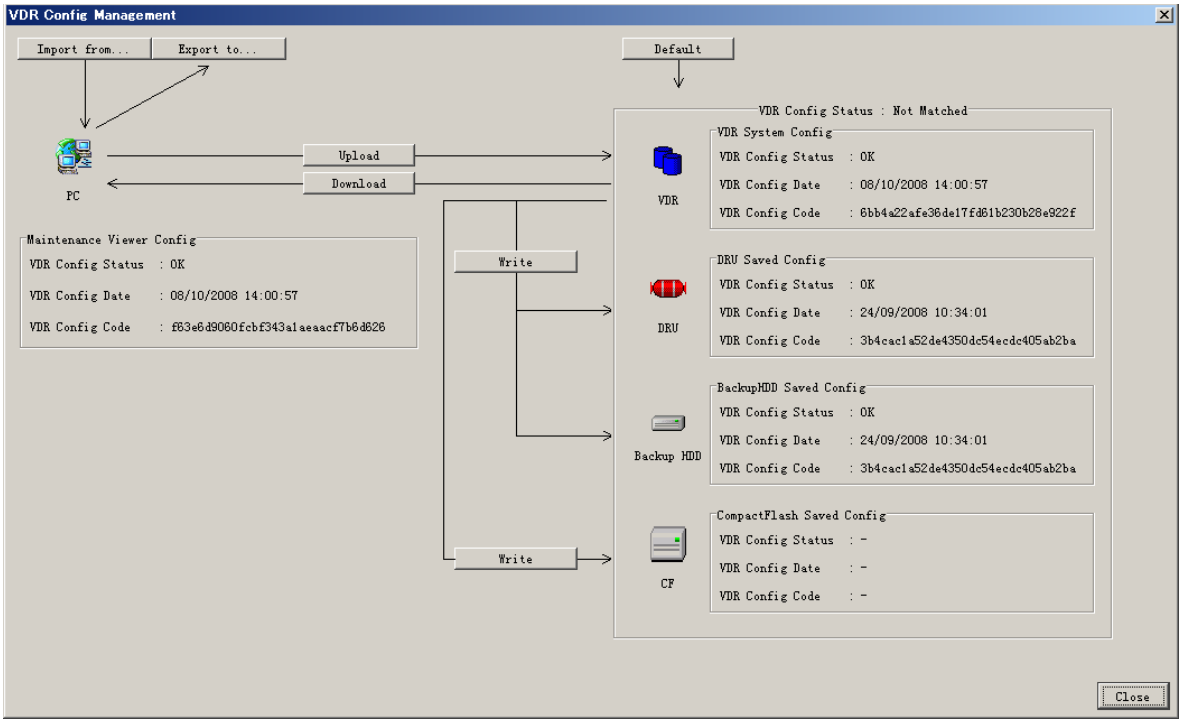
The Measurement Box is located on the left side of the Information Area. The LOW Horizontal and Vertical counter should be higher than the HIGH counter. If, reversely, the HIGH counter is higher than the LOW counter, it is possible that the SYNC Polarity settings are adjusted incorrectly.



Config Management

After all items have been set up, proceed to the final setting management. This can only be executed one time, after all tabs have been set up.

1. Click on VDR Config Management in the Maintenance menu.



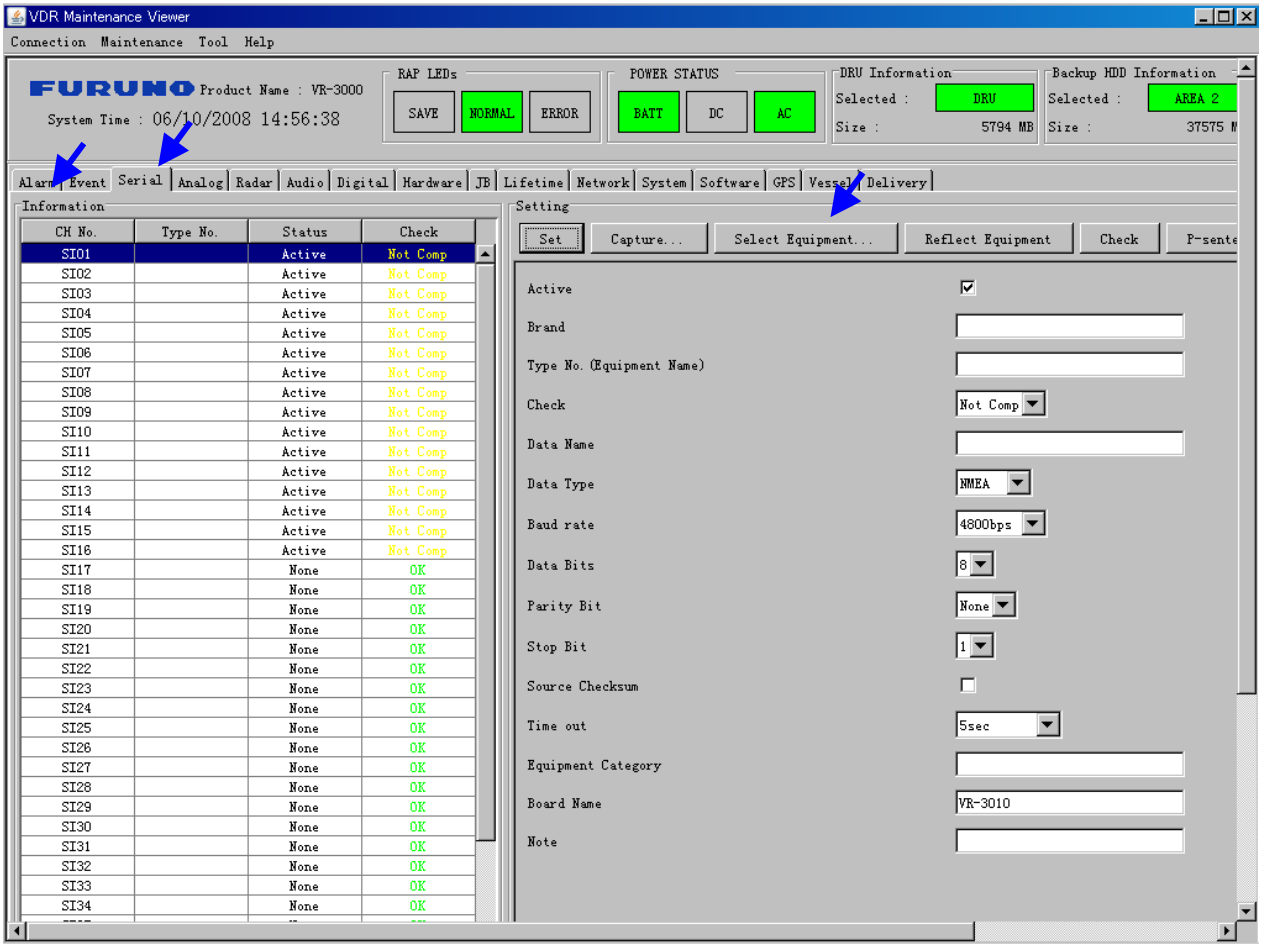
2. Click on the **Upload** button to send all sent data to the VDR memory.
3. Click each individual **Write** button to record to DRU, Backup HDD and CF.
   Note: If the settings are not uploaded to the VDR, they have no effect on the unit.
4. Click the **Close** button to close the VDR Config Management Dialogue Box.

2.3 Serial Signal

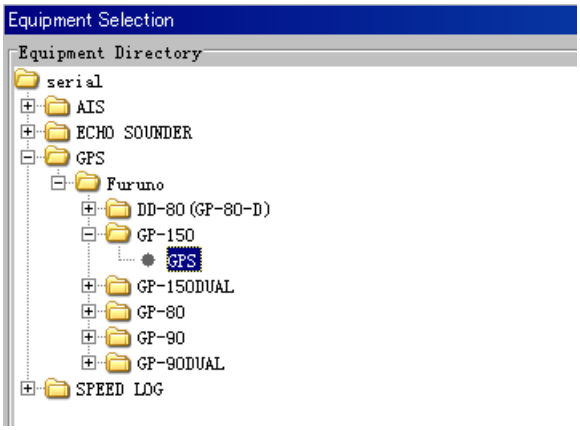
The Serial tab sets the RS-422 signals received at the terminal board (SI01-SI08) and the junction box (SI09-SI72). This channel is not only for NMEA but also binary and ASCII data.

Set the Serial tab as follows:

1. Click the Serial tab.
2. Select a channel from the Information window.



3. Click the **Select Equipment** button in the Setting Area.



4. Choose the unit that is connected to the indicated Channel and click the **OK** Button.
5. Adjust items as needed in the Setting Area.
6. After finishing the settings for one channel, click the **Set** button.
   Note: Be sure to do this before moving another channel.
7. Repeat steps 2-6 to set up each channel.

When running Config Management for Tab Settings:

1. From the Maintenance menu, click VDR Config Management and then Config.
2. Click the **Upload** button to record data to the VDR memory.
3. Click the **Write** button to save data to the DRU, backup HDD and CF.

The buttons in the Setting Area are as follows:

Set:	Save edited data.
Capture:	Received data shown in the serial window dialog box
Select Equipment:	Select equipment settings (saved to the database) to reflect in a channel.
Reflect Equipment:	Save the equipment setting data to the database.
Check:	Check all channels. OK or NG (No Good) shown in Information window.

Individual Item Explanation:

Active*:	Put check in check box to make channel active.
Brand:	Enter brand name.
Type No. (Equipment Name)*:	Set type no. (equipment name)
Check*:	Do equipment check.
Data Name*:	Enter data name.
Data Type:	Enter data type.
Baud Rate:	Set baud rate (Available for SI01 to SI08).
Data Bit:	Set number of bits (Available for SI01 to SI08).
Parity Bit:	Set parity bit (Available for SI01 to SI08).
Stop Bit:	Set stop bit (Available for SI01 to SI08).
Source Checksum:	Enter checksum for GPS source.
Time out:	Set time out.
Equipment Category*:	Set equipment category.
Board Name*:	Enter board names where channels are present.
Note*:	Enter note.

* Marked Items: For easy identification of input source, enter Equipment Category, Brand, Type No., Date and Name.

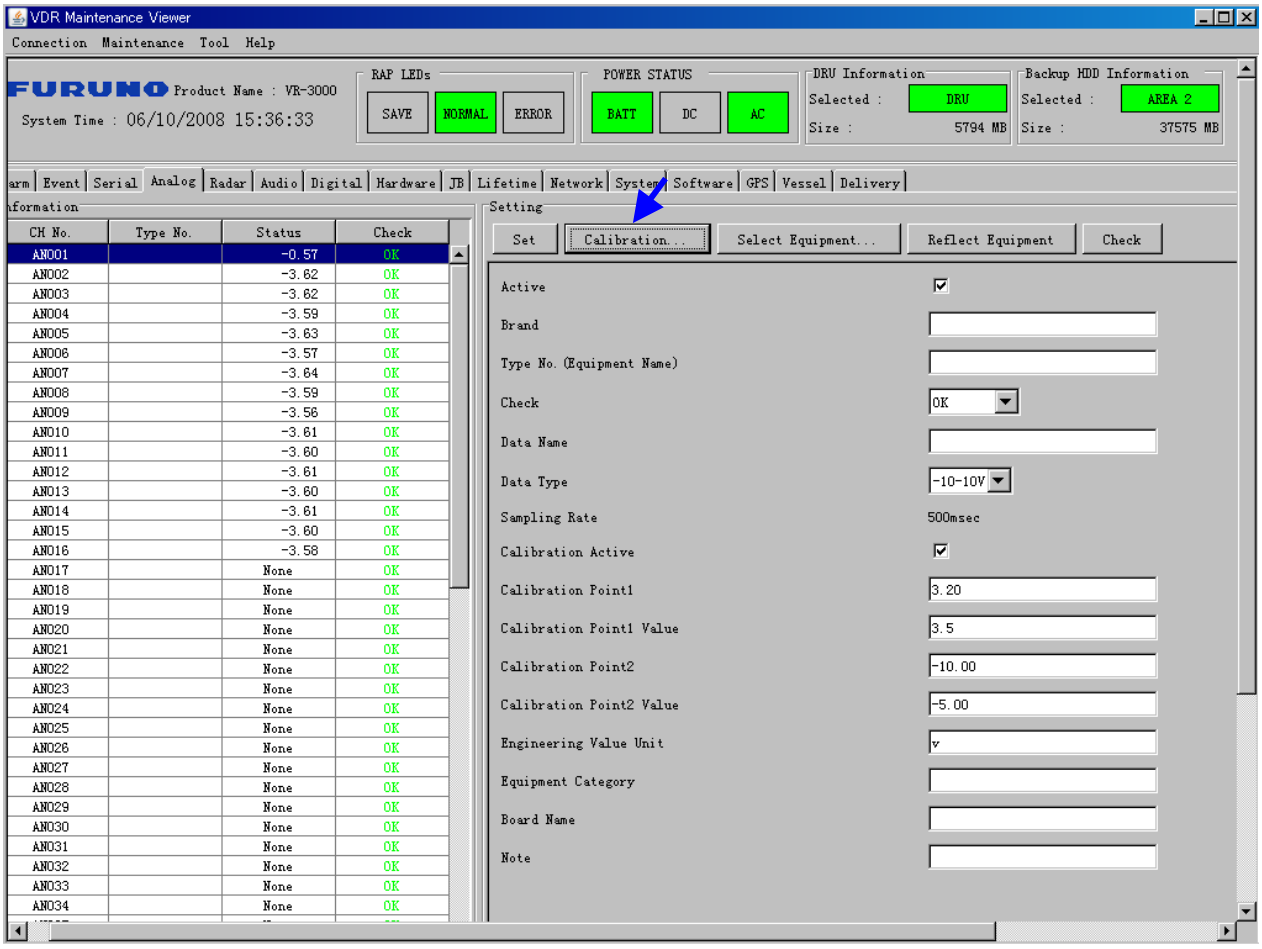
2.4 Analog Signal

Analog signal is input via Junction Box IF-8530 (optional for VR-3000S).
Receivable signal: –10 to +10 V or 4 to 20mA.

Connect the analog signal to V and G terminals on the Junction Box. When 4 to 20 mA signal is connected, make a short circuit between the V and I input terminals with jumper wire.

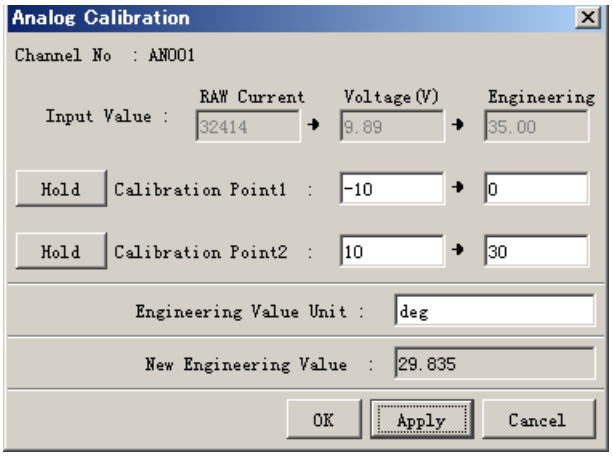
The basic procedure for setting up the analog signal is as follows:

1. Click the Analog tab.
2. Select channel from the Information Area.
3. Set detailed information of the selected channel in the Setting Area. Refer to the following illustration to enter detailed item information.



★In the factory settings, there is no preset data when the **Select Equipment** button is pressed. In the case that the setup was completed on another ship and saved using Reflect Equipment, import the data by clicking **Select Equipment** and choosing the saved data.

4. In the following order, calibrate the Analog signal:
   - ① Click the **Calibration** button in the Setting Area.
   - ② Enter the voltage (or current) value for Calibration Point 1, and the corresponding engineering value in the left and right boxes.
   - ③ Enter values for Calibration Point 2.
   - ④ Enter unit for the values in Engineering Value Unit.



In the above image the Engineering Value Unit is set to degrees (deg). The Calibration Point 1 is -10V, corresponding to 0 degrees, Calibration Point 2 is 10V corresponding to 30 degrees. This is set corresponding to the connected analog sensor.

When the **Apply** button is clicked, the New Engineering Value of 29.835V, corresponding to the input Voltage of 9.89V, is displayed in the bottom field. Whenever the input value is changed this value also changes. Check that the New Engineering Value is within an appropriate range.

Another method is to observe the Voltage (or Current) field in the top field and press the **Hold** button of Point 1 when an appropriate value is displaying. Do this again for Point 2.

⑤ Click the **OK** Button

5. When setting is complete, click the **Set** button. Be sure to do this before moving another to channel.
6. Repeat steps 1-5 to set up all channels.

When using Config Manager with Tabs:

1. From the Maintenance menu, click VDR Config Management and then Config.
2. Click the **Upload** button to record to VDR memory.
3. Click the **Write** buttons to record to DRU, Backup HDD and CF memory.

<u>The items in the Setting Area are as shown below:</u>

Active: Put check in check box to make channel active.
Brand*: Enter brand name.
Type No.*: Set type no. (equipment name).
Check*: Do equipment check.
Data Name*: Enter data name.
Data Type*: Analog Data type (0~10V, -10~10v, 4~20mV)
Sampling Rate: Display sampling rate.
Calibration Active: Disable and enable analog calibration.
Calibration Point 1#: Enter calibration point 1.
Calibration Point 1 Value#: Enter calibration point 1 value.

Calibration Point 2#: Enter calibration point 2.
Calibration Point 2 Value#: Enter calibration point 2 value.
Engineering Value Unit#: Enter engineering value unit.

Note: For #-marked boxes, values that are set at the Analog Calibration dialog box are displayed.

Equipment Category*: Set equipment category.
Board Name*: Enter board names where channels are present.
Note*: Enter note.

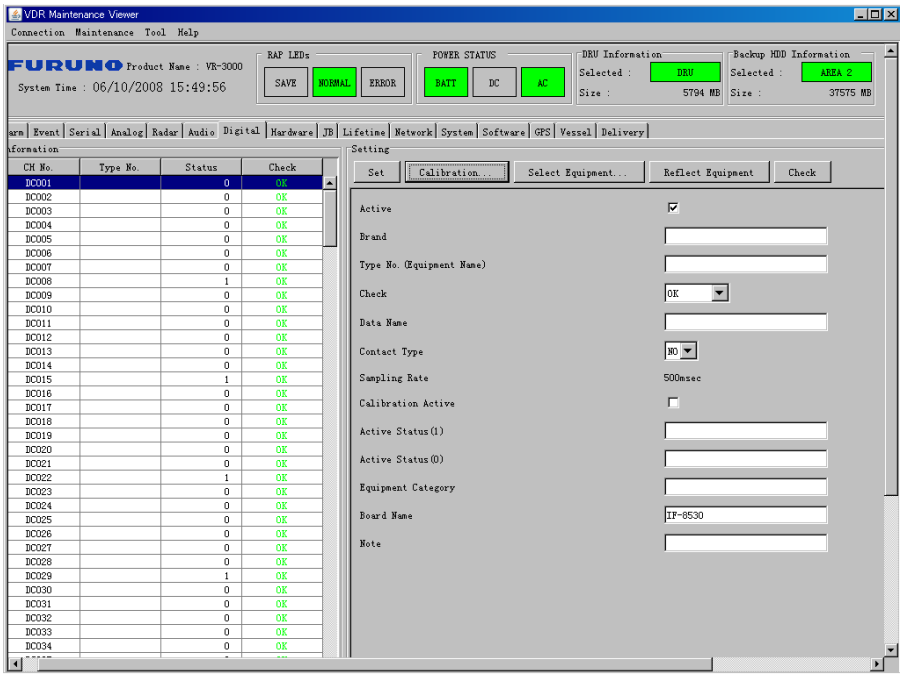
* Marked Items: For easy identification of input source, enter Equipment Category, Brand, Type No., Data and Name.

2.5 Digital Signal

Digital signal is connected via Junction Box IF-8530 (optional for VR-3000S). The receivable signal is 10-32 V for voltage signal, or contact signal. For voltage signal, connect to A and B input terminals on the Junction Box. For contact signal, connect to B and G input terminals on the Junction Box. Also, make a short-circuit between the 24 and A input terminals with a jumper wire.

To set up the Digital tab:

1. Click the Digital tab.
2. Select a channel from the Information Area.
3. Set up the digital signal from the Setting Area. Refer to the following individual item explanation.

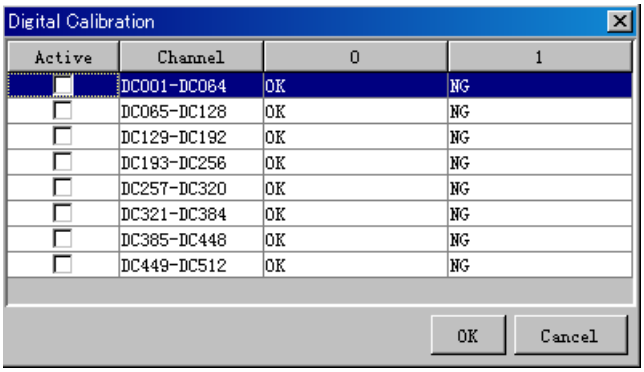


★In the factory settings, there is no preset data when the **Select Equipment** button is pressed. In the case that the setup was completed on another ship and saved using Reflect Equipment, import the data by clicking **Select Equipment** and choosing the saved data.

4. When setting Digital Signal to each 64 channel group, perform the following

directions:

1. Click the **Calibration** button in the setting area.



2. Check the active column of the channel group being set.
3. Enter the status in columns 0 and 1 of that group.
4. Click the **OK** Button.

5. When finished setting up, click the **Set** button.
6. Repeat steps 2-5 to set up other channels.

When using Config Manager with Tabs

1. From the Maintenance menu, click VDR Config Management and then Config.
2. Click the **Upload** button to record to VDR memory.
3. Click the **Write** buttons to record to DRU, Backup HDD and CF memory.

The items in the Setting Area are as shown below.

Active: Put check in check box to make channel active.
Brand*: Enter brand name.
Type No.: Set type no. (equipment name)
Check: Do equipment check.
Data Name*: Enter and display data name.
Contact Type: Set contact type. NO: normal open, NC normal close
Sampling Rate: Display sampling rate.
Calibration Active: Disable and enable digital calibration.
Active Status (1)*: Set status display when (1) is active.
Active Status (0)*: Set status display when (0) is active.
Equipment Category*: Set equipment category.
Board Name*: Enter board names where channels are present.
Note*: Enter note.

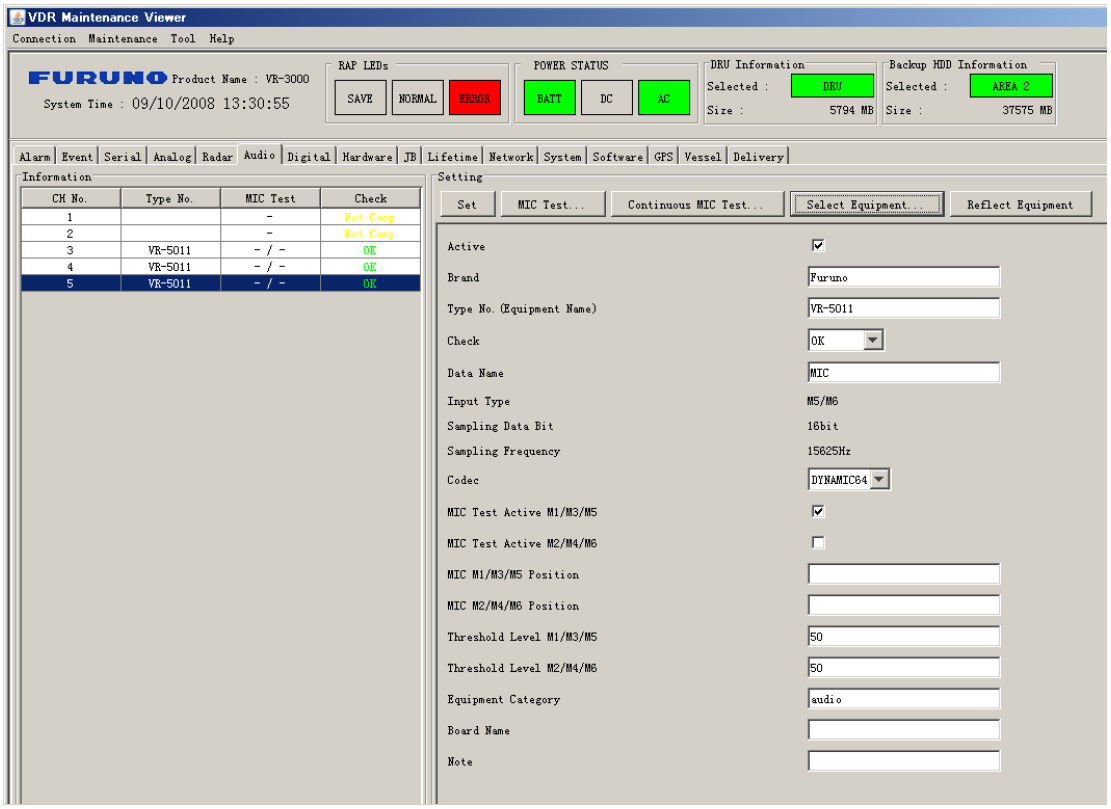
* Marked Items: For easy identification of input source, enter Equipment Category, Brand, Type No., Date and Name.

2.6 Audio

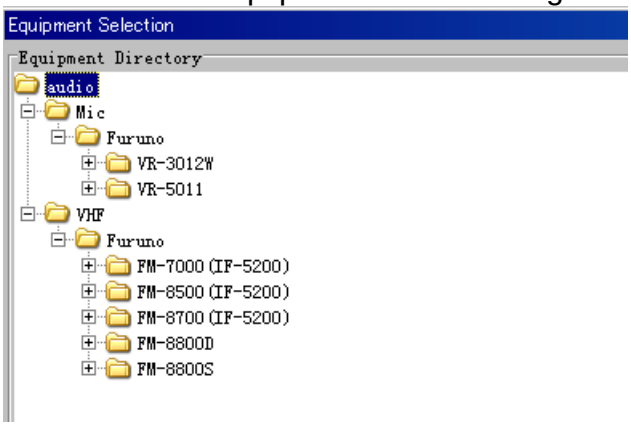
Microphone and VHF audio settings are performed in the Audio tab.

Set the items in the Audio tab as shown below:

1. Click the Audio tab.



2. Select channel from the Information Area.
3. Click Select Equipment in the Setting Area.



4. Click on the connected device in the indicated channel. The setting contents are displayed in the Information and Setting Areas.
5. If required, update the item contents in the Setting Area. Refer to the detailed item explanation below.
6. After completing settings for a channel, click the **Set** button.
   Note: Be sure to click the **Set** button before moving to another channel.
7. Repeat steps 2-6 to set up other channels.

When using Config Manager with tabs

1 From the Maintenance menu, click VDR Config Management and then Config.

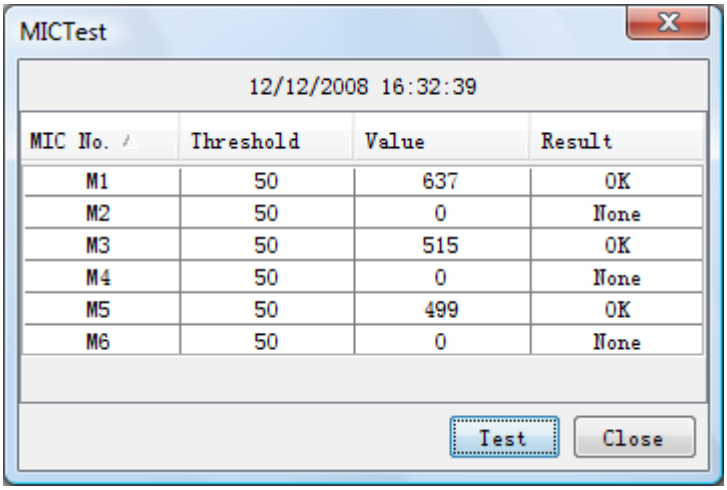
2 Click the **Upload** button to record to VDR memory.

3 Click the **Write** buttons to record to DRU, Backup HDD and CF memory.

MIC test

Do the MIC test to check whether audio is received clearly in adequate level or not.

1. Click the **MIC TEST** button in the Setting Area.
2. Click the **TEST** button in the MIC Test dialogue box. MIC test results are displayed in the MIC Test dialogue box.



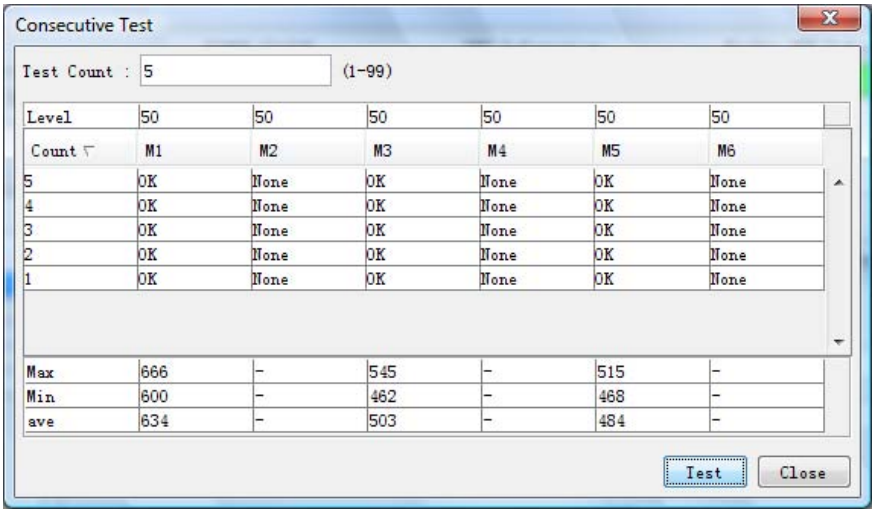
3. Click the **Close** button to close the dialogue box.

Note: Not the same recording/playback function as the previous Web Configurator software.

Continuous MIC Test

Run the continuous MIC test as needed accordingly.

1. Click the **Continuous MIC Test** button in the Setting Area
2. Set up how many times to perform in the Continuous MIC Test dialogue box and click the **Test** button.



3. Click the **Close** button to close the dialogue box.

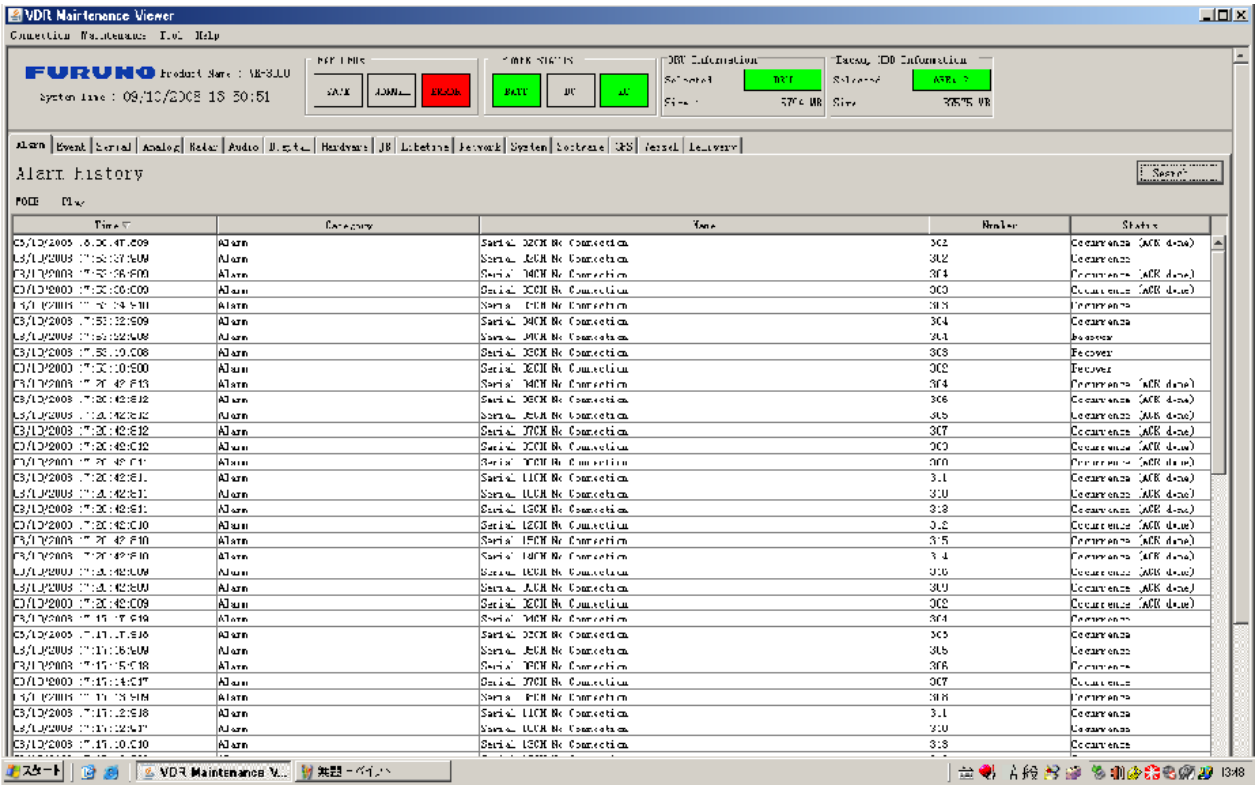
The buttons in the Setting Area work as follows:

Active: Put check in check box to make channel active.
Brand*: Enter and display brand name.
Type No.*: Set type no. (equipment name)
Check*: Do equipment check.
Data Name*: Enter data name.
Input Type: Enter input type.
Sampling Data Bit: Displays sampling data bit rate.
Sampling Frequency: Displays Sampling Frequency.
Codec: Sets MIC type
MIC Test Active M1/M3/M5: Put a checkmark when performing MIC Test of M1/M3/M5.
MIS Test Active M2/M4/M6: Put a checkmark when performing MIC Test of M2/M4/M6.
MIC M1/M3/M5 Position: Enter MIC position of MIC M1/M3/M5.
MIC M2/M4/M6 Position: Enter MIC position of MIC M2/M43/M6.
Threshold Level M1/M3/M5: Enter MIC test threshold level of MIC M1/M3/M5.
Threshold Level M2/M4/M6: Enter MIC test threshold level of MIC M2/M43/M6.
Equipment Category*: Set equipment category.
Board Name*: Enter board names where channels are present.
Note*: Enter note.

* Marked Items: For easy identification of input source, enter Equipment Category, Brand, Type No., Date and Name.

2.7 Alarm

Alarm and Alarm Status settings are found in the Alarm tab.

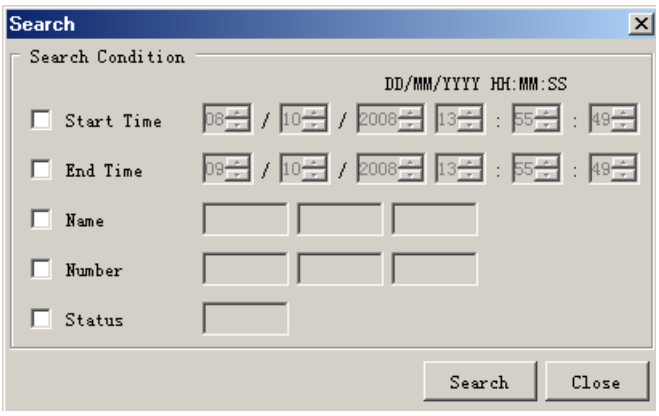


The Alarm tab shows the following information about alarms. Click the Time, Category and Name tabs in the title bar to sort.

Time: Time of alarm
Category: Alarm category
Name: Name of alarm
Number: Alarm number
Status: Alarm status

Alarm Search

1. Click the **Search** button above the Alarm tab. The Search dialogue box appears.



2. Add a checkmark to any desired search items (multiple items can be selected).

Start Time: Display name of alarms generated after a certain time.
End Time: Display name of alarms generated before a certain time.

Name: Display information for alarm name entered.
Number: Display information for alarm number entered.
Status: Display alarm status for alarm name entered.

3. In the checked items column, input the desired search items.

4. Click the **Search** Button.

Close the Search box to cancel a search.

Note: During a search, the upper left Mode changes from Play to Search, and Display search related information.

2.8 Event

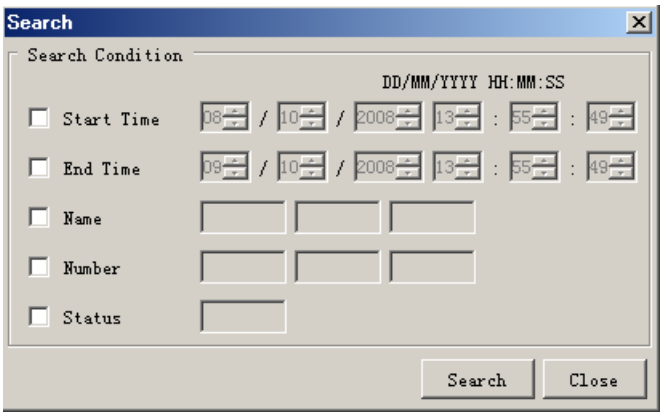
Click the items shown below to sort by item selected.

Time: Time an event occurred.
Category: Category of an event.
Name: Name of an event.
Contents1: Display data associated with log.
Contents2: Display data associated with log.

Event Search

Do the following to search events:

1. Click the **Search** button on the upper right of the Event tab.



2. In the dialogue box, add a checkmark to desired search items. Multiple items can be checked.

   Start Time: Display name of event generated after a certain time.
   End Time: Display name of event generated before a certain time.
   Name: Display event names entered.
   Number: Display event numbers entered.
   Status: Display event status entered.

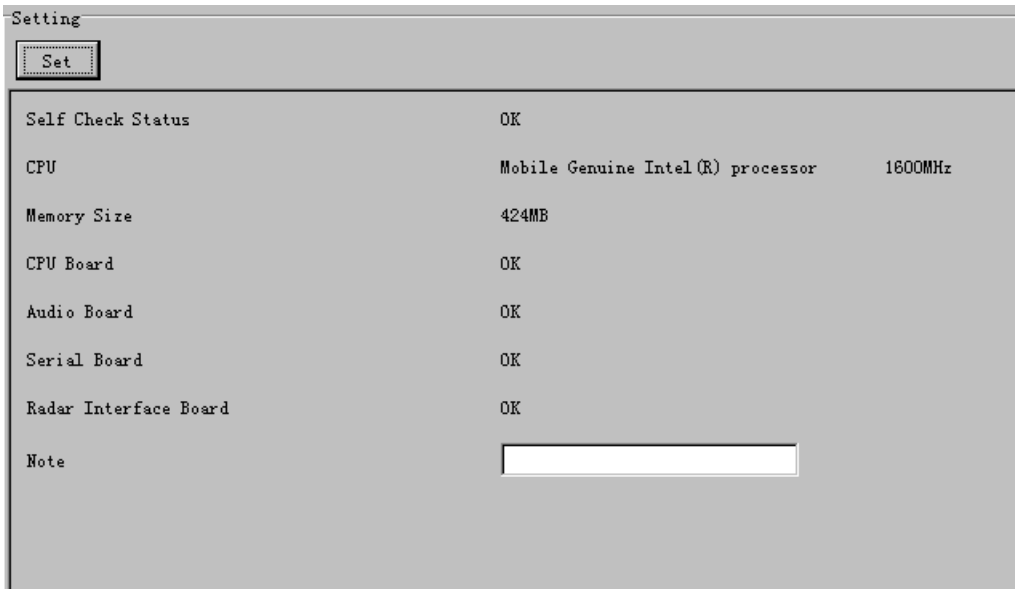
   Enter information about the checked event to search in the character input box.

3. Click the **Search** button.

Note: The mode changes from Play to Search when performing a search.

2.9 Hardware

The Hardware tab provides information about the system hardware.



The buttons in the Setting window work as follows:

Self Check Status: Display status of self check.
CPU: Display information about the CPU.
Memory Size: Display memory size.
CPU Board: Display status of CPU board.
Audio Board: Display status of Audio board.
Serial Board: Display status of Serial board.
Radar Interface Board: Display status of Radar Interface board.
Note*: Enter and display note.

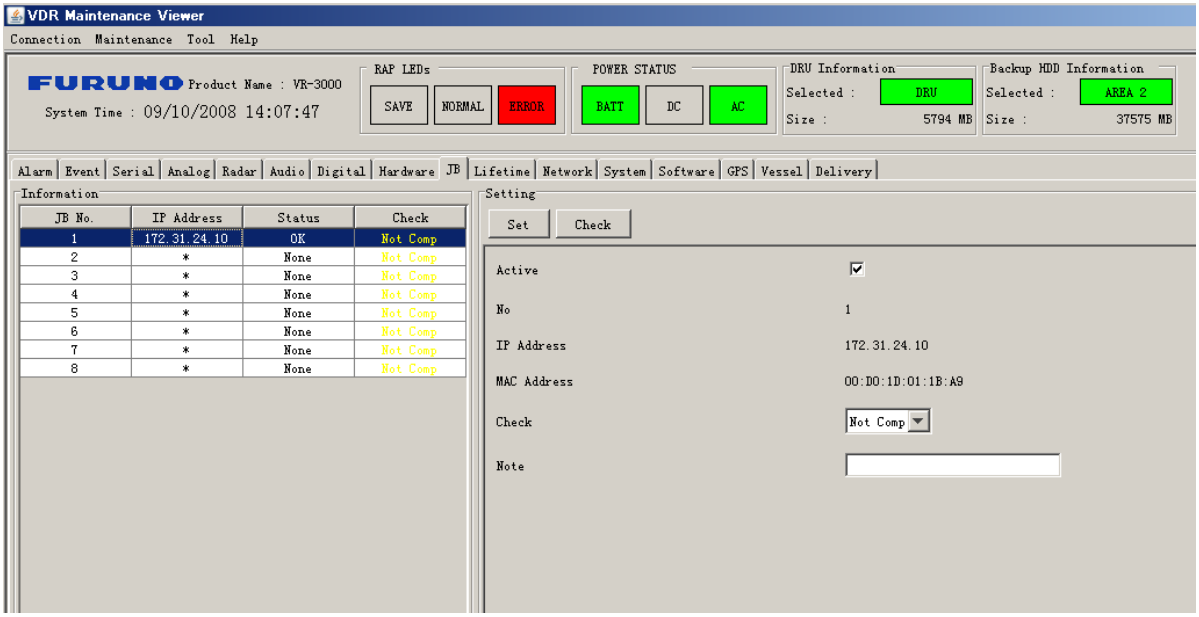
* Marked items are optional.

2.10 JB

The JB tab functions to set up the Junction Box.

The basic procedure for setting up the Junction Box is as follows:

1. Click the JB tab.
2. Select a Junction Box from the Information Area.



3. Set up the Junction Box from the Setting Area.
4. Click the **Set** button. (Be sure to do this before moving to another channel).
5. Click the **Check** button to perform an inspection on all channels. In the Information Area check column, either OK or NG (No Good) is displayed.

When using Config Manager with Tabs

1. From the Maintenance menu, click VDR Config Management and then Config.
2. Click the **Upload** button to record to VDR memory.
3. Click the **Write** buttons to record to DRU, Backup HDD and CF.

The items in the Setting window work as follows:

Active: Put check in check box to make channel active.
No: Display Junction Box number.
IP Address: Display IP address of Junction Box, acquired by VDR.
MAC Address: Display MAC address of Junction Box, acquired by VDR.
Check: Enable and disable equipment check.
Note*: Enter note.

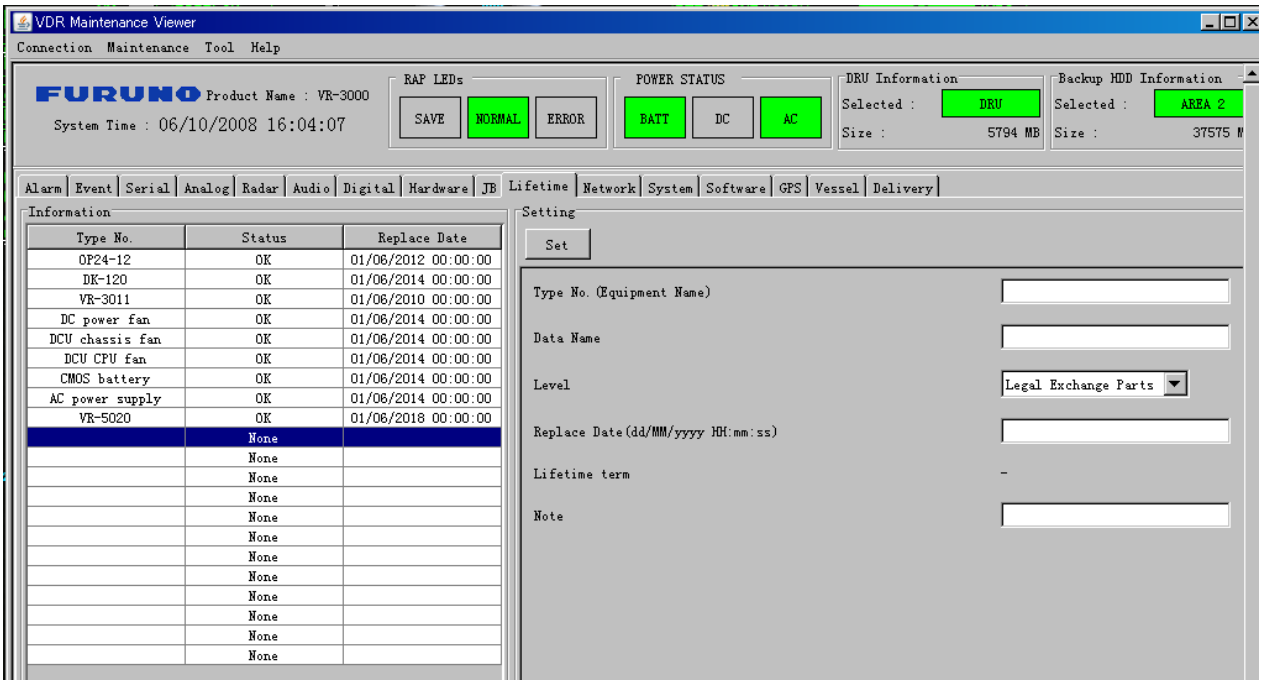
*Marked items are optional

2.11 Life Time

The Life Time tab controls consumable parts.

The basic procedure for using the Life Time tab is as follows:

1. Click the Life Time tab.
2. Select a Type No. in the Information Area.
3. Set up the chosen part from Setting Area.



4. Click the **Set** button.

Note: Be sure to click the **Set** button before moving to set up a different Type.

The items in the Setting window work as follows:

Type No.*: Enter and display type no.
Data Name*: Enter and display data name.
Level*: Set replacement level. Legal Exchange Parts or Normal Exchange Parts.
Replace Date: Enter and display recommended day of replacement.
Lifetime Term: Not used.
Note*: Enter and display note.

The Status column of the Information Area displays as follows:

OK: The recommended date of replacement shown in the Replace Date box in the Information window has not passed.

Out of Date: The date of replacement has passed.

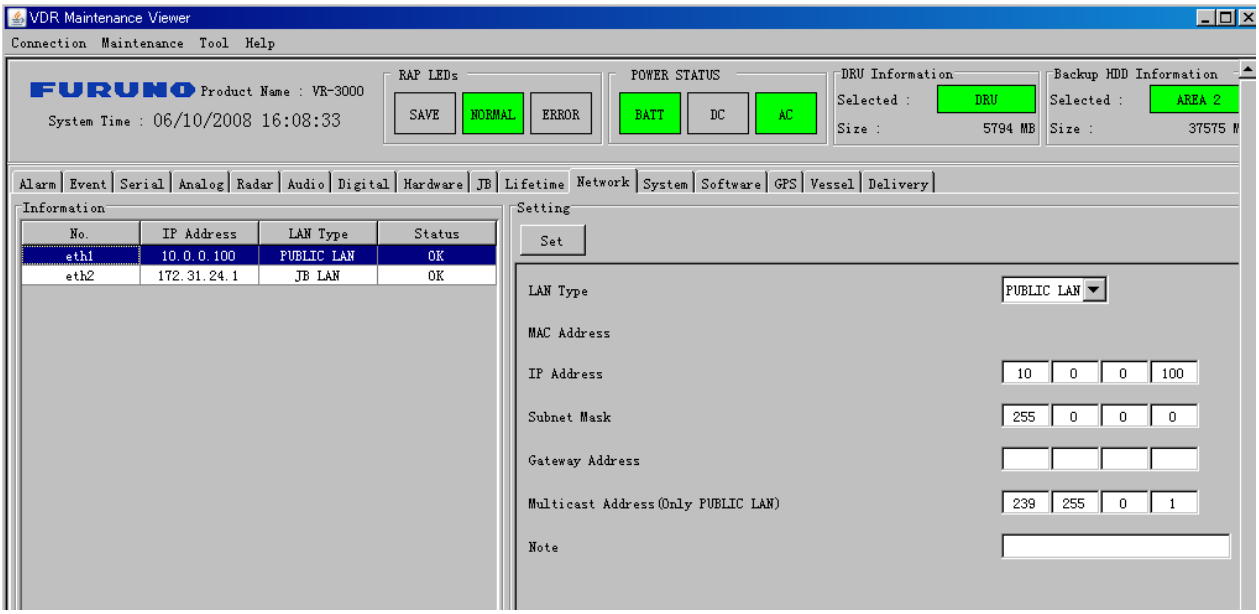
None: The date of replacement has not been set.

2.12 Network

The Network tab sets the system network.

The basic procedure for setting up the system network is as follows:

1. Click the Network tab.
2. Select a port from the Information Area.
3. Set up the network from the Setting Area.



5. Click the **Set** button.

   Note: Be sure to click the Set button before moving to set up a different Port.

The items in the Setting window work as follows:

LAN Type: Enter LAN type; Public LAN or JB LAN.
MAC Address: Enter MAC address.
IP Address: Enter IP address.
Subnet Mask: Enter subnet mask.
Gateway Address*: Enter gateway address
Live Play Multicast Mode (Only JB LAN): Check box to enable live player multicast mode.

Multicast Address (Only Public LAN): Enter and display live player multicast address.
Note*: Enter note.

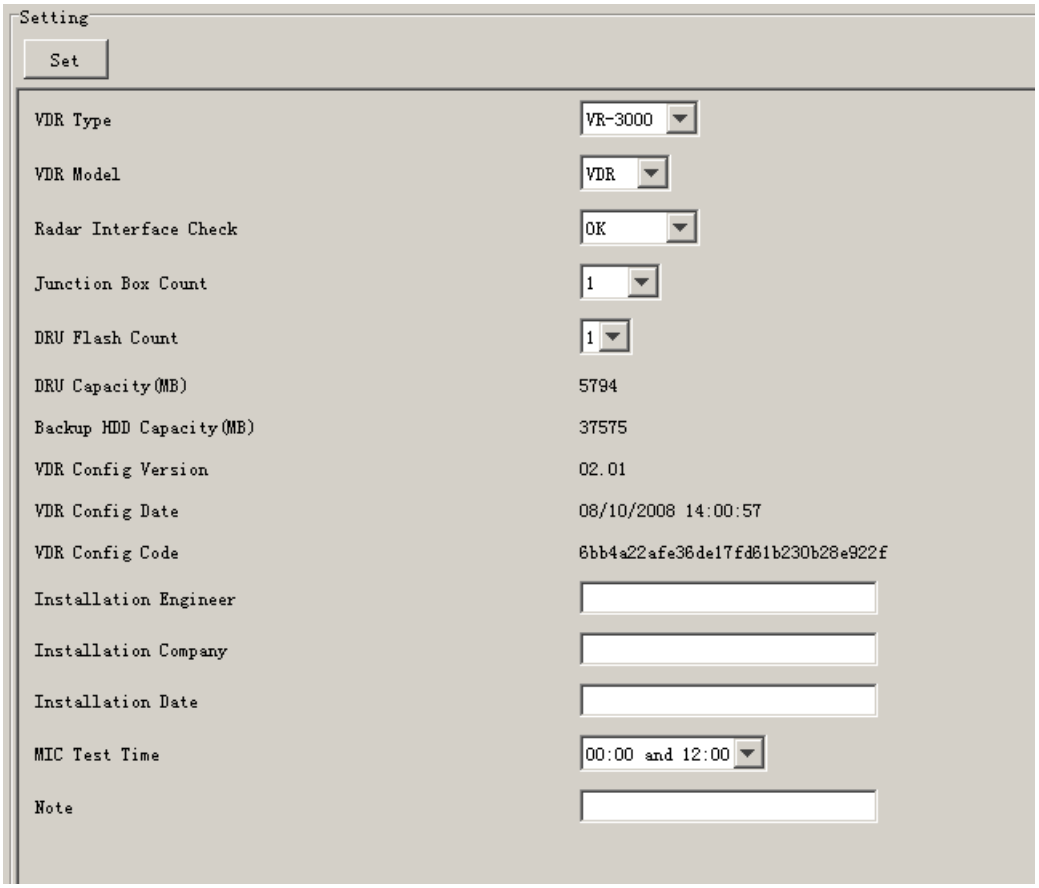
* Marked items are optional.

2.13 System

The System tab sets system related functions.

The basic procedure for using the System tab is as follows:

1. Click the System tab.



2. Set up the chosen item from the Setting Area.
3. Click the **Set** button.

Note: Be sure to click the **Set** button before moving to a different tab.

The items in the Setting window work as follows:

VDR Type:	Enter type of VDR.
VDR Model:	Enter model number of VDR.
Radar Interface Check:	Enable and disable checking of the Radar Interface board.
Junction Box Count:	Enter number of junction boxes in system.
DRU Flash Count:	Enter number of DRU flash disks in system.
DRU Capacity:	Display capacity of DRU.
Backup HDD Capacity:	Display capacity of backup HDD.
VDR Config Version:	Display version no. of VDR.
VDR Config Date:	Display the number of hours the VDR settings have been saved.
VDR Config Code:	Display configuration identity code.
Installation Engineer:	Enter name of the equipment installer.
Installation Company:	Enter name of installer's company.

Installation Date: Enter the date of the installation.
MIC Test Time: Enter the date of the MIC test.
Note*: Enter note.

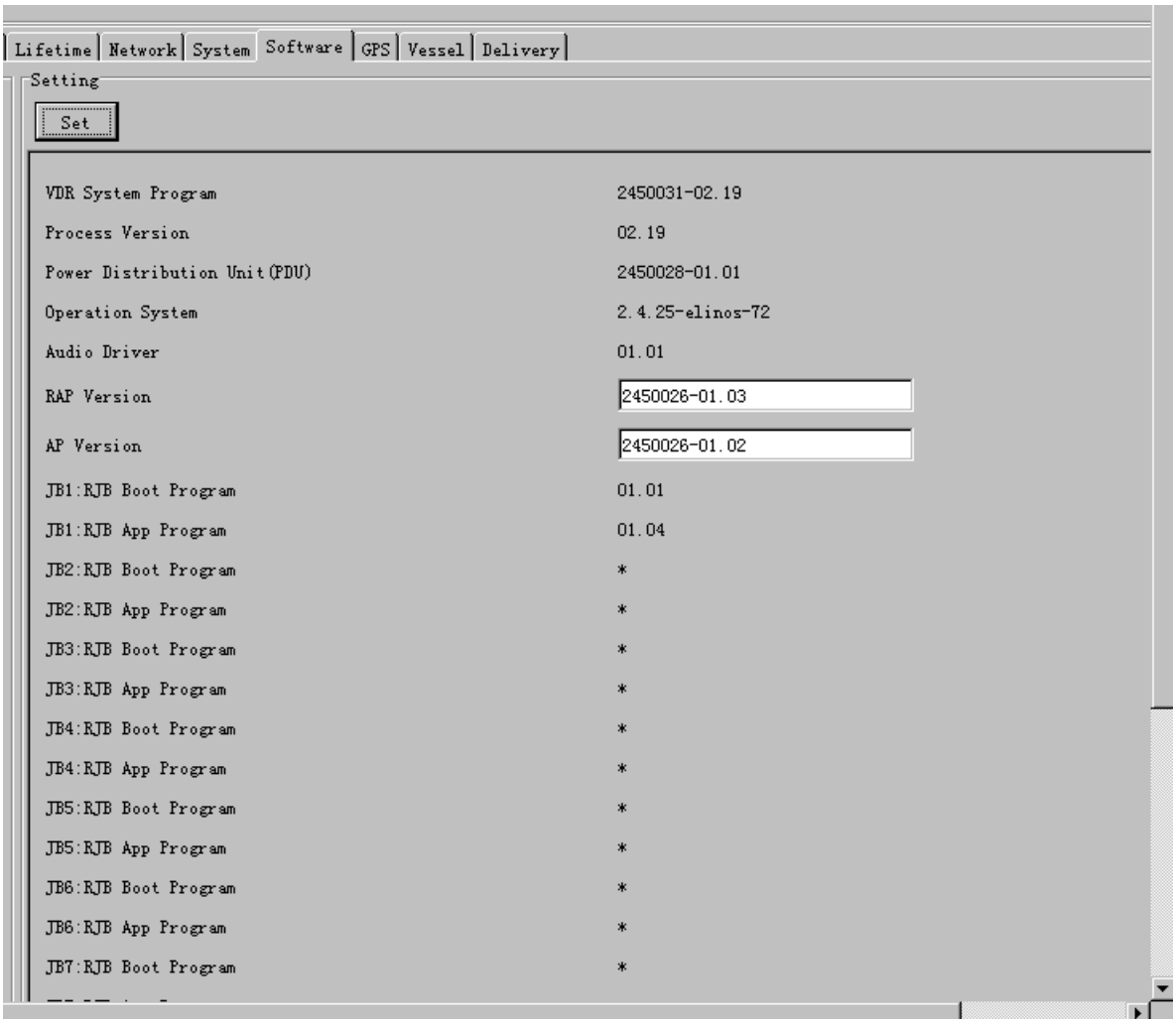
*Marked items are optional

2.14 Software

The Software tab sets and display software-related operations.

The basic procedure for using the Software tab is as follows:

1. Click the Software tab.
2. Set up the chosen Item from the Setting Area.



3. Click the **Set** button.

The items in the Setting window work as follows:

VDR System Program: Display the VDR system program no.

Process Version: Display the process version.

Power Distribution Unit (PDU): Display the version no. of the PDU.

Operation System: Display the version no. of the OS.

Audio Driver: Display the version no. of the audio driver.

RAP Version: Enter the version no. of the RAP.

AP Version: Enter the version no. of the AP.

JB1-8 Boot Program: Display the no. of the RJB Boot program for Junction Boxes 1 to 8.

JB1-8 App Program: Display the no. of the RJB App program for Junction Boxes 1 to 8.

Watch Dog Interval: Enter the process response time. A process is repeated if there is no response within the time interval set here.

Giveup Interval: Enter the restart watch time. The restarting of a process is stopped when the number of times it has been restarted is exceeded within the interval set here.

Refork Limit: Enter the upper limit for process restart. The restarting of a process is stopped when the number of times it has been restarted exceeds the Giveup Interval.

Note*: Enter note.

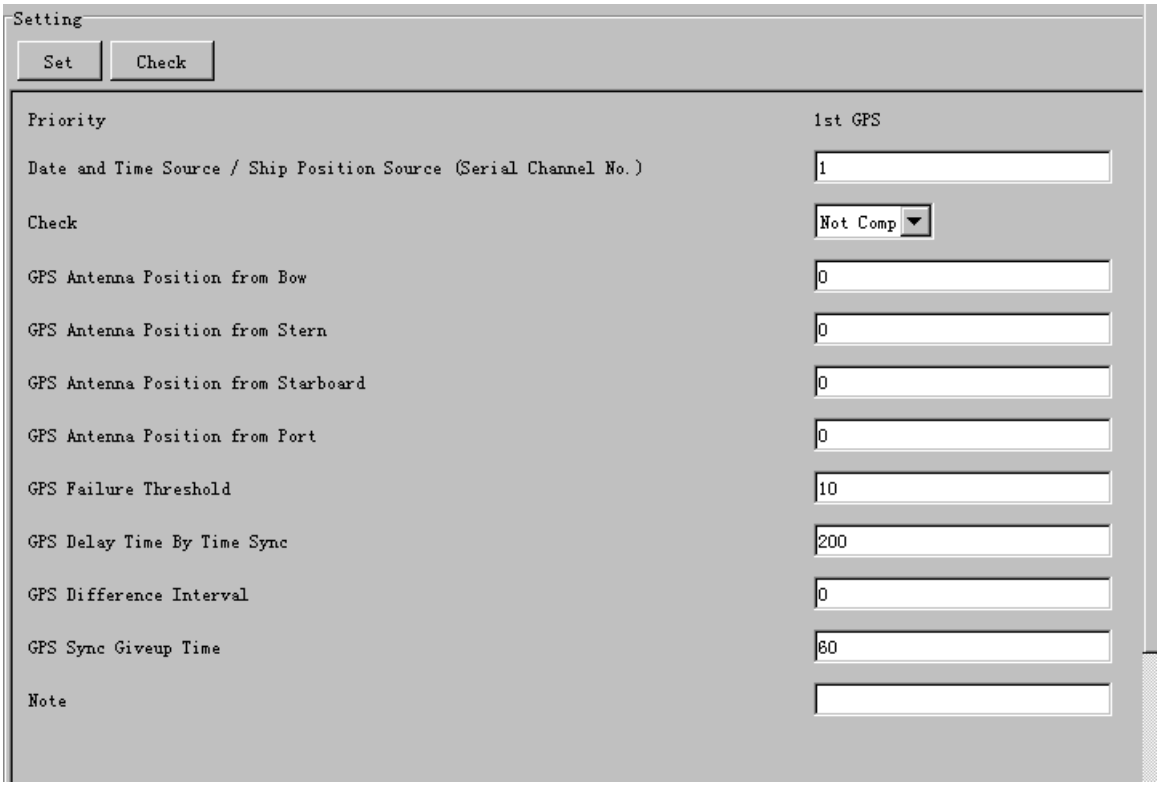
*Marked Items are optional

2.15 GPS

The GPS tab sets GPS-related parameters.

The basic procedure for using the GPS tab is as follows:

1. Click the GPS tab.
2. Set up the chosen channel from the Information window.
3. Set up the chosen item in the Setting Area.



4. Click the **Set** button.
4. Repeat steps 2-4 to set up each Channel.
5. Click the **Check** button to perform an inspection on all channels. In the Information Area check column, either OK or NG (No Good) is displayed.

The items in the Setting window work as follows:

Priority: Display priority order.

Date and Time/Ship Position Source: Set GPS source channel (serial channel number for ZDA sentence)

Check*: Enable and disable checking.

GPS Antenna Position From Bow: Enter position of GPS antenna from bow.

GPS Antenna Position From Stern: Enter position of GPS antenna from stern.

GPS Antenna Position From Port: Enter position of GPS antenna from port.

GPS Antenna Position From Starboard: Enter position of GPS antenna from starboard.

GPS Failure Threshold: If the ZDA is input within the set time limit, the system restarts synchronized. If not input within the time limit, the system restarts

without synchronization.

GPS Delay Time by Time Sync: Enter minimum time delay for time synchronization. Time synchronization is started only in the time set here.

GPS Difference Interval: The time set here is added to the GPS time to synchronize the system time.

GPS Sync Giveup Time: If the system receives the GPS time within the time set, the system synchronizes with the time. When not receiving a signal, the system displays an “error 26” message.

Note*: Enter and display note.

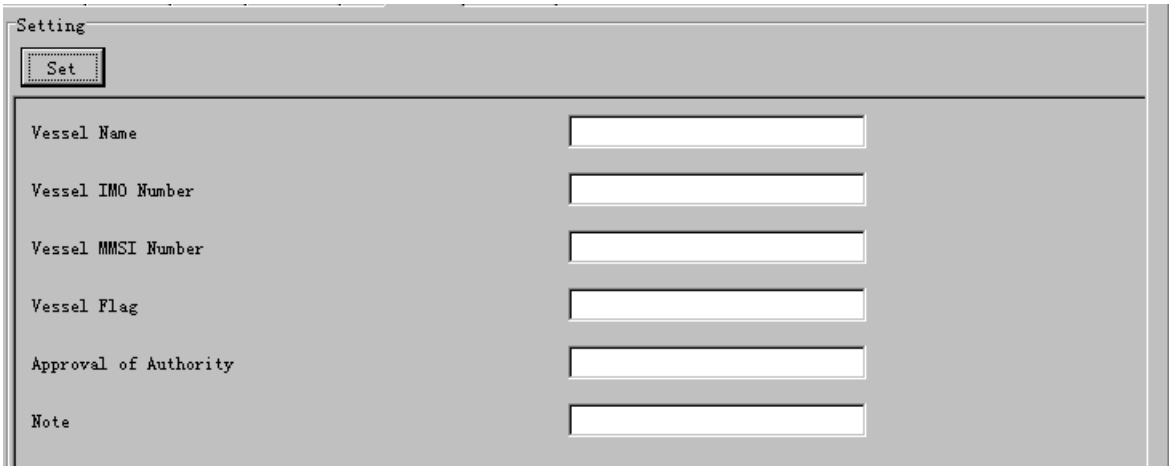
*Marked Items are optional.

2.16 Vessel

The Vessel tab sets and displays own ship's information, such as name and IMO number.

The basic procedure for using the Vessel tab is as follows:

1. Click the Vessel tab.
2. Set up information in the Setting window.



3. Click the **Set** button. (Be sure to do this before moving to another port.)
4. From the Maintenance menu, click VDR Config Management and then Config.
5. Click the **Write** buttons to save data to the DRU, backup HDD, CF.

The buttons in the Setting window works as follows:

Vessel Name: Enter name of vessel.
Vessel IMO Number: Enter IMO number of vessel.
Vessel Flag: Enter flag of vessel.
Approval of Authority: Enter name of approving authority.
Note*: Enter note.

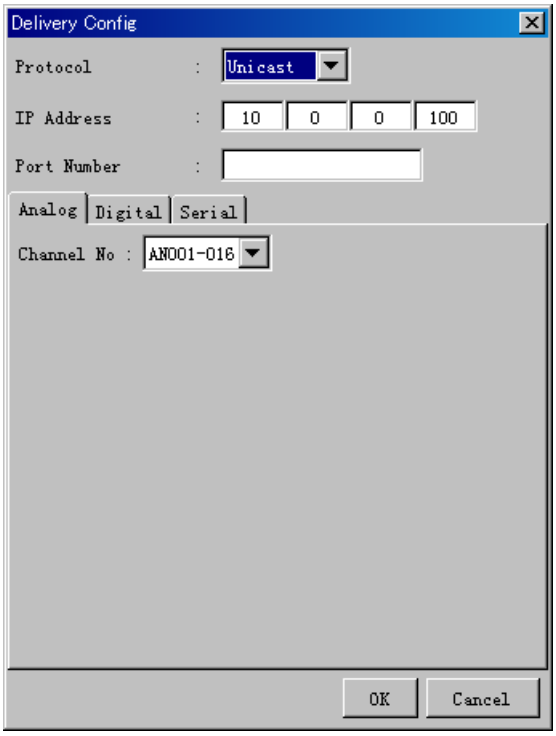
*Marked items are optional.

2.17 Delivery

The Delivery tab sets the data fed to other PC's, etc., via the Ethernet.

The basic procedure for using the Delivery tab is as follows:

1. Click the Delivery tab.
2. Click the **Add** button to show the Delivery Config window.



3. Select protocol from the Protocol drop-down box (Unicast or Multicast).
4. Enter IP address in the IP address input box.
5. Enter port number in the port number input box.
6. Click the tab of the data to send. (Analog, Digital or Serial)
7. Select the channel of the data to send.
8. If Serial was selected at step 6, select applicable data sentence from the Inactive window. Click the right arrow to move the data sentence to the Active window.
9. Click the **OK** button to close the Delivery Config window
10. The settings are listed in a table in the Delivery window. Check the checkbox in the Active column, and then click the **Set** button.

The buttons in the Setting window works as follows:

Set: Save edited settings.
Add: Create new delivery settings.
Modify: Modify selected delivery settings.
Delete: Delete selected delivery settings.

3. How to Back up Configuration Data

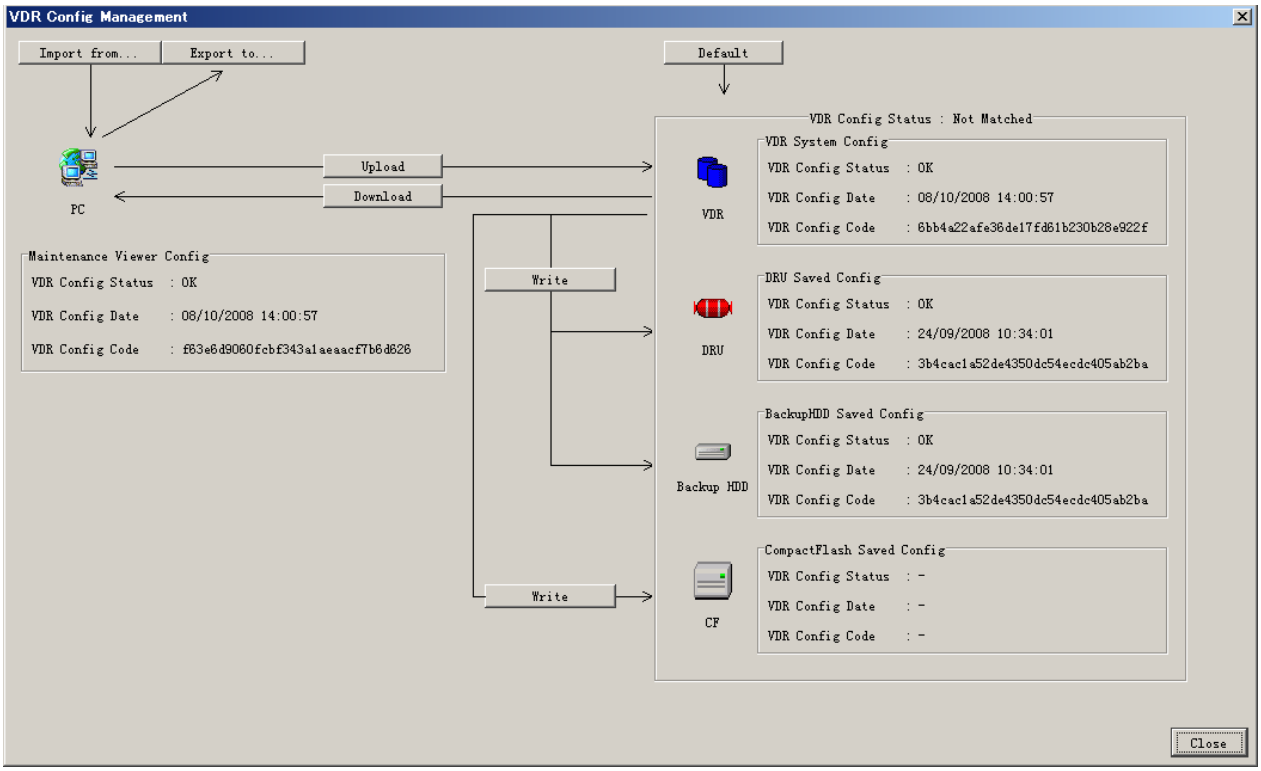
This chapter shows how to back up configuration data to various storage media. Configuration data can be opened with Word Pad or any text editor other than Notepad.

3.1 How to Back up Configuration Data to the Startup Compact Flash (CF)

Back up data to the startup CF after setting the VDR. Configuration data is created on the CF as a config.ini file.

Do the following to back up data to a CF:

1. Set up parameters on the tabs, referring to Chapter 2.
2. Click the Maintenance menu.
3. Select VDR Config Management.



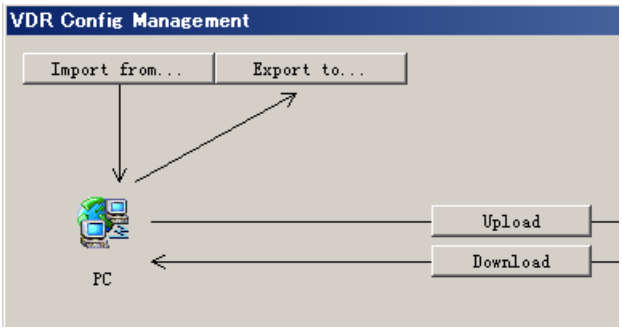
4. Click the **Upload** button.
5. A confirmation box appears; click the **OK** button to start uploading to the VDR.
6. Click the **Write** button where the arrow connects between VDR and DRU, backup HDD.
7. A confirmation window appears; click the **OK** button to save the configuration data to the DRU, and backup HDD.
8. Click the **Write** button where the arrow connects between the VDR and CF.
9. A confirmation window appears; click the **OK** button to save the configuration data to the startup CF.
10. Check that the PC, VDR, DRU, backup HDD and CF share the same VDR config code.

3.2 How to Back up Configuration Data to a PC

Configuration data saved to the PC can be edited with Wordpad and shared with other vessels. For future service ease, it is recommended to backup configuration data to the PC and have the data on board the vessel. Also, it is recommended to upload this data to Furuno SMS (Service Management System). If unable to upload to Furuno SMS, please contact the Service Center, Furuno, Japan.

To back up configuration data to the PC do as follows:

1. Set up parameters on the tabs, referring to Chapter 2.
2. Click the Maintenance menu.
3. Select VDR Config Management.
4. Click the **Export to** button.

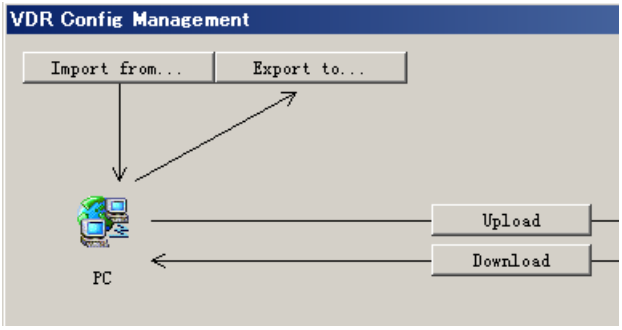


5. A confirmation window appears; click the **OK** button.
6. Select where to save the data, enter file name, then click the **Open** button.
7. Confirm that back up file is in the location selected.

4. How to Upload Configuration Data from a PC

The procedure below shows how to upload configuration from the PC to a VR-3000/VR-3000S.

1. Click the Maintenance menu.
2. Select VDR Config Management.



3. Click the **Import from** button.
4. The Open window appears. Select configuration data, and then click the **Open** button.
5. Click the **Upload** button to upload data to the VR-3000/VR-3000S.
6. Click the **Write** buttons to save data to the DRU, backup HDD, and CF.

5. Media Management

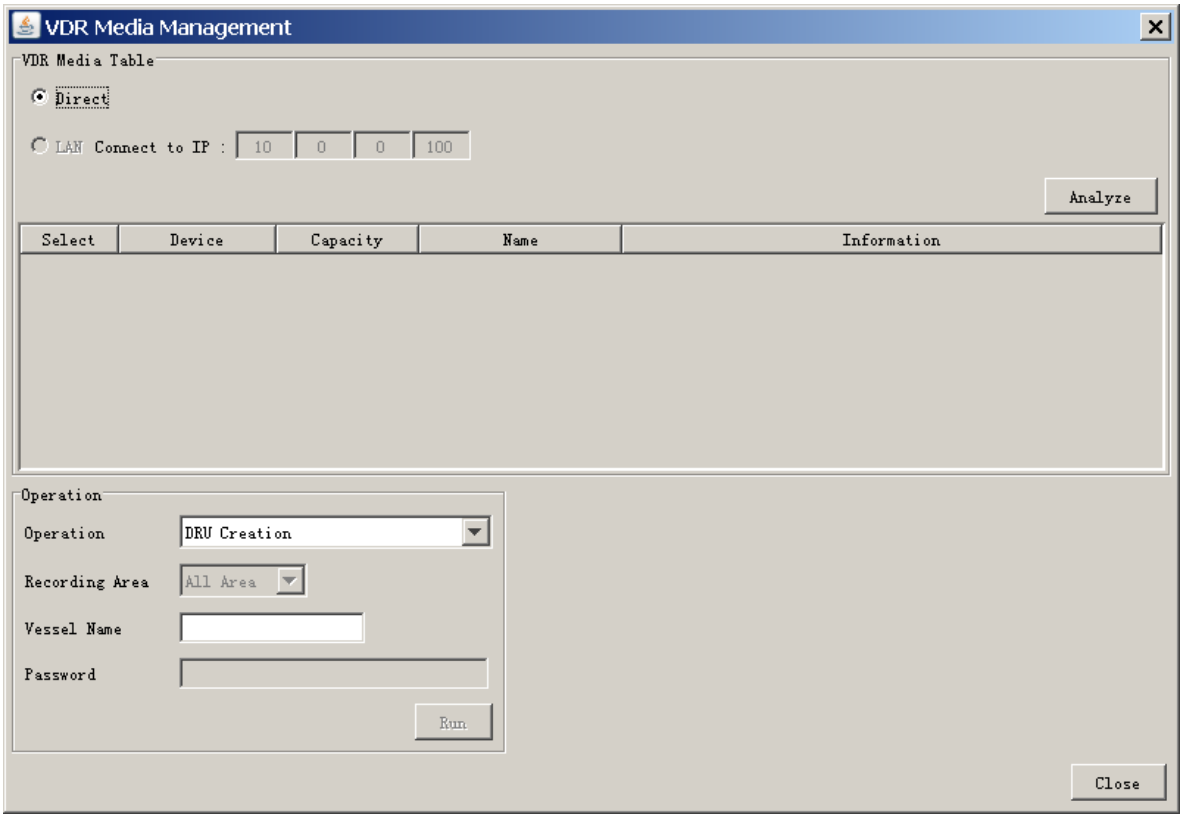
The media management feature deletes data from recording media; initialization the system, etc.

5.1 Initialization

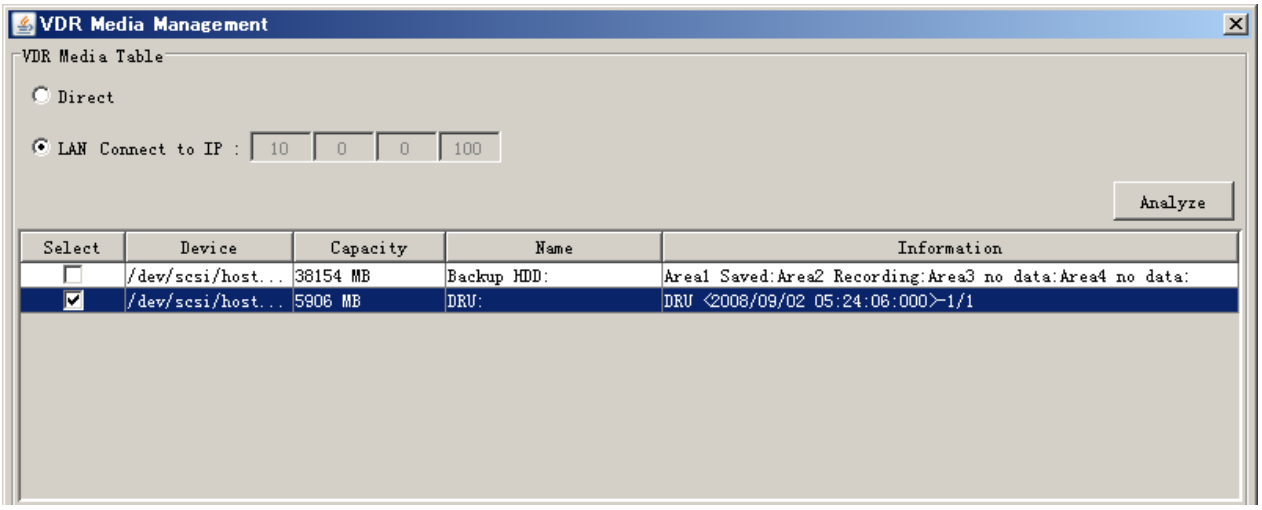
This section shows how to delete data from the recording media. Configuration data is not deleted. After performing the software configuration, delete the data from the DRU, and HDD.

Do the following to delete data from the DRU (LAN connection):

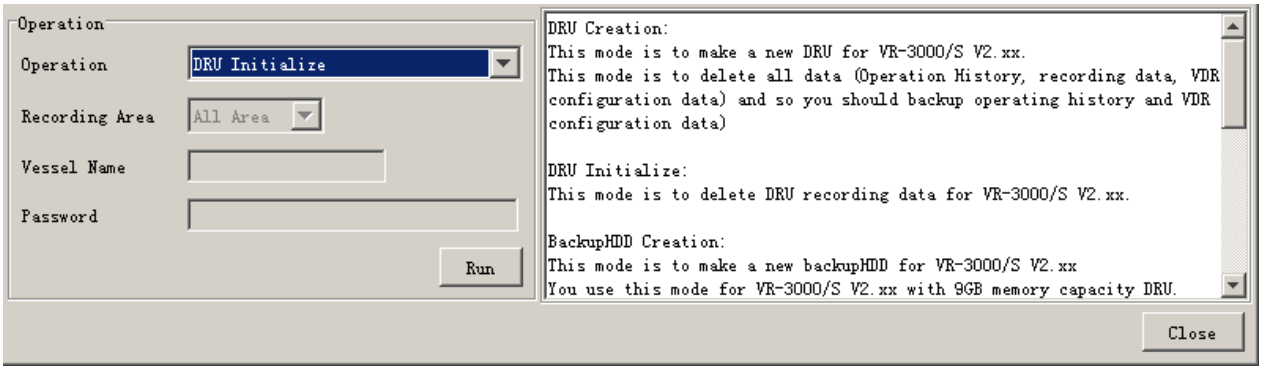
1. Set the Playback/CPU switch in the DCU to the CPU position.
2. Use an Ethernet cross cable to connect the PC to J14 (DATA) in the DCU (See page 4).
3. Open the Tool menu.
4. Select Media Management to open the VDR Media Management window.



5. Check that IP address shown in the “LAN Connect to IP” in VDR Media Table Area is the same as the IP address access point.
6. Select “LAN Connect to IP” in the VDR Media Table column.
7. Click the **Analyze** button. A list of recording media connected to the VDR appears.



8. Put a checkmark in the checkbox of the Select column for the DRU in the Name column.
   Note: If there are several flash memories in the DRU, all flash memories are shown. Check all flash memories shown.
9. Select “DRU Initialize” from the Operation dropdown list in the Operation area.



10. Click the **Run** button.

<u>Do the following to delete data from the DRU (**Direct connection**):</u>

1. Connect an IEEEE1394 cable between J6 on the DCU and the PC.
2. Set the Playback/CPU switch in the DCU to the Playback position.
3. Open the Tool menu.
4. Select Media Management to show the VDR Media Management window.
5. Select Direct in the VDR Media Table column.
6. Click the **Analyze** button. A list of recording media connected to the VDR appears.
7. Put a checkmark in the checkbox of the Select column for the DRU in the Name column.
   Note: If there are several flash memories in the DRU, all flash memories are shown. Check all flash memories shown.
8. Select “DRU Initialize” from the Operation dropdown list in the Operation area.
9. Enter password in the password column.
10. Click the **RUN** button.

Delete data from the backup HDD as follows (**LAN connection**):

1. Set the Playback/CPU switch in the DCU to the CPU position.
2. Check that an Ethernet cross cable is connected between J14 in the DCU and the PC.
3. Open the Tool menu.
4. Select Media Management to open the VDR Media Management window.
5. Check that IP address shown in the LAN Connect to IP in VDR Media Table Area is the same as the IP address access point.
6. Select LAN Connect to IP in the VDR Media Table column.
7. Click the **Analyze** button.
8. A list of recording media connected to the VDR appears.
9. Put a checkmark in the box of the Select column for the Backup HDD in the Name column. Select “Backup HDD Initialize” from the Operation dropdown list in the Operation area.
10. Click the **Run** button.

Delete data from the backup HDD as follows (**Direct connection**):

1. Connect an IEEE1394 cable between J6 on the DCU and the PC.
2. Set the Playback/CPU switch in the DCU to the Playback position.
3. Open the Tool menu.
4. Select Media Management to open the VDR Media Management window.
5. Select Direct in the VDR Media Table window.
6. Click the **Analyze** button. A list of recording media connected to the VDR appears.
7. Put a checkmark in the check box of the Select column for the Backup HDD in the Name column. Select “Backup HDD Initialize” from the Operation dropdown list in the Operation area.
8. Enter password.
9. Click the **Run** button.

5.2 Creation

The Creation feature initializes recording media.

Note: This feature deletes ALL configuration data. Be absolutely sure that is ok to delete all configuration data.

Initialize the DRU as follows (**LAN connection**):

1. Set the Playback/CPU switch in the DCU to the CPU position.
2. Check that an Ethernet cross cable is connected between J14 in the DCU and the PC.
3. Open the Tool menu.
4. Select Media Management to open the VDR Media Management window.
5. Check that IP address shown in the LAN Connect to IP in VDR Media Table Area is the same as the IP address access point.
6. Check “LAN Connect to IP” in the VDR Media Table column.
7. Click the **Analyze** button. A list of recording media connected to the VDR appears.
8. Put a checkmark in the box of the Select column for the DRU in the Name column. Select “DRU Creation” from the Operation dropdown list in the Operation area.
9. Click the **Run** button.

Initialize the Backup HDD as follows (**LAN connection**):

1. To format the Backup HDD, place a checkmark in the Select column of the listed record media in the Name column of the VDR Media Management dialogue box.
2. From the Operation drop down list of the Operation area, select “Backup HDD Creation (Radar) or “Backup HDD Creation”.

Note: The Backup HDD format method differs with 6GB and 9 GB DRU.

- Use “Backup HDD Creation (Radar) with 6GB.
- Use “Backup HDD Creation” with 9GB.

3. Press the **Run** Button.

Initialize the DRU as follows (**Direct connection**):

1. Connect an IEEE1394 cable between J6 on the DCU and the PC.
2. Set the Playback/CPU switch in the DCU to the Playback position.
3. Open the Tool menu.
4. Select Media Management to open the VDR Media Management window.
5. Select Direct in the VDR Media Table window.
6. Click the **Analyze** button. A list of recording media connected to the VDR appears.
7. Put a checkmark in the box of the Select column for the DRU and the desired recording media in the Name column.
   In the Operation dropdown list of the Operation area, select “DRU Creation”.
8. Enter password in the password column.
9. Click the **Run** button.

Initialize the Backup HDD as follows (**Direct Connection**):

1. To format the Backup HDD, place a checkmark in the Select column of the listed record media in the Name column of the VDR Media Management dialogue box.
2. From the Operation column of the Operation area, select “Backup HDD Creation (Radar) or “Backup HDD Creation”.

   Note: The Backup HDD format method differs with 6GB and 9 GB DRU.

   - Use “Backup HDD Creation (Radar) with 6GB.
   - Use “Backup HDD Creation” with 9GB.
3. Enter the password in the Password column.
4. Press the **Run** Button.

5.3 How to Enable Recording Area on the Backup HDD

This function enables writing over a recording area.

Recording enable (**LAN connection**):

1. Set the Playback/CPU switch in the DCU to the CPU position.
2. Check that an Ethernet cross cable is connected between J14 in the DCU and the PC.
3. Open the Tool menu.
4. Select Media Management to open the VDR Media Management window.
5. Check that IP address shown in the “LAN Connect to IP” in VDR Media Table Area is the same as the IP address access point.
6. Select “LAN Connect to IP” in the VDR Media Table column.
7. Click the **Analyze** button. A list of recording media connected to the VDR appears.
8. Put a checkmark in the box of the Select column for the Backup HDD in the Name column.
9. Select “Backup HDD Recording Area Enable” from the Operation dropdown list in the Operation area.
10. Click the **Run** button.

Recording enable (**Direct connection**):

1. Connect an IEEE1394 cable between J6 on the DCU and the PC.
2. Set the Playback/CPU switch in the DCU to the Playback position.
3. Open the Tool menu.
4. Select Media Management to open the VDR Media Management window.
5. Select Direct in the VDR Media Table window.
6. Click the **Analyze** button. A list of recording media connected to the VDR appears.
7. Put a checkmark in the box of the Select column for the Backup HDD in the Name column.
8. Select “Backup HDD Recording Area Enable” from the Operation dropdown list in the Operation area.
9. Enter password.
10. Click the **Run** button.

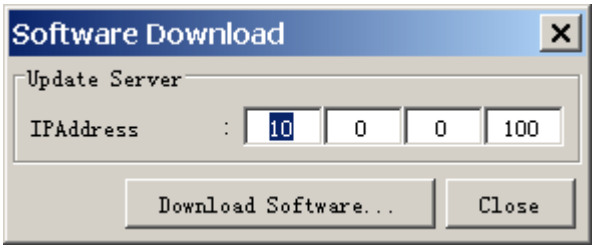
6. Other Functions

6.1 Software Management

The software download feature downloads VDR system software to the PC.

To download software:

1. Click the Maintenance menu.
2. From the Software Management menu, click Software Download to show the Software Download window.



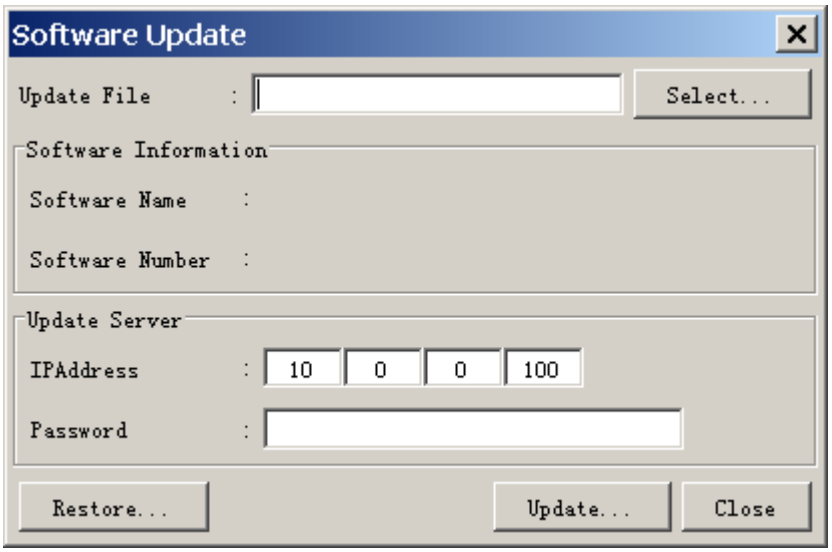
3. Enter the IP address 10.0.0.100 in the IP address box in the Update Server area.
4. Click the **Download Software** button.
5. The confirmation window appears; click the **OK** button.

The Software Backup Execute window shows the results of the download.

Software is downloaded to C:\Program Files\VDR\VDR\Viewer\Viewer\Backup. The software file name is vdr.tar.

To Upload Software:

1. Click the Maintenance menu.
2. From the Software Management menu, click Software Upload to show the Software Upload area.



3. Click the **Select** button to show the Open window.
4. Select update file (vdr.tar) and click the **Open** button.
5. Check the displayed Software information is correct.
6. Enter the IP address 10.0.0.100 in the IP address box in the Update Server area.

7. Enter password.
8. Click the **Update** button.

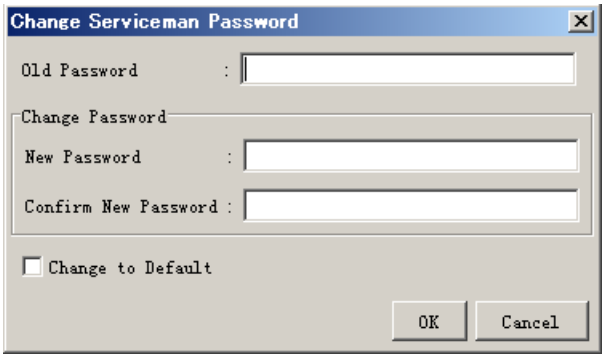
After the updating is completed, the VDR is automatically restarted.

6.2 Password Management

The password can be changed for a serviceman to access the equipment. Contact FURUNO to get the default password to use during installation.

Serviceman password

1. Click the Maintenance menu.
2. Select Change Serviceman Password from Password Management to show the Change Serviceman Password window.



3. Enter current password in the Old Password box.
4. Enter the new password in the New Password box of the Change Password area.
5. Enter new password again, in the Confirm New Password box.
6. Click the **OK** button.

Audio password

The audio password set at the VDR viewer can be removed to enable audio access without password.

1. Click the Maintenance menu.
2. Select Change Audio Password from Password Management to show the Change Audio Password window.
3. The confirmation window appears; click the **OK** button.

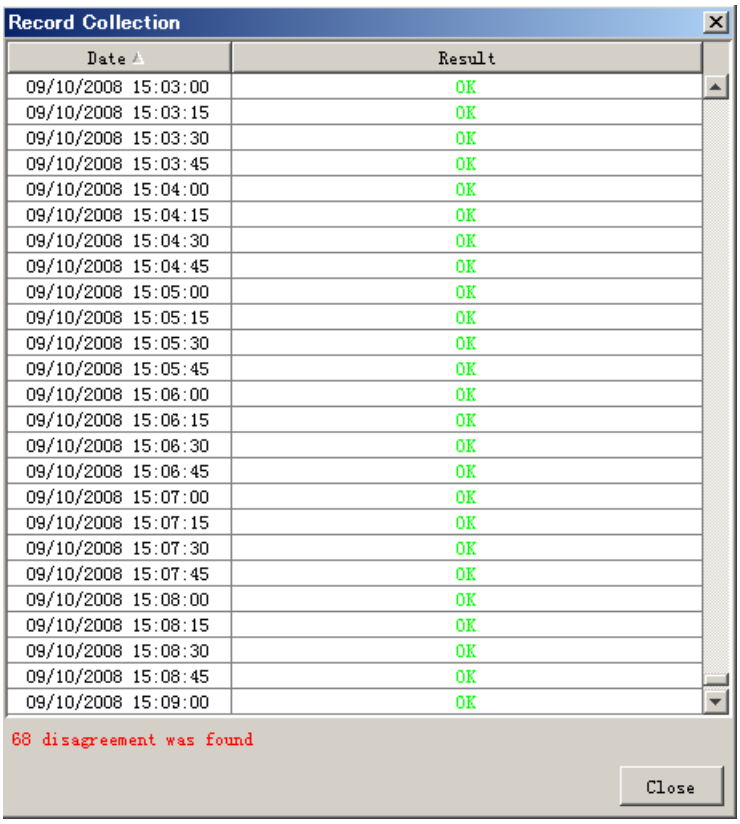
6.3 Record Comparison

The integrity of the DRU and Backup HDD recordings can be compared.

Follow the procedure as shown below:

1. Click the Maintenance menu.
2. Select Record Comparison to show the Record Comparison window.

The results are shown every 15 seconds in the Record Comparison window.

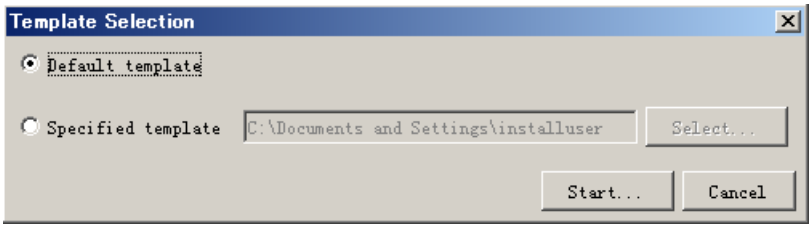


6.4 Easy Setup

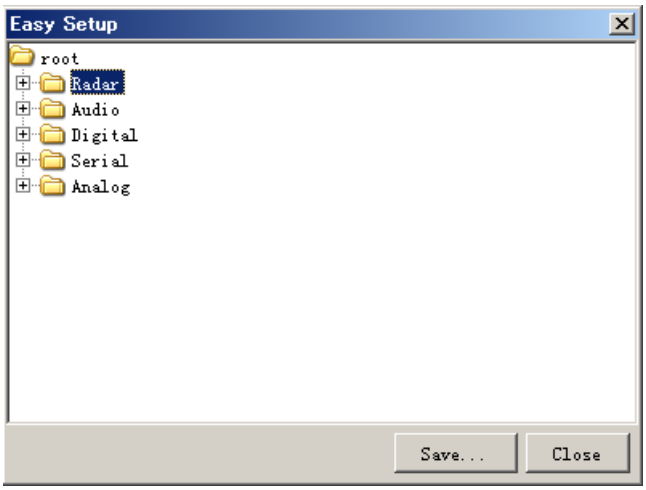
This feature sets equipment settings in batch and creates a data file of those settings.

Default template: The default template is created with the settings entered at installation.

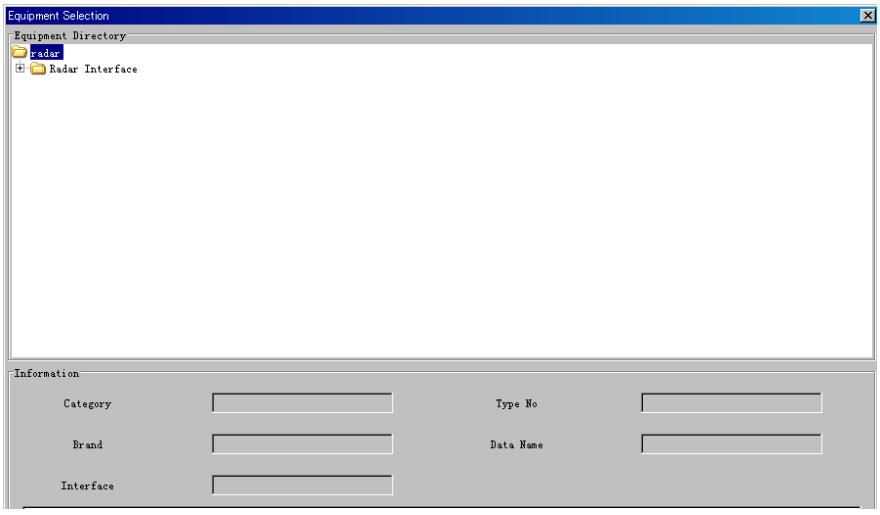
1. Click the Maintenance menu.
2. Select Easy Setup to show the Template Selection window.



3. Select Default Template.
4. Click the **Start** button to show the Easy Setup window.



5. Right click the channels (Radar, Audio, Digital, Serial, Analog), then select Edit to show the Equipment Selection window.



6. From the Equipment Directory window, select equipment connected to the selected channel, and then click the **OK** button.
7. Repeat steps 5 and 6 to select equipment settings for each channel.
8. Click the **Save** button in the Easy Setup window to show the Save window.

9. Select where to save the file and enter file name.
10. Click the **Save** button.

Specific template: Use a file already created

1. Click the Maintenance menu.
2. Select Easy Setup to show the Template Selection window.
3. Check Specified Template.
4. Click the **Select** button, and then select the file to edit.
5. Click the **Start** button to show the Easy Setup window.
6. Right click the channels (Radar, Audio, Digital, Serial, Analog), then select Edit to show the Equipment Selection window.
7. From the Equipment Directory window, select equipment connected to the selected channel, and then click the **OK** button.
8. Repeat steps 6 and 7 to select equipment settings for each channel.
9. Click the **Save** button in the Easy Setup window to show the Save window.
10. Select where to save the file and enter file name.
11. Click the **Save** button.

6.5 Equipment Management

This feature controls the import and export of equipment settings.

Import data file:

Import data files of equipment settings created in Easy Setup, etc. to the VDR.

1. Click the Maintenance menu.
2. Select Import from Equipment Management to show the Open window.
3. Select the data file to import and click Open.

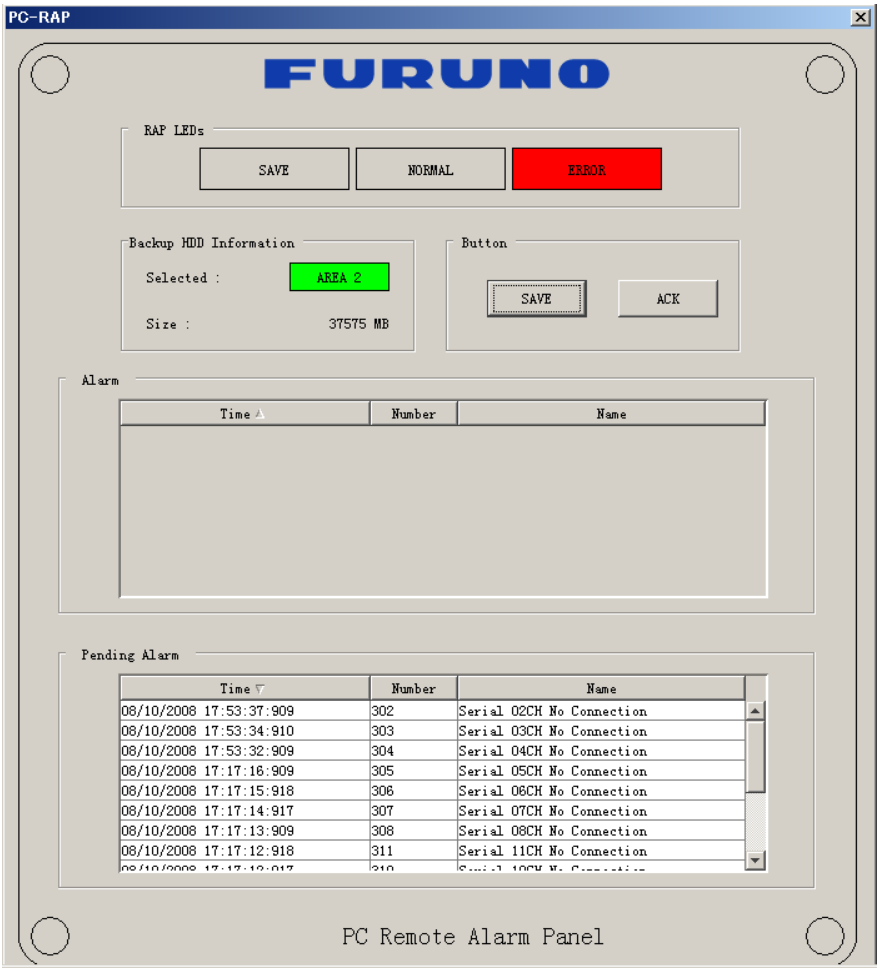
Export data file:

Export data files of equipment settings from the VDR to a PC.

1. Click the Maintenance menu.
2. Select Export from Equipment Management to show the Save window.
3. Enter file name.
4. Click the **Save** button.

6.6 PC_RAP

This feature enables the same operation of the RAP (Remote Alarm Panel) from a PC. Select PC_RAP from the Tool menu to show the PC_RAP window.



The buttons in the PC_RAP window function as shown below:

SAVE: Stop recording in the area where recording is currently being done.

ACK: Silence audio alarm.

The PC_RAP display shows the following information with LEDs:

RAP_LEDs: Display the status of LEDs on the RAP.
Save: The **Save** button blinks yellow when pushed. When the 4 memory areas have data recorded to them, the **Save** button lights orange when pushed.
Normal: Lights (green) where there are no unconfirmed or not restored alarms.
Error: Flashes (red) for not confirmed alarm. Lights (red) for unrestored alarm.

Backup HDD Information: Display status of backup HDD:

Selected: Display current recording area and its status in green for normal operation, and in red for abnormal operation.
Size: Display capacity of backup HDD.

Alarm area displays unconfirmed alarms:

Time: Display time alarm was generated.
Number: Display number of alarm.
Name: Display name of alarm

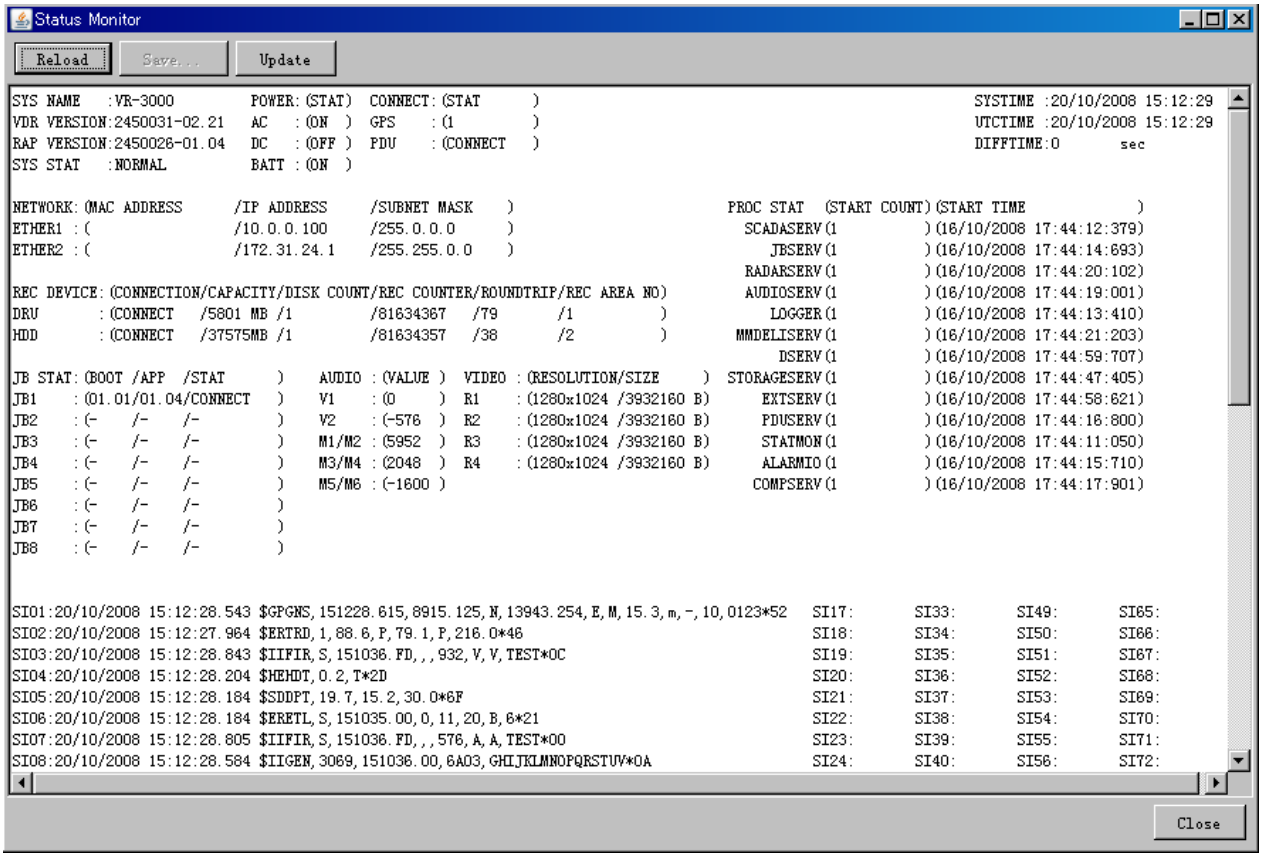
Pending Alarm displays the unrestored alarms out of confirmed alarms only:

Time: Display time alarm was generated.
Number: Display number of alarm.
Name: Display name of alarm.

6.7 Other

Status Monitor

The status monitor feature provides comprehensive data about the status of the VDR. From the menu bar, click Tool> Status Monitor to show the Status Monitor window.



The buttons in the Status Monitor window work as shown below:

Reload: Settings for automatic refreshing of the status monitor.

ON: Turn automatic refresh OFF.

OFF: The Status Monitor is refreshed every five seconds.

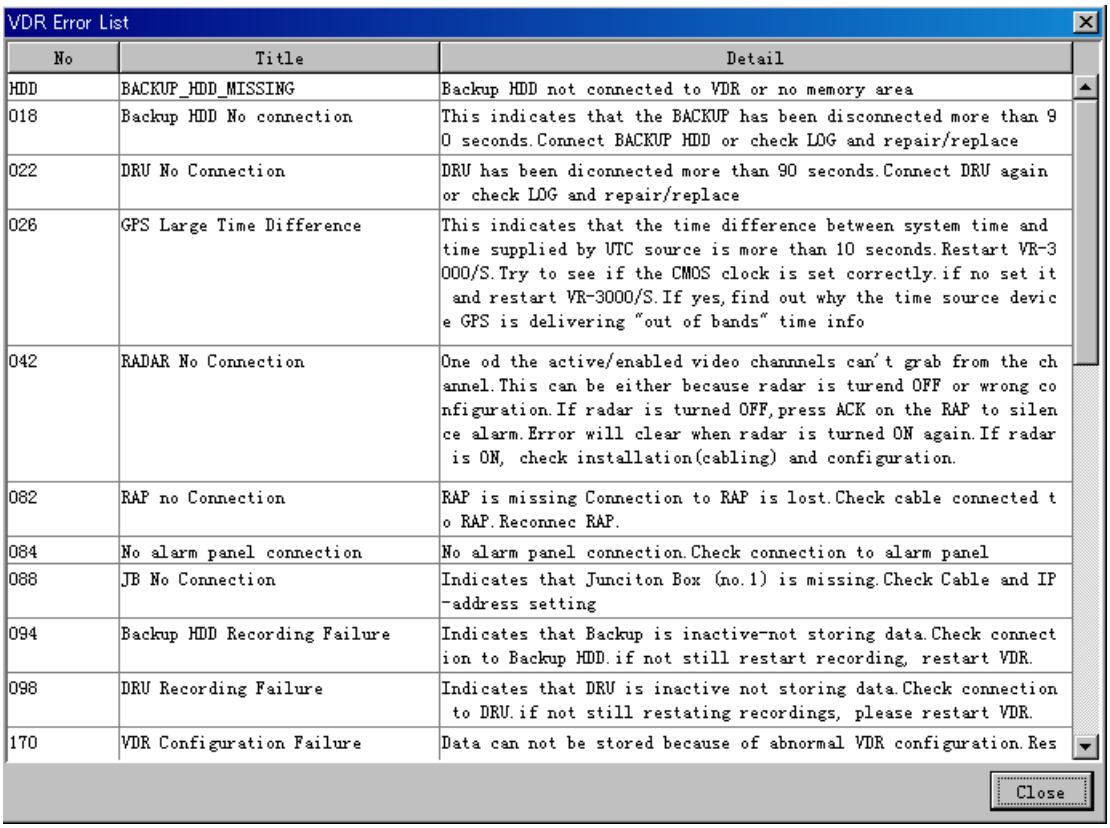
Save: Available when Reload ON is selected. The contents of the Status Monitor can be saved to a text file.

Update: Update the Status Monitor display.

Close: Close the Status Monitor display.

VDR Error List

This feature compiles all the errors shown on the RAP for easy reference.
Access from Menu>Tool>VDR Error List.



No	Title	Detail
HDD	BACKUP_HDD_MISSING	Backup HDD not connected to VDR or no memory area
018	Backup HDD No connection	This indicates that the BACKUP has been disconnected more than 90 seconds. Connect BACKUP HDD or check LOG and repair/replace
022	DRU No Connection	DRU has been diconnected more than 90 seconds. Connect DRU again or check LOG and repair/replace
026	GPS Large Time Difference	This indicates that the time difference between system time and time supplied by UTC source is more than 10 seconds. Restart VR-3000/S. Try to see if the CMOS clock is set correctly. if no set it and restart VR-3000/S. If yes, find out why the time source device GPS is delivering "out of bands" time info
042	RADAR No Connection	One od the active/enabled video channnels can't grab from the channel. This can be either because radar is turend OFF or wrong configuration. If radar is turned OFF, press ACK on the RAP to silence alarm. Error will clear when radar is turned ON again. If radar is ON, check installation(cabling) and configuration.
082	RAP no Connection	RAP is missing Connection to RAP is lost. Check cable connected to RAP. Reconnec RAP.
084	No alarm panel connection	No alarm panel connection. Check connection to alarm panel
088	JB No Connection	Indicates that Junciton Box (no.1) is missing. Check Cable and IP-address setting
094	Backup HDD Recording Failure	Indicates that Backup is inactive-not storing data. Check connection to Backup HDD. if not still restart recording, restart VDR.
098	DRU Recording Failure	Indicates that DRU is inactive not storing data. Check connection to DRU. if not still restating recordings, please restart VDR.
170	VDR Configuration Failure	Data can not be stored because of abnormal VDR configuration. Res

The VDR error list contains the following information:

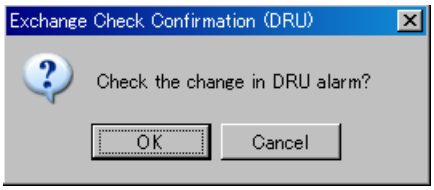
NO.: Display the number of the error.

Title: Display the name of the error.

Detail: Display details about the error.

Exchange Check

This feature removes the alarms generated when replacing the DRU, or backup HDD.
Access Menu>Tool>Exchange Check, select either DRU or Backup HDD, and click **OK**.



Reboot

Reboot the VDR.

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