SVP SECTION

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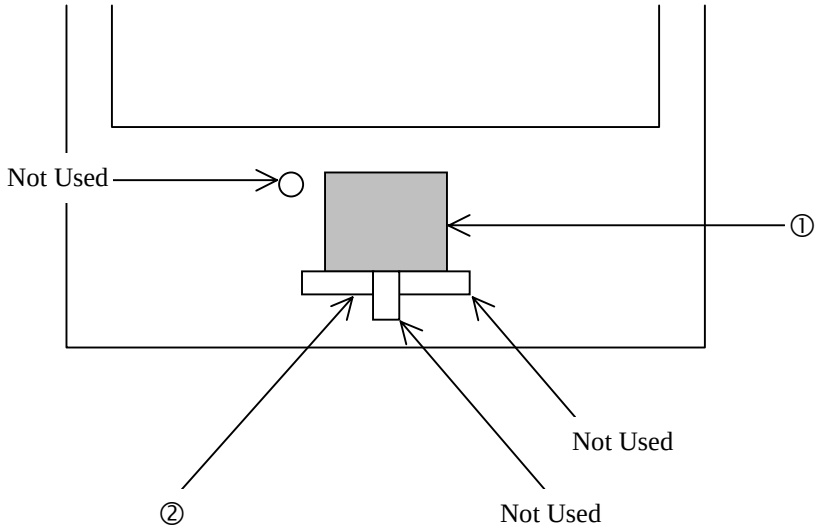
1 How to Operate the SVP (PC)

This manual describes how to operate the SVP (PC) with a touchpad.

1.1 How to use a touchpad



①：Touchpad
Trace this device to move the pointer to a desired position.

②：Button
Pressing this button selects an item on which the pointer is placed.

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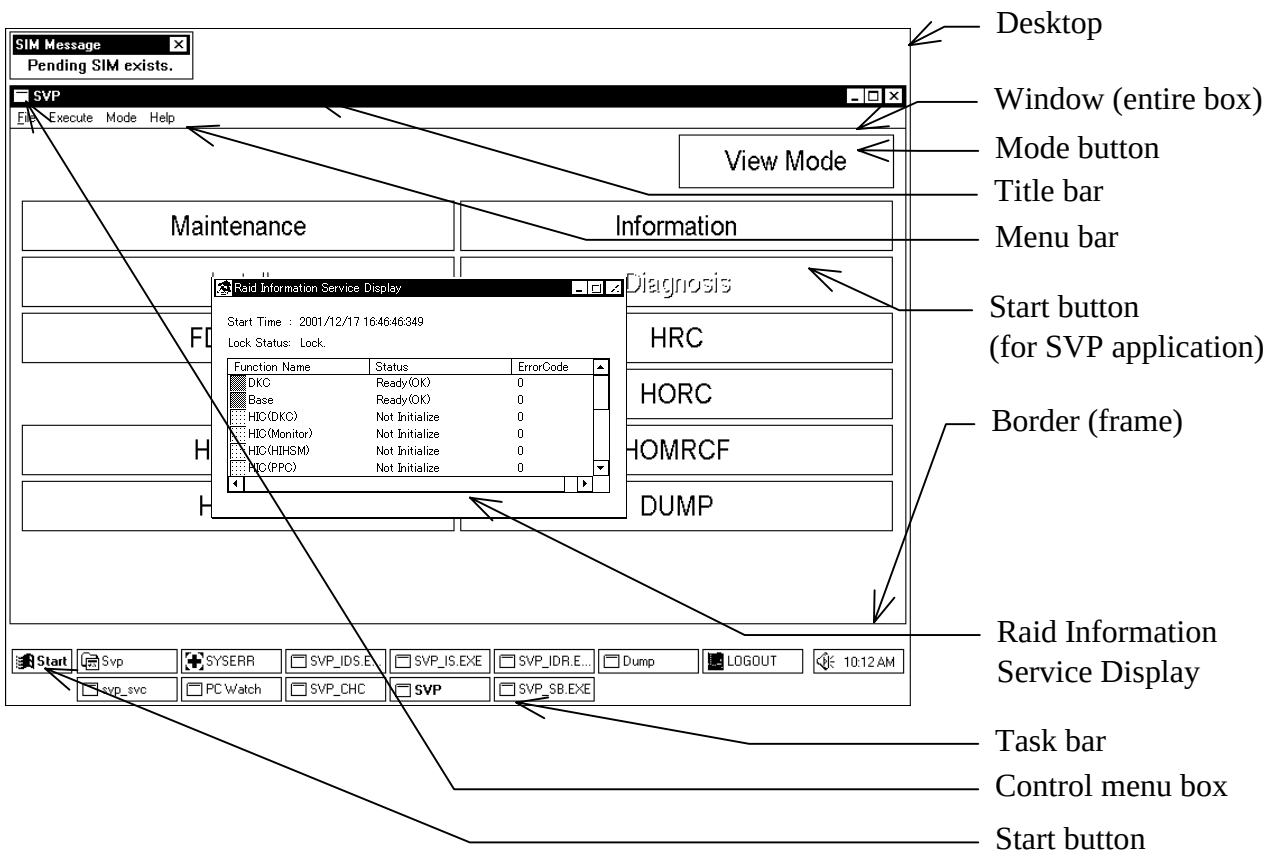
1.2 Windows Screen Component Nomenclature

Either of the following windows is displayed.



Note 1: Each SVP screen on this maintenance manual is a sample, and it may not be the same as the actual screen.

Note 2: Raid Information Service Display shows a status of the service being done by the Web Console.
When Lock Status on this screen is Lock, you cannot perform maintenance from SVP. (You can change to Modify mode.)
Wait until Lock Status becomes Unlock. If you do not use Web Console from SVP or a remote machine, errors on this screen do not effect the operation. You can perform maintenance from SVP when Lock Status is Unlock.
(When an error occurs, retry process runs periodically, and Lock Status becomes Lock Status periodically.)
For farther details, refer to the section, “Web Console”.

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1.3 How to use Windows

(1) Notation

In this manual, “select” has the following three meanings, and (CL), (DC), or (DR) is added to the word for each meaning.

(CL) Click: Quickly press and release the button the touchpad.
(DC) Double-click: Click the button the touchpad twice in rapid succession.
(DR) Drag: To hold down the button above the touchpad while you trace the touchpad to move the pointer to a desired position. Then release the button.

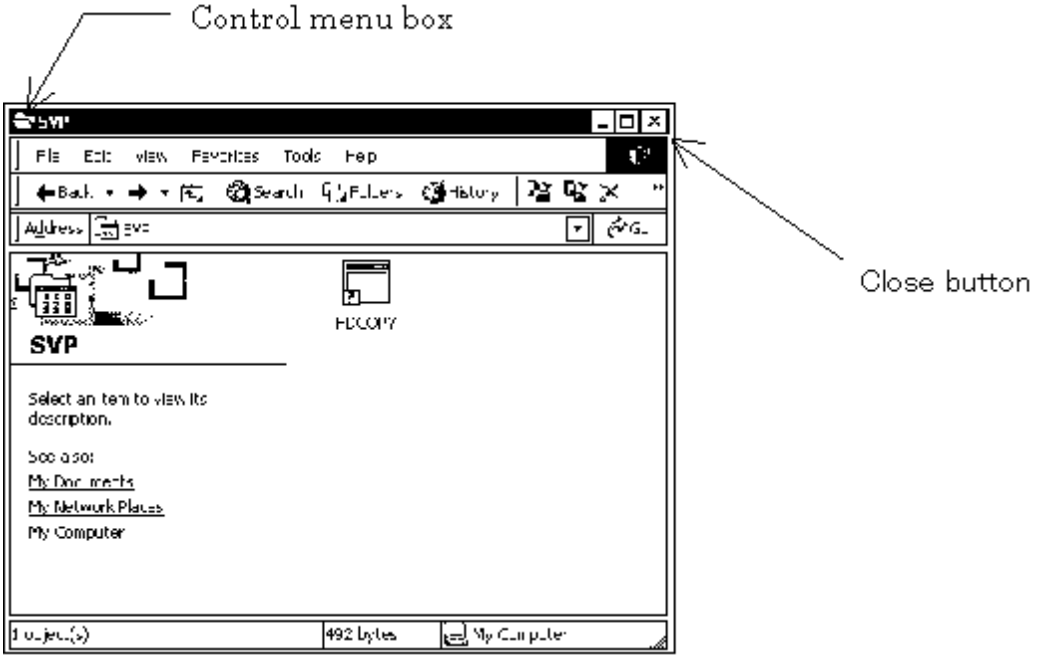
example)

Select (DC) the [Install] icon in the ‘SVP’ window.

Move the pointer to [Install] with the touchpad. Then click the button the touchpad twice in rapid succession.

(2) Close

“Close” means to close the aplication window.
(Double-click the control menu box of the window or click the close button for Windows 95.)



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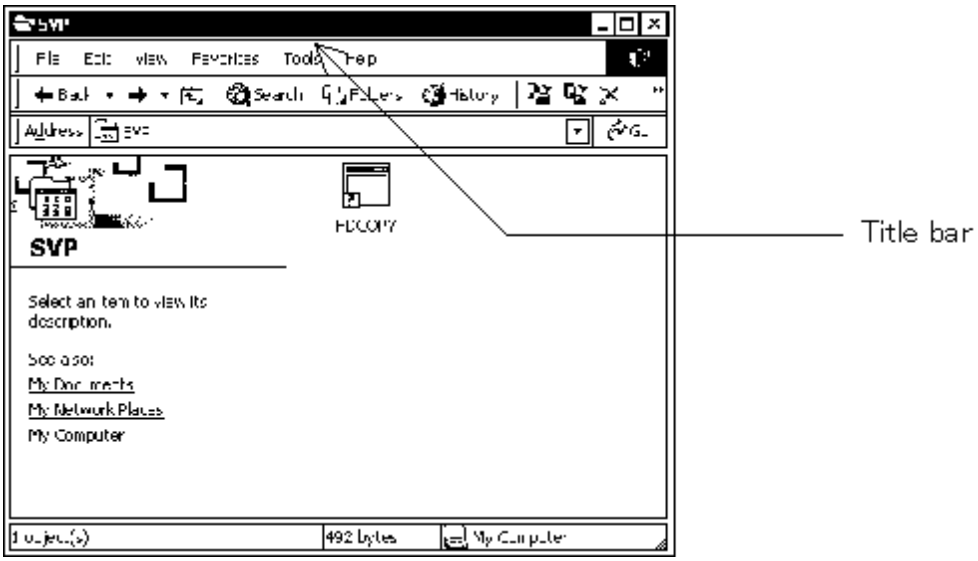
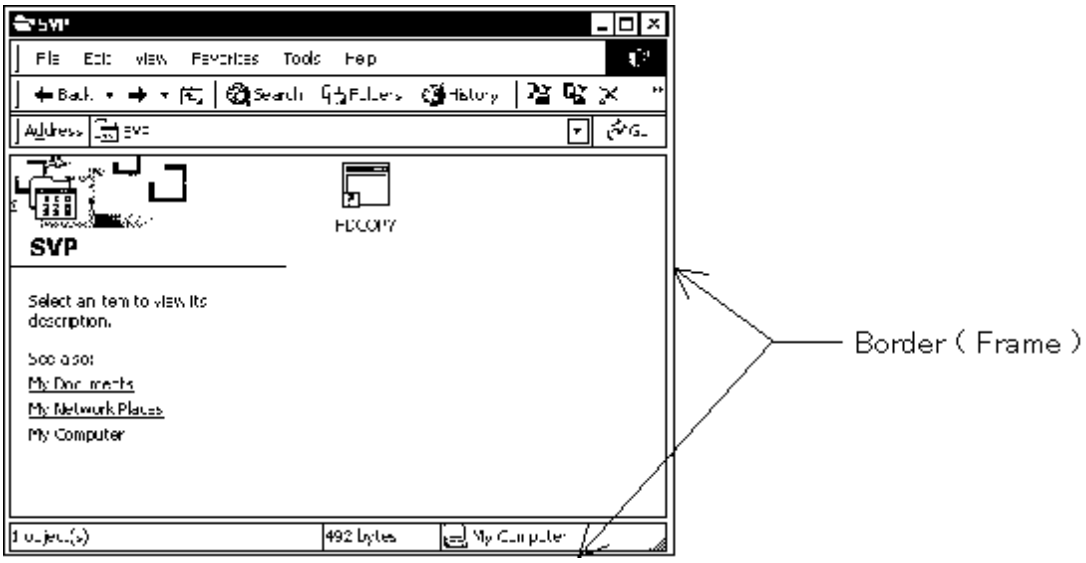
(3) Moving the Window

Move the pointer to the title bar with the trackball.
While pressing the button, move the window with the trackball or touchpad (DR) to a desired position and release the button.



(4) Changing the window size

Move the pointer to the window border (frame) (the pointer changes to the double- headed arrow). While pressing the button, move the border (the border changes to the broken line) until the window becomes a desired size, and release the button.



(5) Switching the screen (when two or more screens are opened)

While pressing the ALT key , press TAB (or ESC) until your desired window title is displayed, and release the ALT key.

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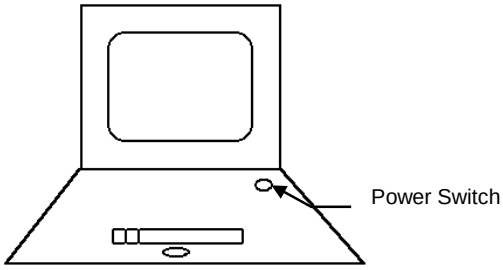
1.4 Power On

Usually, SVP starts automatically at the breakers-ON.
If some problems occurred and you must start SVP, do as following procedures.

(1) Power On SVP
a. Press Power Switch on the SVP keyboard.
b. Watch messages displayed on the SVP screen.
If following messages are displayed, Go to (2).
Otherwise, power off (press Power Switch)
and on SVP to retry. (*1)
After retrying twice, replace SVP.



[Message]
Starting Windows…
(Some other messages)

(2) Windows Start (SVP Start)
a. Wait a few minutes until Windows system starts.
b. Read the message displayed on the SVP screen. (Go to SVPMSG section)
Otherwise, power off (press Power Switch) and on SVP to retry. (*1)
After retrying twice, replace SVP.
[End of Power On]

*1: If you press only Power Switch on the SVP keyboard when SVP and Windows system are active, these systems will be frozen.
You should be sure to press Power Switch for power off SVP.

*2: If Windows doesn't start, check the following items.
(1) Is the DKC "CE mode" ?
(2) The two LEDs at the LAN cable socket are always on?

If above two conditions are satisfied, pull out LAN cable until Windows starts.

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Blank Sheet

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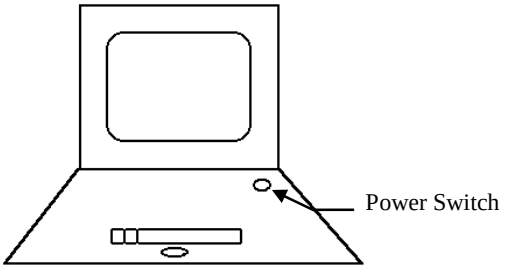
1.5 Power Off

(1) What is running?

a. See what is displayed.
   If Windows is displayed, go to (2).



(2) Exit Windows(Stop SVP)

a. Select (CL) “Start button”.
b. Select (CL) “Shut Down”.
c. Select (CL) “Shut Down the computer?”, and Select (CL) [Yes].
   [End of Power Off]

(3) Power Off SVP

a. Press Power Switch simultaneously.
   [End of Power Off]

Note : Do not press only Power Switch key.
Because, since SVP does not stop to perfection, we do not guarantee the operation of SVP after re-power on.
If only Power Switch key was pressed, please power off SVP.

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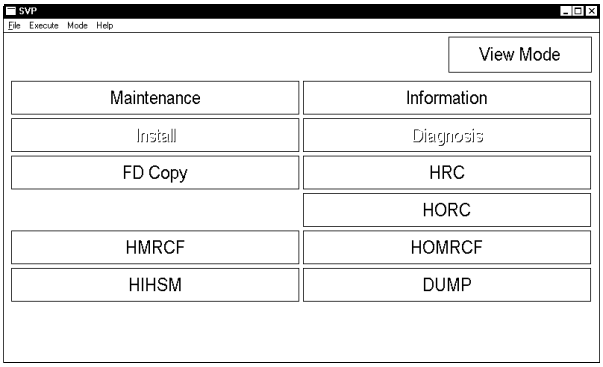
1.6 Mode

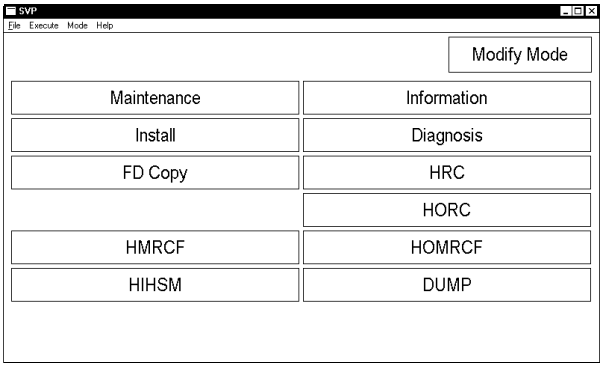
(1) View Mode
In view mode, only referring the subsystem status can be allowed.

Note: When view mode, pending SIMs (if exist) are reported to host.



(2) Modify Mode
In modify mode, referring and changing the subsystem status can be allowed.

For example, log/pin data indication and status display on MAINTENANCE are available in any mode, but replacement is available in only modify mode.



(3) Change Mode
If you push (CL) [View Mode] button, it changes [Modify Mode], and SVP changes Modify Mode.
If you push (CL) [Modify Mode] button, it changes [View Mode], and SVP changes View Mode.

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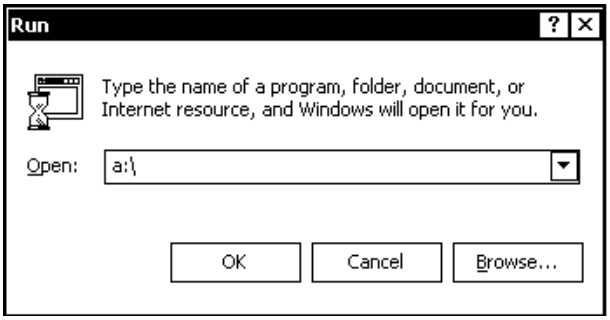
1.7 Run

(1) <Select the [Run]>
Select (CL) [Run...] by selecting [Start button] for the pull down menu.

(2) <Input file name>
Input file name in 'Open' and select (CL) [OK].



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1.8 How to reference the manual on CDR

Preface

The Maintenance Manual is released by CDR.
The manual is provided in the PDF (Portable Document Format). To read this manual, you must have a special reader software program in SVP.

How to install Acrobat Reader

The CDR contains the setup program of Acrobat Reader. You can use this setup program to install Acrobat Reader into SVP. To install Acrobat Reader:

(1) Insert the CDR into the drive of your PC.
(2) Use Explorer to locate the CDR drive.
(3) Double-click the "Acr\xxx.exe" to start the setup program.
(4) Follow instruction messages to install Acrobat Reader.

How to reference the manual

To reference this manual:

(1) Insert the CDR into the drive of your PC.
(2) Use Explorer to locate the CDR drive.
(3) Double-click a desired file.
The content of the selected file will be displayed on another window.

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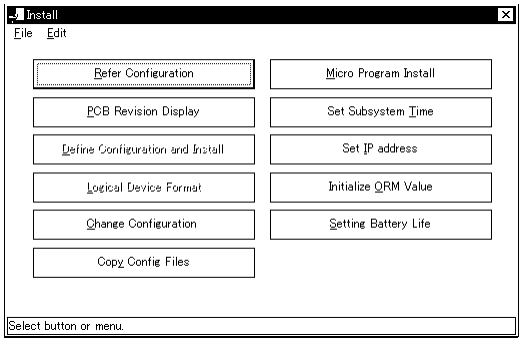
2 Function of the SVP

2.1 TOD (Time Or Date) setting

(1) Change the mode to [Modify Mode] from [View Mode] (CL).

(2) Select (CL) [Install].

(3) Select (CL) [Set Subsystem Time] in the 'Install' window.



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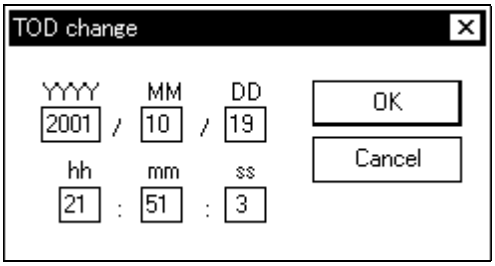
(4) Specify the date (year, month and day) and time (hour, minute and second) and select (CL) [OK].



(5) Close the 'Install' window.

Note: If you execute the performance measurement by Performance Monitor, don't push back the TOD.

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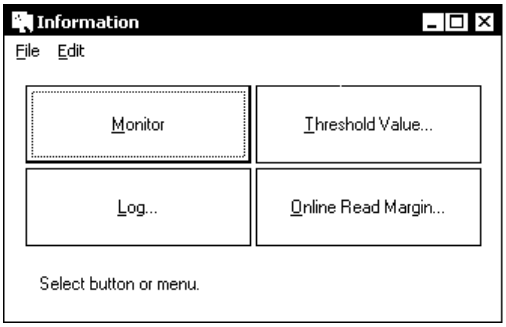
2.2 Log indication

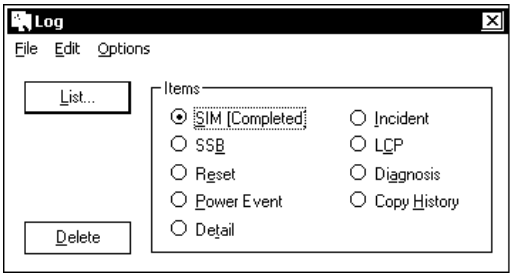
[1] SSB Log ---------- SVP02-40
[2] SIM Log ---------- SVP02-60
[3] Detail Log ---------- SVP02-80
[4] Reset Log ---------- SVP02-90
[5] Power Event Log ---------- SVP02-100
[6] Incident Log ---------- SVP02-110
[7] LCP Log ---------- SVP02-130
[8] Diagnosis Log ---------- SVP02-140
[9] Copy History Log ---------- SVP02-150
[10] MP# - Location correspondence table ---------- SVP02-160

Prerequisite Operation:
(1) Select (CL) [Information].

(2) Select (CL) [Log...].



(3) 'Log' dialog box is displayed.



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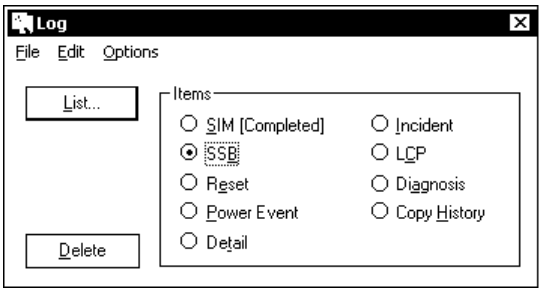
[1] SSB Log

(1) Select (CL) [SSB] in the 'Log'.
Select (CL) [List].



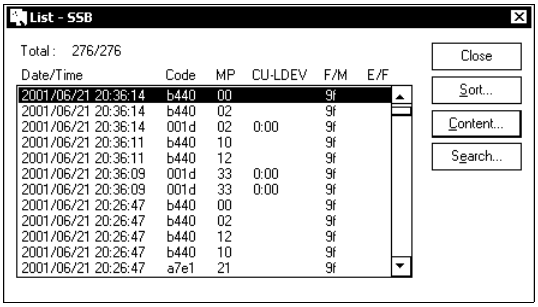
(2) Select (CL) data to be indicated in the 'List-SSB' dialog box and select (CL) [Content...].

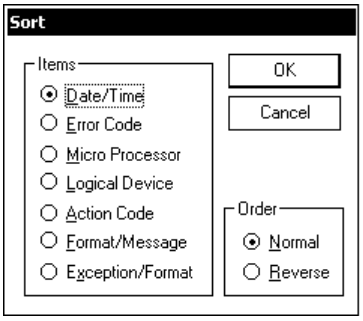
Note1: To sort and list items, select (CL) [Sort...] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].

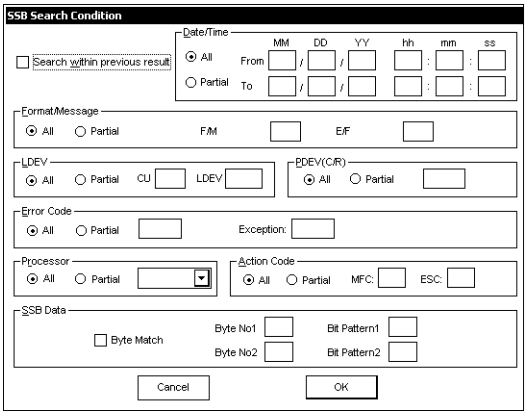
Note2: To search for the desired log, select (CL) [Search...]. Then set the log for which you want to search individual List in the 'SSB Search Condition' dialog box and select (CL) [OK].

Note3: In case of the log data exceeds 1000 cases (Denominator of the total displays 1000 or more), the log data can be displayed from new data to 1000 data out of the entry sequence on SVP.
The entry sequence sometimes differs from occurrence order of the log.
Perform search function in order to check occurrence order.

Note4: Please do not change an application's window until search function finish.







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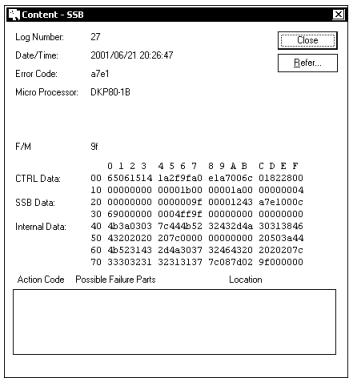
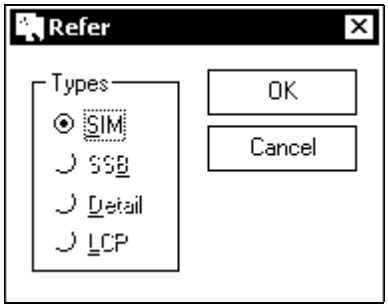
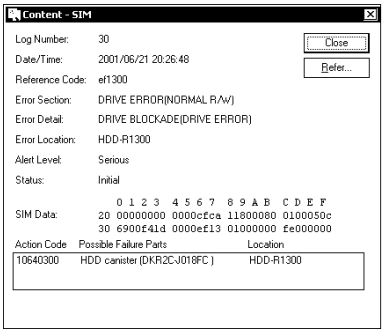
(3) The detailed data is displayed in the ‘Content-SSB’ dialog box.
Select (CL) [Refer...] in the ‘Content-SSB’ dialog box to display the relative log.



(4) Select (CL) the log to be displayed in the ‘Refer’ dialog box.
([SIM] is selected in this example.)



(5) Display the log to be selected.
(‘SIM Log’ is displayed in this example.)
See SIM LOG Section



(6) Close the relative log when it is referred to.
Select (CL) [Close] in the ‘Content-SSB’ dialog box.
Select (CL) [Close] in the ‘List-SSB’ dialog box.
Close the ‘Log’ dialog box and close the ‘Information’ window.

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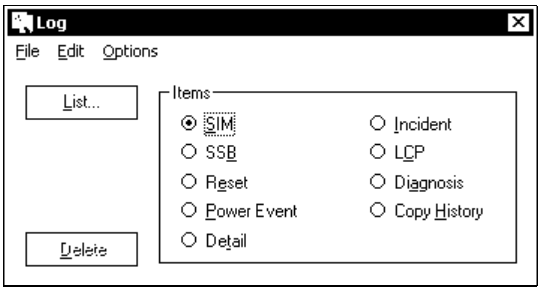
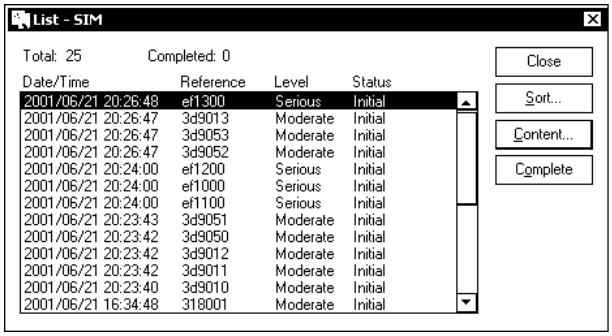
[2] SIM Log

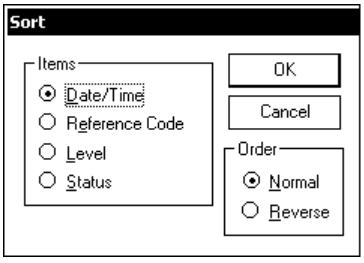
Note: When SIM log exists after SVP is started up, the 'SIM Message' window is displayed.

(1) Select (CL) [SIM] in the 'Log' dialog box.
Select (CL) [List...].



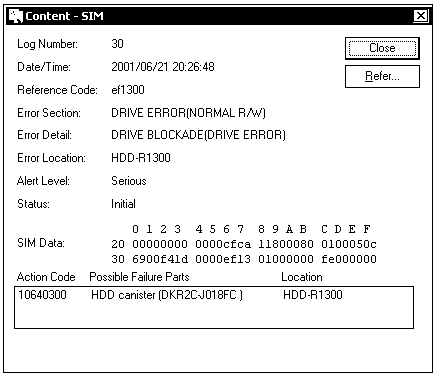
(2) Select (CL) data to be indicated in the 'List-SIM' dialog box and select (CL) [Content...].
Note: To sort and list items, select (CL) [Sort] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





(3) The 'Content-SIM' dialog box is displayed.
Select (CL) [Refer...] in the 'Content-SIM' dialog box, when the relative log is displayed.

Note1: In WCHK1 dump and ABEND dump received SIM (RC = 3080X0, 3081X0), the system error code is indicated in the format [YYYY] as in Reference Code 3080X0[YYYY].
Note2: If Reference Code is 73XX00 or 1400X0, perform the recovery procedure for LAN error. (see TRBL05-60.)



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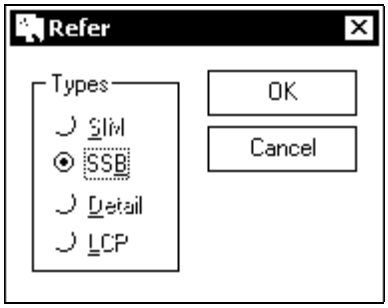
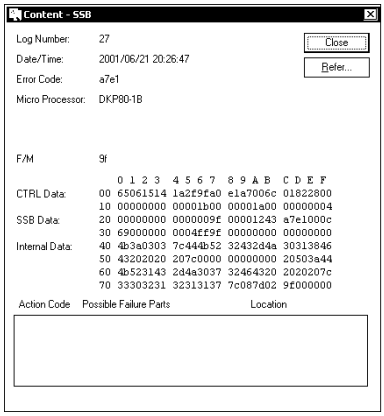
(4) Select (CL) the log to be displayed in the ‘Refer’ dialog box.
([SSB] is selected in this example.)



(5) The selected log is displayed.
(‘Content-SSB’ is displayed in this example.)



(6) Close the relative log when it is referred to.
Select (CL) [Close] in the ‘Content-SIM’ dialog box.
Select (CL) [Close] in the ‘List-SIM’ dialog box.
Close the ‘Log’ dialog box and close the ‘Information’ window.

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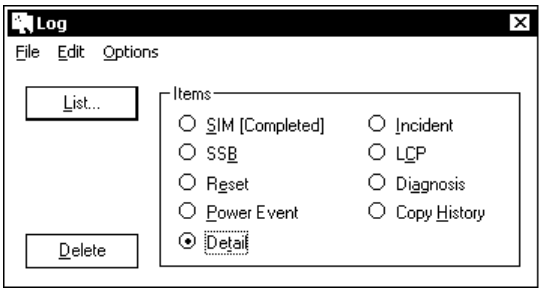
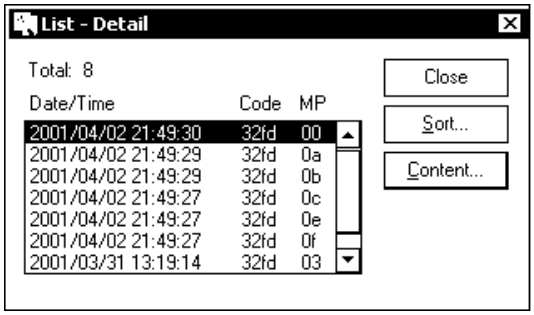
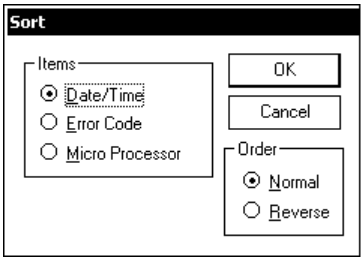
[3] Detail Log

(1) Select (CL) [Detail] in the 'Log' dialog box.
Select (CL) [List...].

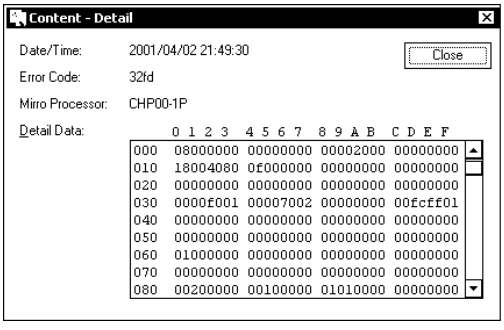


(2) Select (CL) data to be indicated in the 'List-Detail' dialog box and select (CL) [Content...].
Note: To sort and list items, select (CL) [Sort] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





(3) The 'Content - Detail' dialog box is displayed.



(4) Select (CL) [Close] in the 'Content - Detail' dialog box.
Select (CL) [Close] in the 'List-Detail' dialog box.
Close the 'Log' dialog box and close the 'Information' window.

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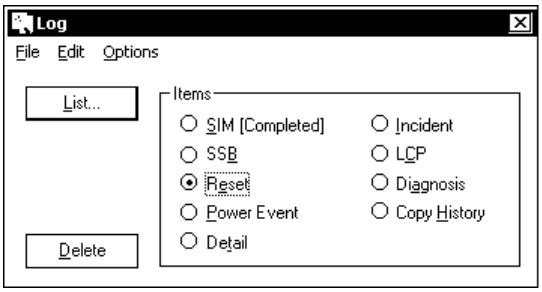
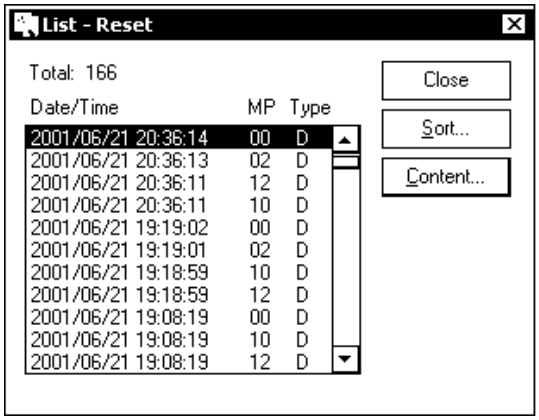
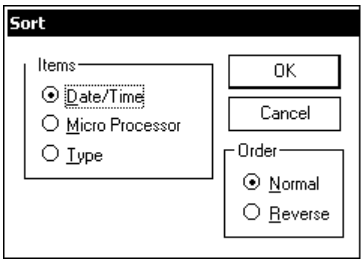
[4] Reset Log

(1) Select (CL) [Reset] in the 'Log' dialog box.
Select (CL) [List...].

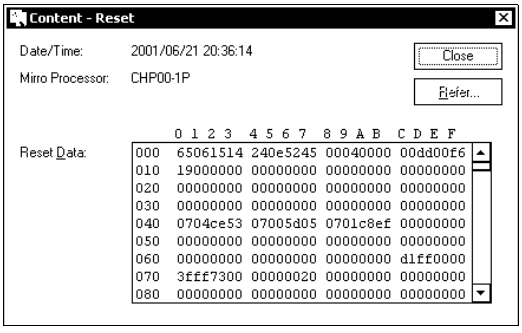


(2) Select (CL) data to be indicated in the 'List-Reset' dialog box and select (CL) [Content...].
Note: To sort and list items, select (CL) [Sort] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Reset Log Sort' dialog box, and select (CL) [OK].





(3) The 'Content-Reset' dialog box is displayed.



(4) Select (CL) [Close] in the 'Content-Reset' dialog box.
Select (CL) [Close] in the 'List-Reset' dialog box.
Close the 'Log' dialog box and close the 'Information' window.

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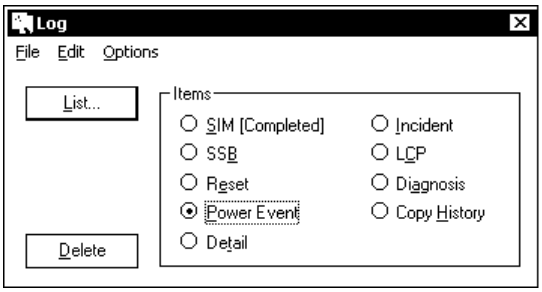
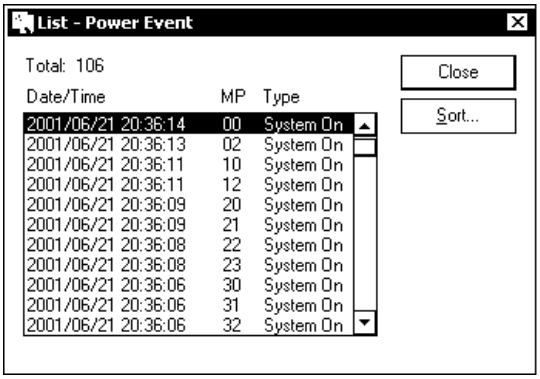
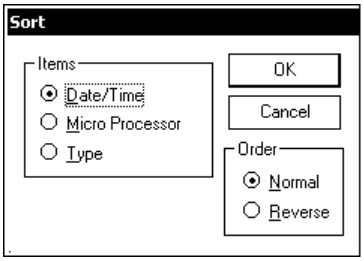
[5] Power Event Log

(1) Select (CL) [Power Event] in the 'Log' dialog box.
Select (CL) [List...].



(2) The 'List-Power Event' dialog box is displayed.
Note: To sort and list items, select (CL) [Sort] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





(3) Select (CL) [Close] in the 'List-Power Event' dialog box.
Close the 'Log' dialog box and close the 'Information' window.

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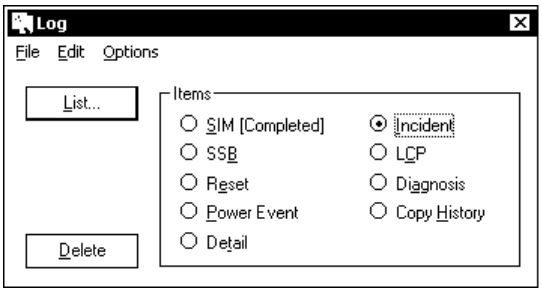
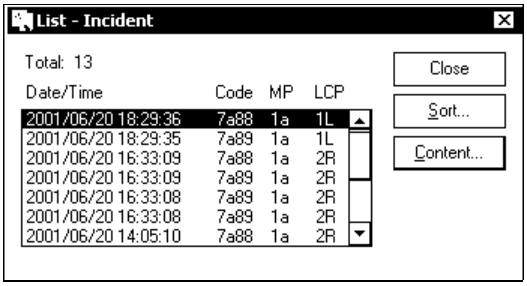
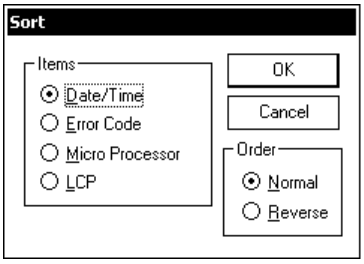
[6] Incident Log

(1) Select (CL) [Incident] in the 'Log' dialog box.
Select (CL) [List...].

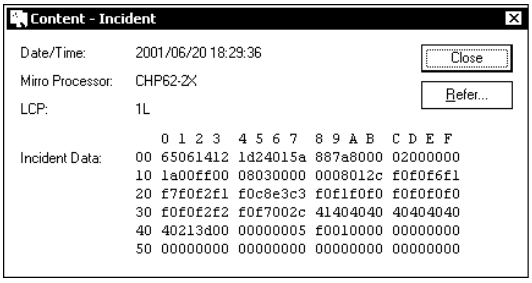


(2) Select (CL) data to be indicated in the 'List-Incident' dialog box and select (CL) [Content...].
Note: To sort and list items, select (CL) [Sort] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





(3) The 'Content-Incident' dialog box is displayed.



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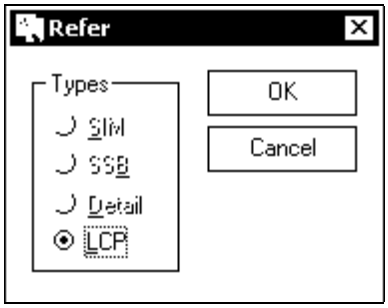
(4) To display the relative log, select (CL) [Refer...] in the 'Content-Incident' dialog box.
Select (CL) the log type to be displayed in the 'Refer' dialog box and then select (CL) [OK].



(5) Select (CL) [Close] in the 'Content-Incident' dialog box.
Select (CL) [Close] in the 'List-Incident' dialog box.
Close the 'Log' dialog box and close the 'Information' window.

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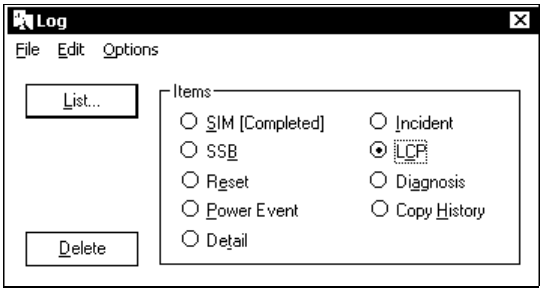
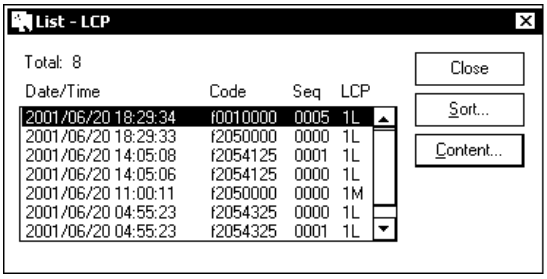
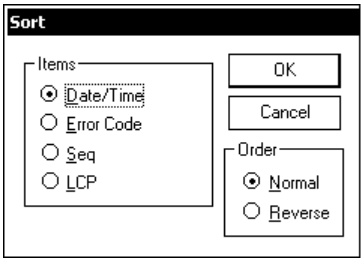
[7] LCP Log

(1) Select (CL) [LCP] in the 'Log' dialog box.
Select (CL) [List...].

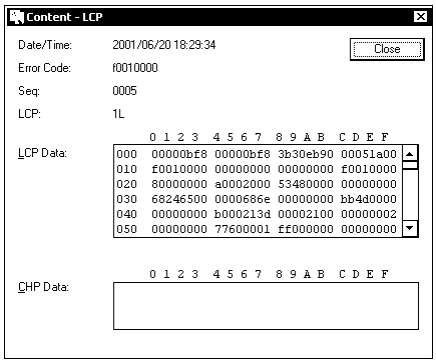


(2) Select (CL) data to be indicated in the 'List-LCP' dialog box and select (CL) [Content...].
Note: To sort and list items, select (CL) [Sort] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





(3) The 'Content-LCP' dialog box is displayed.



(4) Select (CL) [Close] in the 'Content-LCP' dialog box.
Select (CL) [Close] in the 'List-LCP' dialog box.
Close the 'Log' dialog box and close the 'Information' window.

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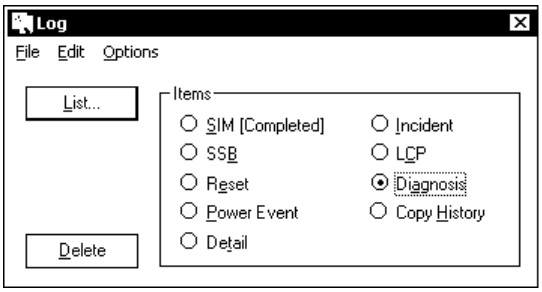
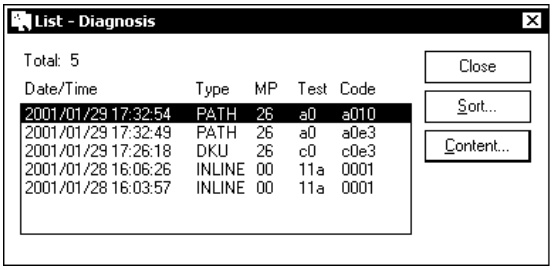
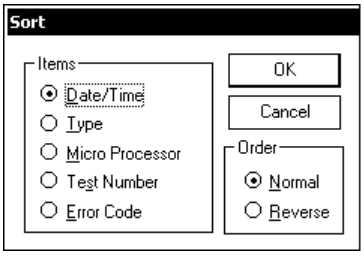
[8] Diagnosis Log

(1) Select (CL) [Diagnosis] in the 'Log' dialog box.
Select (CL) [List...].

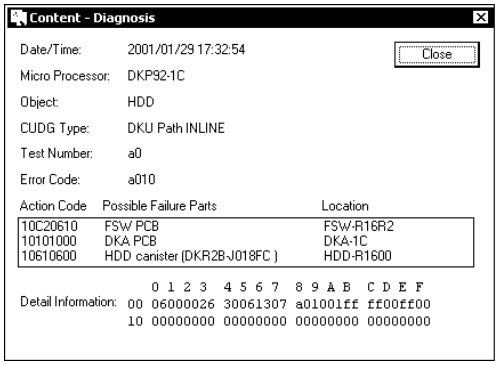


(2) Select (CL) data to be indicated in the 'List-Diagnosis' dialog box and select (CL) [Content...].
Note: To sort and list items, select (CL) [Sort] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





(3) The 'Content-Diagnosis' dialog box is displayed.



(4) Select (CL) [Close] in the 'Content-Diagnosis' dialog box.
Select (CL) [Close] in the 'List-Diagnosis' dialog box.
Close the 'Log' dialog box and close the 'Information' window.

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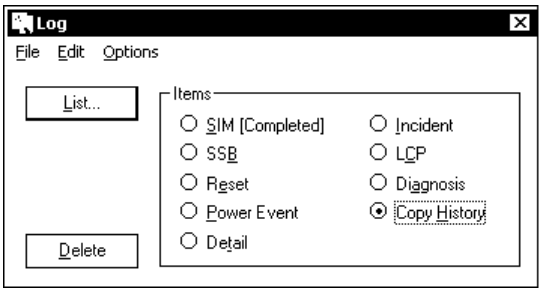
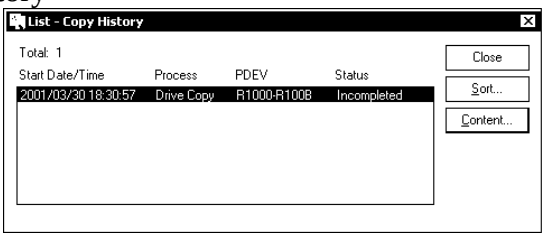
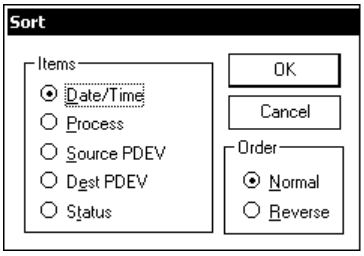
[9] Copy History Log

(1) Select (CL) [Copy history] in the 'Log' dialog box.
Select (CL) [List...].

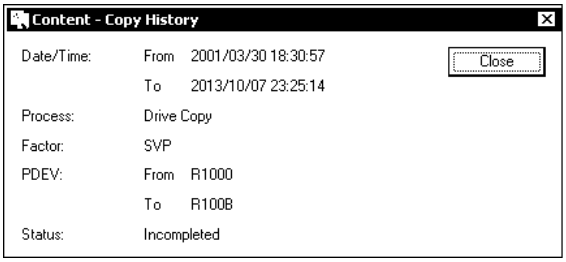


(2) Select (CL) data to be indicated in the 'List-Copy history' dialog box and select (CL) [Content...].
Note:To sort and list items, select (CL) [Sort] first.
Then select (CL) the desired item in the [Items] and [Order] options in the 'Sort' dialog box, and select (CL) [OK].





(3) The 'Content-Copy History' dialog box is displayed.



(4) Select (CL) [Close] in the 'Content-Copy History' dialog box.
Select (CL) [Close] in the 'List- Copy History' dialog box.
Close the 'Log' dialog box and close the 'Information' window.

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[10] MP# - Location correspondence table

Multi Cabinet Model

Location				MP#	Location				MP#
CHA	Cluster1	CHA-1P	CHP00-1P	00	DKA	Cluster1	DKA-1B	DKP80-1B	20
			CHP01-1P	01				DKP81-1B	21
			CHP02-1P	02				DKP82-1B	22
			CHP03-1P	03				DKP83-1B	23
		CHA-1Q	CHP10-1Q	04			DKA-1C	DKP90-1C	24
			CHP11-1Q	05				DKP91-1C	25
			CHP12-1Q	06				DKP92-1C	26
			CHP13-1Q	07				DKP93-1C	27
		CHA-1R	CHP20-1R	08			DKA-1D	DKPA0-1D	28
			CHP21-1R	09				DKPA1-1D	29
			CHP22-1R	0a				DKPA2-1D	2a
			CHP23-1R	0b				DKPA3-1D	2b
		CHA-1S	CHP30-1S	0c			DKA-1E	DKPB0-1E	2c
			CHP31-1S	0d				DKPB1-1E	2d
			CHP32-1S	0e				DKPB2-1E	2e
			CHP33-1S	0f				DKPB3-1E	2f
	Cluster2	CHA-2V	CHP40-2V	10		Cluster2	DKA-2H	DKPC0-2H	30
			CHP41-2V	11				DKPC1-2H	31
			CHP42-2V	12				DKPC2-2H	32
			CHP43-2V	13				DKPC3-2H	33
		CHA-2W	CHP50-2W	14			DKA-2J	DKPD0-2J	34
			CHP51-2W	15				DKPD1-2J	35
			CHP52-2W	16				DKPD2-2J	36
			CHP53-2W	17				DKPD3-2J	37
		CHA-2X	CHP60-2X	18			DKA-2K	DKPE0-2K	38
			CHP61-2X	19				DKPE1-2K	39
			CHP62-2X	1a				DKPE2-2K	3a
			CHP63-2X	1b				DKPE3-2K	3b
		CHA-2Y	CHP70-2Y	1c			DKA-2L	DKPF0-2L	3c
			CHP71-2Y	1d				DKPF1-2L	3d
			CHP72-2Y	1e				DKPF2-2L	3e
			CHP73-2Y	1f				DKPF3-2L	3f

Single Cabinet Model

Location				MP#	Location				MP#
CHA	Cluster1	CHA-1C	CHP00-1C	00	DKA	Cluster1	DKA-1B	DKA80-1B	20
			CHP01-1C	01				DKA81-1B	21
			CHP02-1C	02				DKA82-1B	22
			CHP03-1C	03				DKA83-1B	23
		CHA-1D	CHP10-1D	04			DKA-1F	DKA90-1F	24
			CHP11-1D	05				DKA91-1F	25
			CHP12-1D	06				DKA92-1F	26
			CHP13-1D	07				DKA93-1F	27
		CHA-1F	CHP20-1F	08		Cluster2	DKA-2L	DKPC0-2L	30
			CHP21-1F	09				DKPC1-2L	31
			CHP22-1F	0a				DKPC2-2L	32
			CHP23-1F	0b				DKPC3-2L	33
	Cluster2	CHA-2G	CHP40-2G	10			DKA-2K	DKPD0-2K	34
			CHP41-2G	11				DKPD1-2K	35
			CHP42-2G	12				DKPD2-2K	36
			CHP43-2G	13				DKPD3-2K	37
		CHA-2J	CHP50-2J	14					
			CHP51-2J	15					
			CHP52-2J	16					
			CHP53-2J	17					
		CHA-2K	CHP60-2K	18					
			CHP61-2K	19					
			CHP62-2K	1a					
			CHP63-2K	1b					

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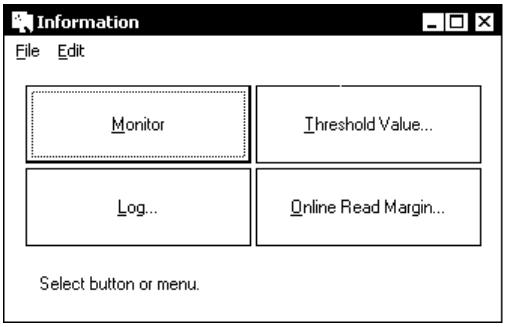
2.3 Log delete

[1] SSB Log
[2] SIM Log
[3] Detail Log
[4] Reset Log
[5] Power Event Log
[6] Incident Log
[7] LCP/MCP Log
[8] Diagnosis Log
[9] Copy History Log

(1) Select (CL) [Information] in 'SVP' window.

(2) Select (CL) [Log] in the 'Information' dialog box.



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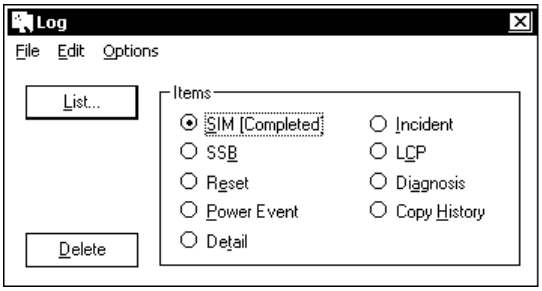
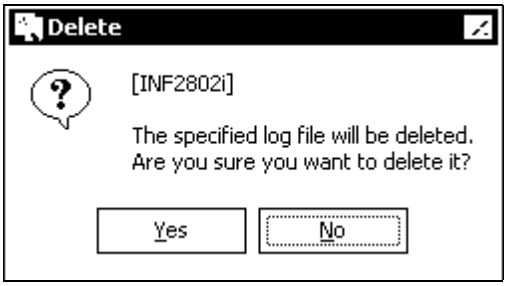
(3) In the Log dialog box, select (CL) an item to be deleted.
Select (CL) [Delete].



(4) Select (CL) [Yes] in the 'Delete' dialog box.



(5) Close the 'Log' dialog box and close the 'Information' window.

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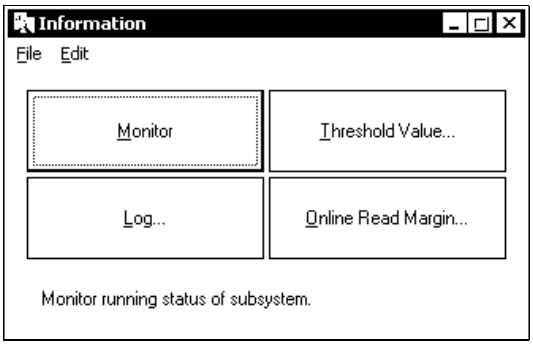
2.4 Monitoring

[1] Displaying a graph for items ---------- SVP02-200
[2] Displaying the operation ratio of the processor ---------- SVP02-220
[3] Displaying the use ratio of the cache and the write pending data ratio in a tabular form
---------- SVP02-240
[4] Displaying the read hit ratio in a tabular form ---------- SVP02-250
[5] Displaying the use ratio of the Access Path in a tabular form ---------- SVP02-260

Prerequisite Operation
(1) Select (CL) [Information] in the 'SVP' window.

(2) Select (CL) [Monitor] in the 'Information' window



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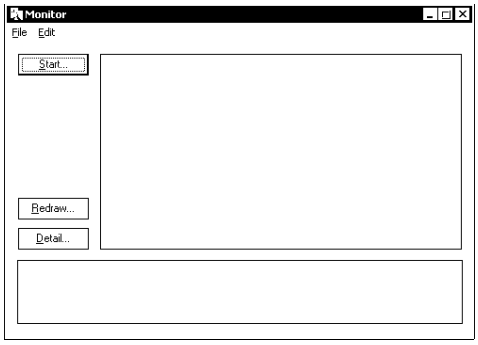
[1] Displaying a graph for items

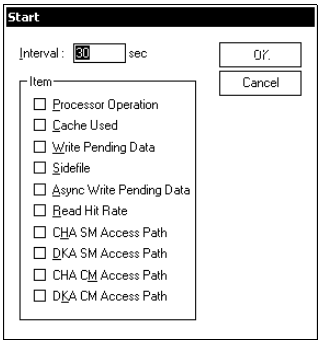
(1) Select (CL) [Start...].



(2) Select (CL) [Interval] , [File Output] , and [Item] in the 'Monitoring' dialog box and select (CL) [OK].

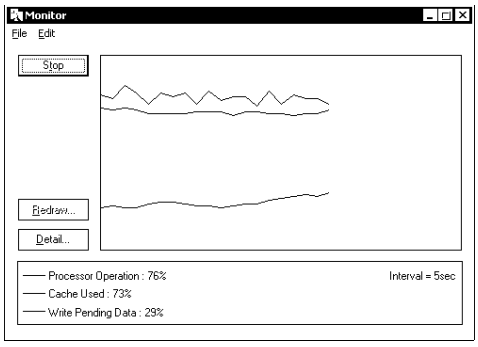
Note 1 : "Interval" indicates a time interval from 5 to3600 at which samples are taken.

Note 2 : Up to three items can be selected in the "Item" list box. The selectable values are:



Processor Operation	: Operation ratio of the processor
Cache Used	: Use ratio of the cache
Write Pending Data	: Write pending data ratio
Sidefile	: Sidefile ratio of the subsystem
Async Write Pending Data	: Async write pending data ratio
Read Hit Rate	: Read hit ratio of the subsystem
CHA SM Access Path	: Use ratio of the CHA - SM Access Path.
DKA SM Access Path	: Use ratio of the DKA - SM Access Path.
CHA CM Access Path	: Use ratio of the CHA - CM Access Path.
DKA CM Access Path	: Use ratio of the DKA - CM Access Path.

(3) After a few minutes, a graph is displayed for the item selected in step (2).



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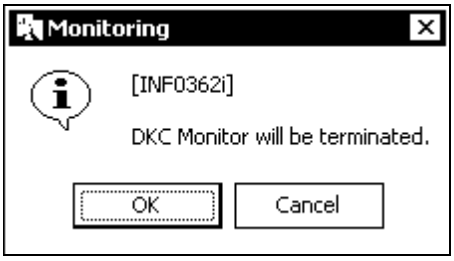
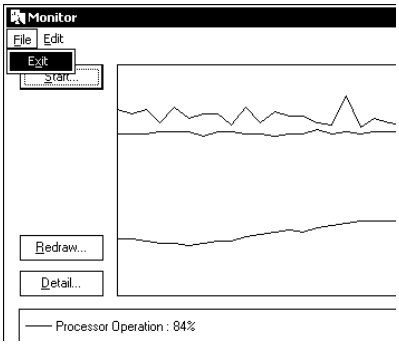
(4) When [Stop] is selected (CL) during the display of the graph, displaying is interrupted.
If [OK] is selected (CL) in the 'Monitoring' dialog box, displaying is stopped.



(5) Select (CL) the [File] menu in the 'Monitor' dialog box and select (DR) [Exit].



(6) Close the 'Monitor' dialog box and close the 'Information' window.

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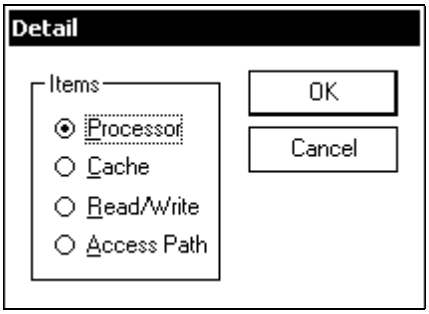
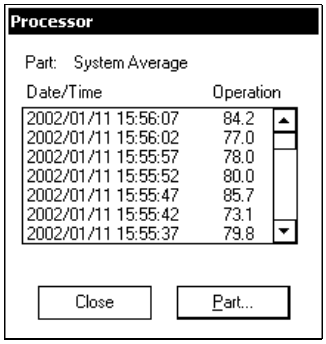
[2] Displaying the operation ratio of the processor



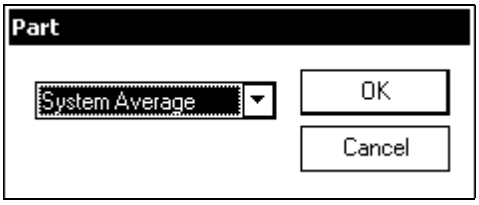
(1) Display a graph (see steps listed above).
Select (CL) [Processor Operation] in the "Item" list box.

If [Detail...] is selected (CL) in 'Monitor', 'Detail' will be displayed select (CL). [[Processor...] in 'Detail' and select (CL) [OK].

(2) Select (CL) [Part...] in the 'Processor' dialog box.



(3) Select (DR) the contents of "Parts" in the 'Part' dialog box and select (CL) [OK].
Note: In the Parts list box, the following values are selectable.



System Average : Average in the system
CHP[CHT] Average : Average for the CHP[CHT]
CHP[CHA] Average : Average for the CHP[CHA]
DKP[DKF] Average : Average for the DKP
CHP00-1P : Average for a particular processor

-
-
-

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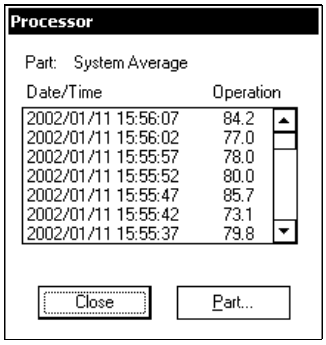
(4) Select (CL) [Close] in the 'Processor' dialog box.



(5) Close the 'Monitor' dialog box and close the 'Information' window.

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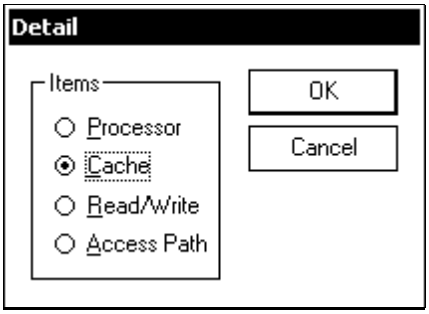
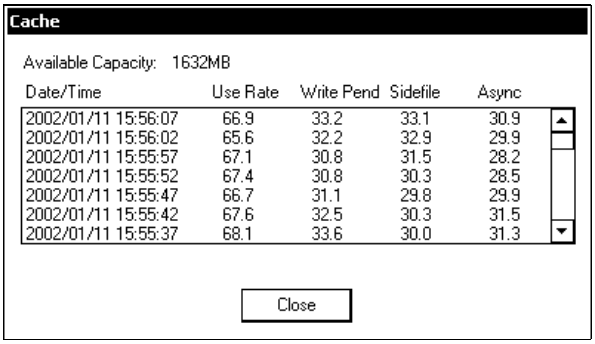
[3] Displaying the use ratio of the cache and the write pending data ratio in a tabular form.

(1) Display a graph (see section [1] (SVP02-200) above).
Select (CL) [Write Pending Data], [Cache Used] or [Sidefile] in the “Item” list box.
Select (CL) [Detail...] in the ‘Monitor’. Select (CL) [Cache] in the ‘Detail’ and select (CL) [OK].



(2) Select (CL) [Close] in the ‘Cache’ dialog box.



(3) Close the ‘Monitor’ dialog box and close the ‘Information’ window.

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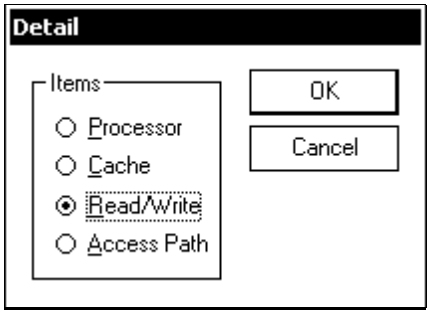
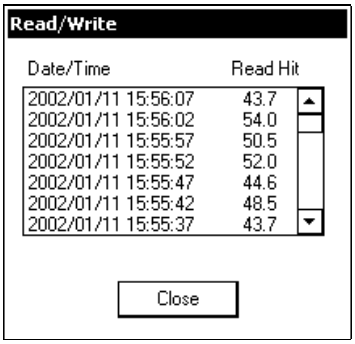
[4] Displaying the read hit ratio in a tabular form

(1) Display a graph by executing steps (1) to (3) in "[1] Displaying a graph for items" in advance.
In step (2), select (CL) [Read Hit Rate] in the "Item" list box.
Select (CL) [Detail...] in the 'Monitor'. Select (CL) [Read/Write] in the 'Detail' and select (CL) [OK].



(2) Select (CL) [Close] in the 'Read/Write' dialog box.



(3) Close the 'Monitor' window and close the 'Information' window.

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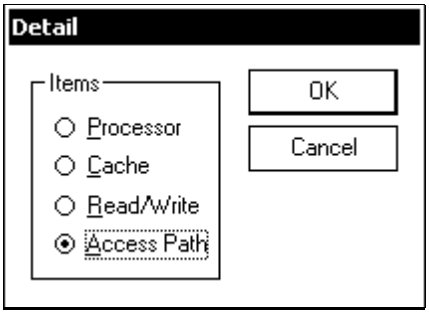
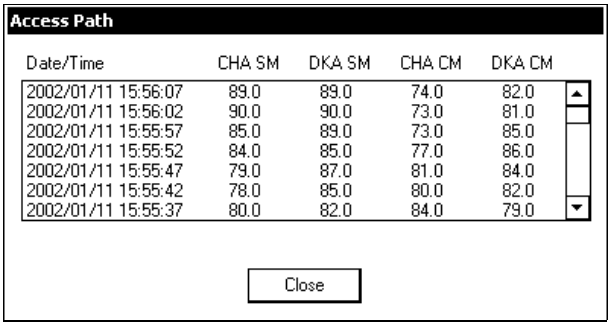
[5] Displaying the use ratio of the Access Path in a tabular form

(1) Display a graph by executing steps (1) to (3) in "[1] Displaying a graph for items" in advance. Select (CL) [Detail...] in the 'Monitor'. Select (CL) [Access Path] in the 'Detail' and select (CL) [OK].



(2) Select (CL) [OK] in the 'Access Path' dialog box.



(3) Close the 'Monitor' window and close the 'Information' window.

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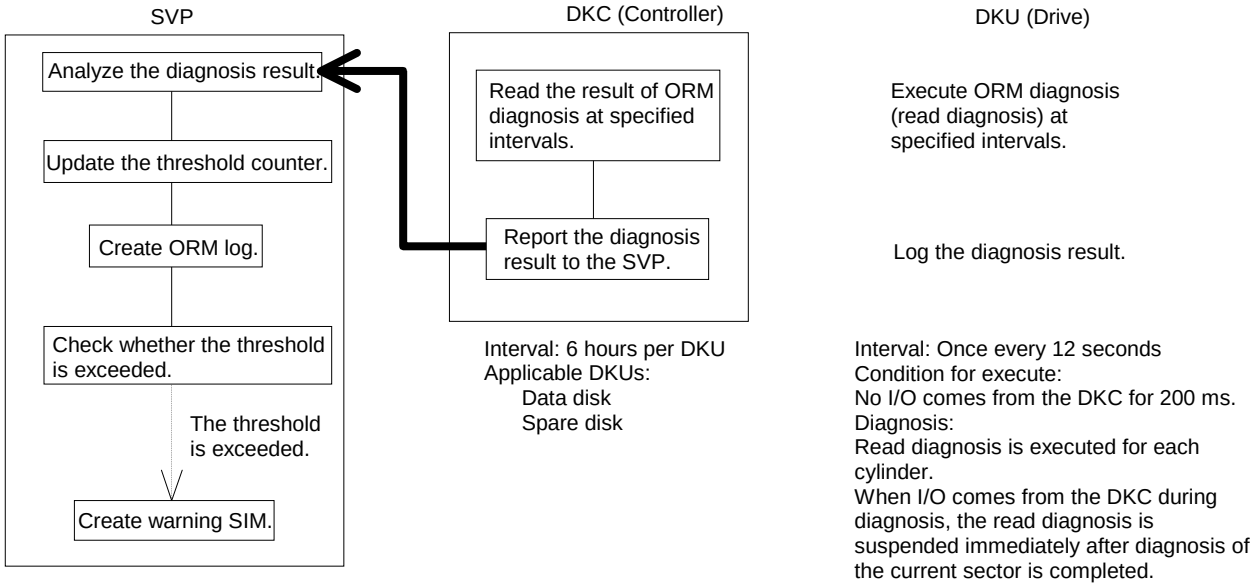
2.5 Online read margin (ORM)

[Overview]
The on-line read margin test (ORM) function is a read diagnostic function provided for preventive maintenance of disk drives. The diagnostic is automatically executed in each drive. The DKC reads the diagnostic result at specified intervals and reports it to the SVP.
The SVP calculates the error ratio to the threshold value which is set in advance, and indicates it in the OVER RATE Display (see [1], (2)). When the Rate in the display exceeds 100%, it means the error count is exceeding the threshold, the SVP creates the warning SIM. It is, however, not reported to the Host. The disk drive reporting the SIM should be exchanged with higher priority than other normal drives.



The SVP classifies the errors into six types in the Over Rate Counter Display. They are Unrecovered Read Error, Recovered Read Error, Unrecovered Seek error, Recovered Seek Error, Not Ready and Other Errors. Each has three types of counters indicated as Today, 7 days and Total. Refer to [1], (4) for the Over Rate Counter Display. In the Over Rate Counter Display, the error ratio which has the largest number among those classified types is displayed for each drive to represent each error.

The warning SIMs to be reported in the ORM are shown below.

ORM SIM and Reference Code

No	Error Type	Reference Code	Meaning
1	Unrecovered Read Error	503X (X = 0 ~ F)	Drive Media Error
2	Recovered Read Error		
3	Unrecovered Seek Error	502X (X = 0 ~ F)	Drive Unit Error
4	Recovered Seek Error		
5	Not Ready		
6	Other Errors		

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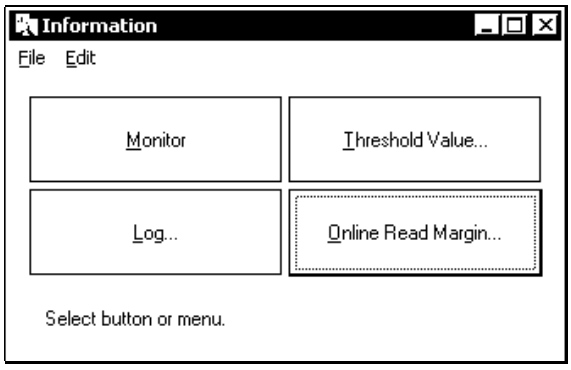
[1] Displaying an error count, thresholds, and log ---------- SVP02-290
[2] Resetting an error count ---------- SVP02-340
[3] Displaying thresholds ---------- SVP02-370
[4] Altering a threshold ---------- SVP02-390
[5] Displaying the ORM running status ---------- SVP02-410
[6] Resetting thresholds ---------- SVP02-420

(1) Check SVP Mode.
Following operations need SVP Mode to be 'Modify Mode'. (See SVP01-80)
[2] Resetting an error count
[4] Altering a threshold
[6] Resetting thresholds

(2) Select (CL) the [Information] in the 'SVP' window.

(3) Select (CL) [Online Read Margin...] in the 'Information' window.



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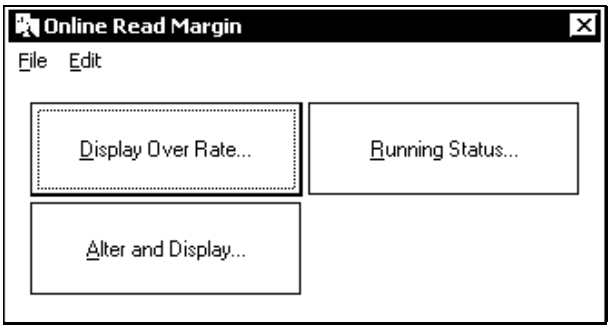
[1] Displaying an error count, thresholds, and log

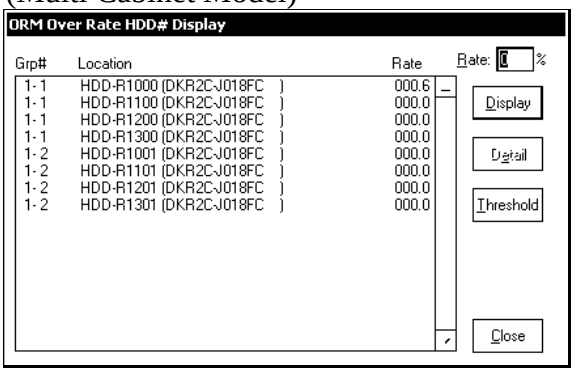
(1) Select (CL) [Display Over Rate...] in the 'Online Read margin' window.



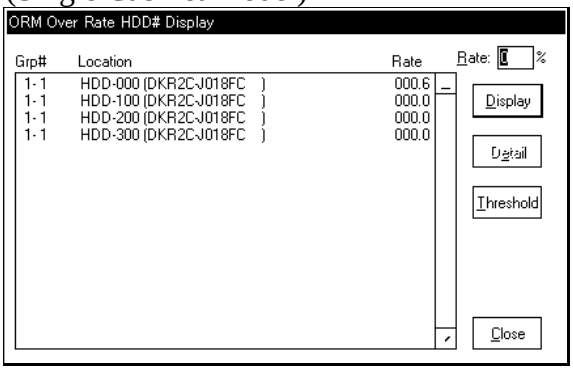
(2) Enter a number from 0 to 100 at "Rate" in the 'ORM Over Rate HDD# Display' dialog box. Select (CL) [Display].
Then only the HDDs which have the rate of equal to or greater than the input number at "Rate" will appear in the display.

Rate : ratio of the number of errors for the threshold value.
Grp# : the parity group.
SPARE : spare HDD
RSRVD : reserved HDD with sparing
* : spare HDD in use.

(Multi Cabinet Model)



(Single Cabinet Model)



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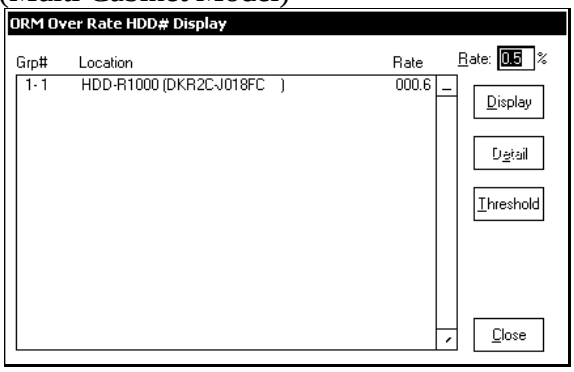
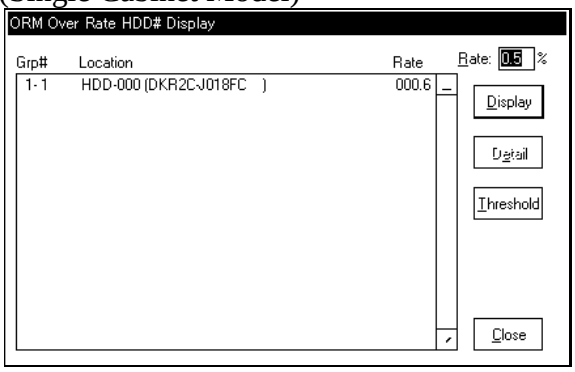
(3) When more detailed information is needed for the particular drive, select (CL) the HDD from the “HDD Location” list box.
Select (CL) [Detail].

(Multi Cabinet Model)

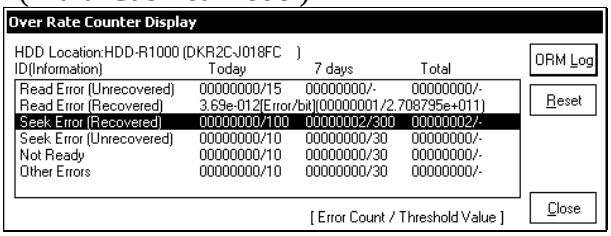


(Single Cabinet Model)

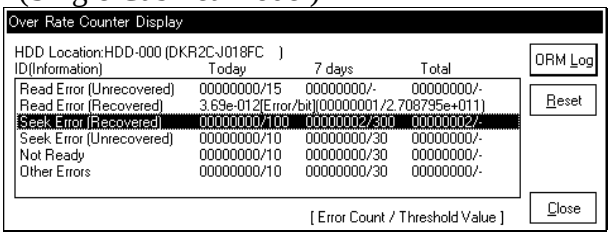


(4) In the ‘Over Rate Counter Display’ dialog box, select (CL) the error for which detailed log is to be displayed from the “ID” list box. Select (CL) [ORM LOG].

(Multi Cabinet Model)



(Single Cabinet Model)



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The errors detected in the ORM are classified into six types of error category. Each error has the following definition.

(a) Read Error [Unrecovered]
A disk media error was detected. After ten times retries, the error was judged that it might become a serious media error which could not be recovered with ECC or retries.

(b) Read Error [Recovered]
A disk media error was detected. After ten times retries, the error was judged that it was an intermittent read error and recoverable, and included in the error rate management for the preventive maintenance.

(c) Seek Error [Recovered]
A seek error was detected. After ten times retries, the error was judged to be recoverable.

(d) Seek Error [Unrecovered]
A seek error was detected. After ten times retries, the error was judged to be unrecoverable.

(e) Not Ready
Not Ready status of the drive was detected.

(f) Other Errors
Any error which does not belong to the above classification was detected.

They are also managed with different time periods. "Today" is for one day count and cleared at AM 0:00 every day. "7 days" is for the cumulative value in the latest 7 days. "Total" shows the total cumulative count.

In this Over Rate Counter Display, each error category indicates the Error Count and the Threshold value except for the Read Error [Recovered]. The "-" for the Threshold value means no threshold is set.

Only the Read Error [Recovered] has an error rate expression. It is not managed with error count per day, per 7 days or Total. The error rate of the Read Error [Recovered] is calculated in the following formula:

Error rate = Number of error sectors/Number of ORM scan bits

Note: Only the result from approximately the latest one volume scan in ORM is used for the calculation.

In the example display, "4.13e-011" means the error rate is "4.13×10^{-11}". This is corresponding to the raw error count and scan bits shown as "00000001/2.422270e+010", where the error count is one sector and the scan bits is 2.422270×10^{10}.

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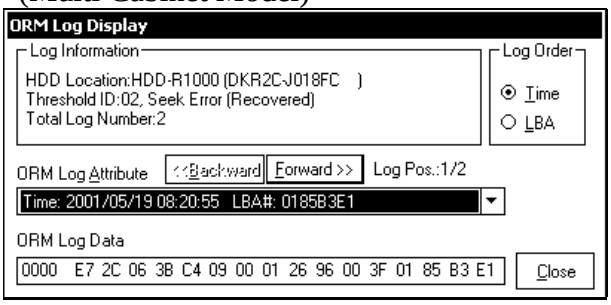
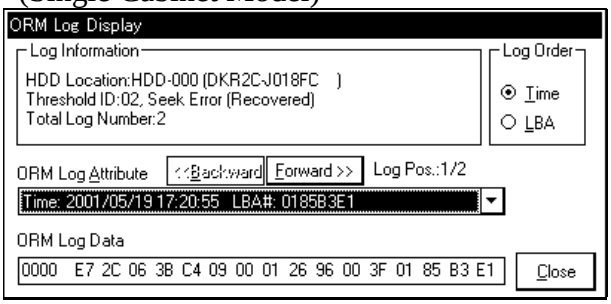
(5) The nature of the error selected in step (4) is displayed.

(Multi Cabinet Model)



(Single Cabinet Model)



Byte	Bit	Name	Explanation
0 - 3		UCT	Time when the diagnostic result was reported from the DKC to the SVP
4	7	Log Valid	When this bit is 1, it indicates that this log is valid.
	6	Address Valid	When this bit is 1, it indicates that the address information in bytes 8 to F is valid
	5 - 4	(Reserved)	Reserved
	3 - 0	Sense Key	Error sense key in the SCSI drive report. (*1)
5		Additional Sense Code	Additional sense code in the SCSI drive report .(*1)
6		Sense Code Qualifier	Additional sense code qualifier in the SCSI drive report. (*1)
7		Seek Error Count	Number of seek errors within 10 seek error retries.
8 - 9		CC	Address of the cylinder where the error occurred.
A		H	Address of the head where the error occurred.
B		S	Address of the sector where the error occurred.
C - F		LBA	LBA where the error occurred.

*1: Definition and contents of the error codes are same as those of the SSB for ordinary DKU errors.

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(6) Select (CL) [Close] in the ‘ORM Log Display’ dialog box.

(7) Select (CL) [Close] in the ‘Over Rate Counter Display’ dialog box.

(8) Select (CL) [Close] in the ‘ORM Over Rate HDD# Display’ dialog box.

(9) Close the ‘Information’ window.

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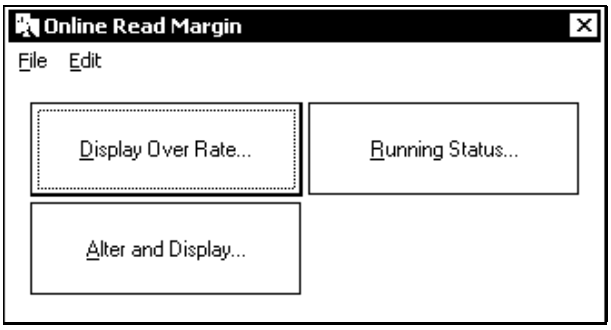
[2] Resetting an error count

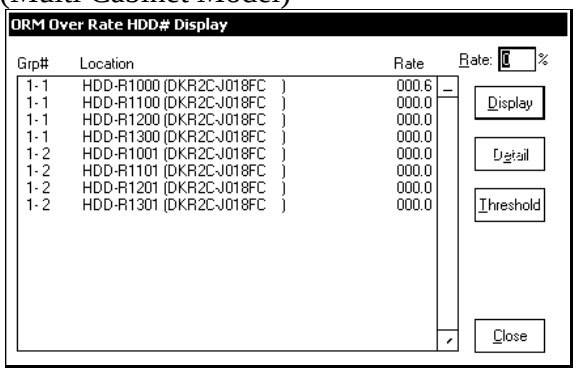
(1) Select (CL) [Display Over Rate...] in the 'Online Read Margin' window.



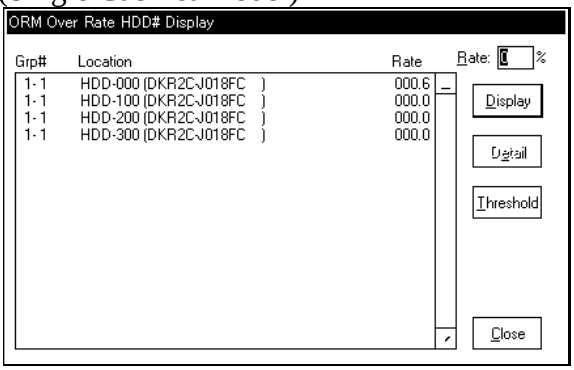
(2) Enter a number from 0 to 100 at 'Rate' in the 'ORM Over Rate HDD# Display' dialog box. Select (CL) [Display].
Then only the HDDs which have the rate of equal to or greater than the input number at "Rate" will appear in the display.

Rate : ratio of the number of errors for the threshold value.
Grp# : the parity group.
SPARE : spare HDD
RSRVD : reserved HDD with sparing
* : spare HDD in use.

(Multi Cabinet Model)



(Single Cabinet Model)



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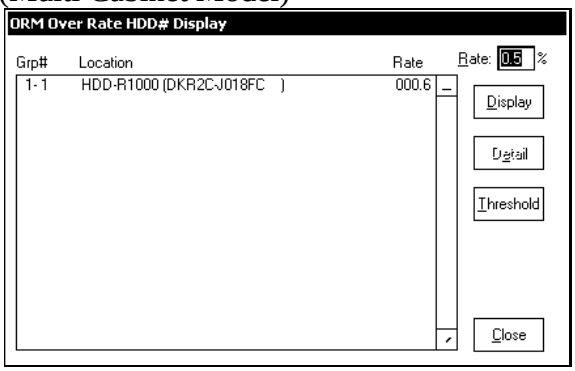
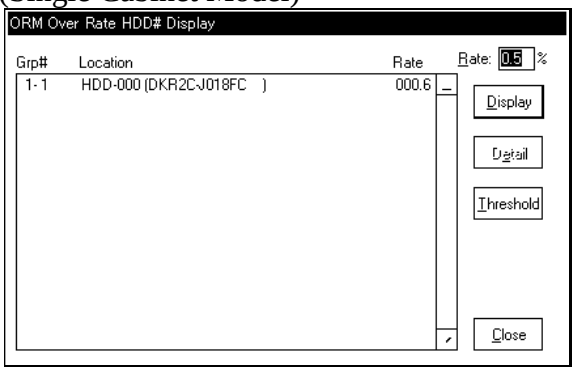
(3) In the 'ORM Over Rate HDD# Display' dialog box, select (CL) the HDD for which an error count and thresholds are to be reset from the "HDD Location" list box. Select (CL) [Detail].

(Multi Cabinet Model)

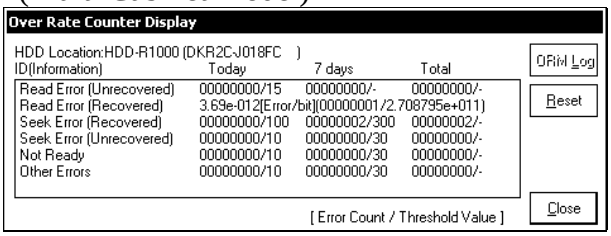


(Single Cabinet Model)

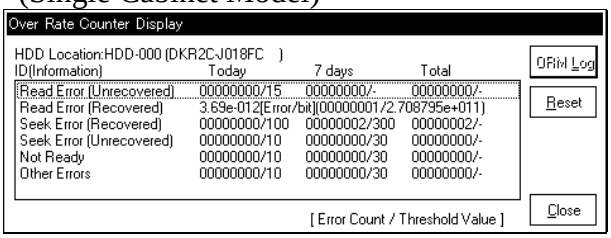


(4) In the 'Over Rate Counter Display' dialog box, select (CL) [Reset] button.

(Multi Cabinet Model)



(Single Cabinet Model)



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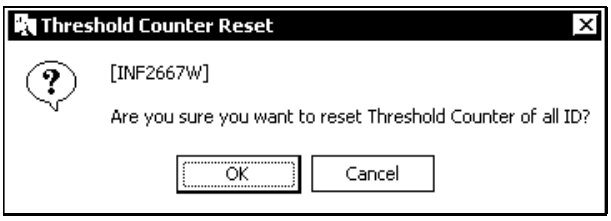
(5) Select (CL) [OK] in the 'Threshold Counter Reset' dialog box.



(6) Select (CL) [Close] in the 'Over Rate Counter Display' dialog box.

(7) Select (CL) [Close] in the 'ORM Over Rate HDD# Display' dialog box.

(8) Close the 'Information' window.

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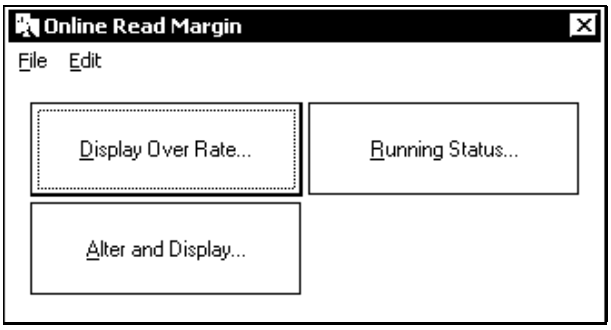
[3] Displaying thresholds

(1) Select (CL) [Alter and Display] in the 'Online Read Margin' window.

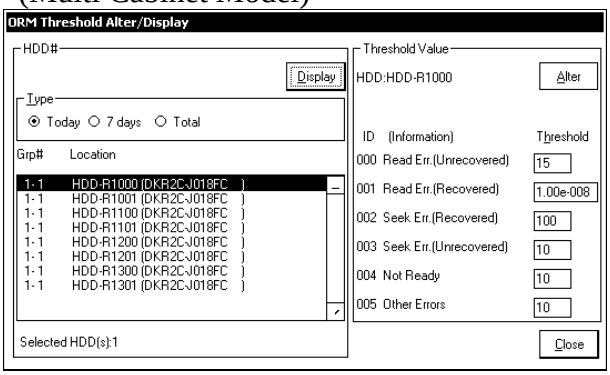


(2) In the 'ORM Threshold Alter/Display' dialog box, select (CL) an HDD from the "HDD#" list box and select (CL) [Display]. In order to display threshold of another interval, select (CL) the interval from the "Type" list box.

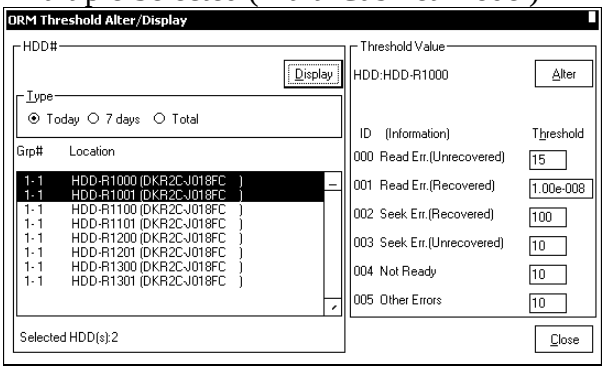
Note: Multiple HDDs can be selected (CL) from the "HDD#" list box while the control key is being held down. In this case, each "Threshold" field in the "Threshold Value" list box shows the threshold for the HDD that is highlighted in the "HDD#" list box.

Grp# : the parity group.
SPARE : spare HDD
RSRVD : reserved HDD with sparing
* : spare HDD in use.

(Multi Cabinet Model)



Multiple Selected (Multi Cabinet Model)



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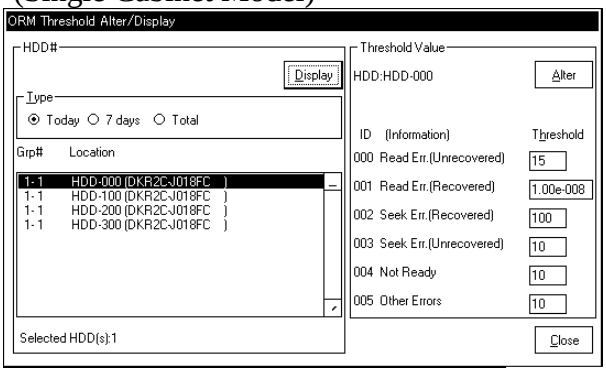
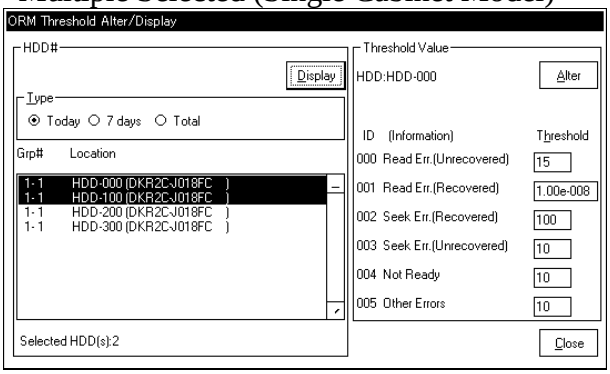
(Single Cabinet Model)



Multiple Selected (Single Cabinet Model)



(3) Select (CL) [Close] in the ‘ORM Threshold Alter/Display’ dialog box and close the ‘Information’ window.

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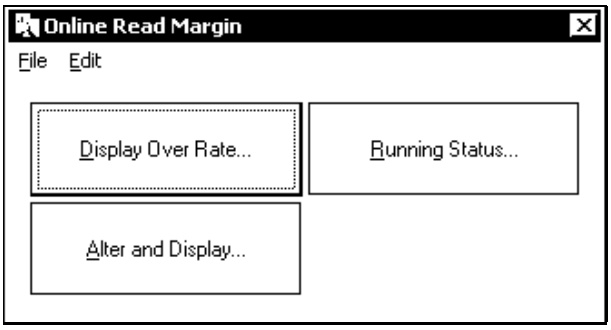
[4] Altering a threshold

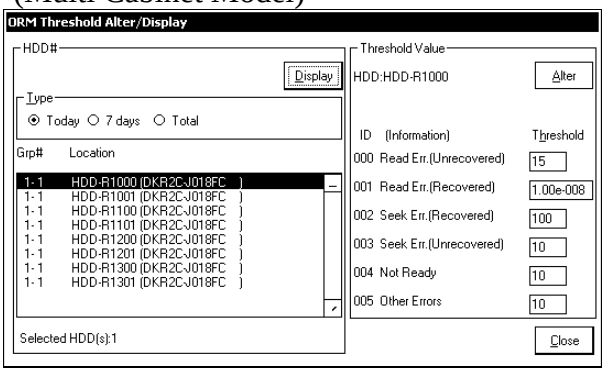
(1) Select (CL) [Alter and Display...] in the 'Online Read Margin' window.



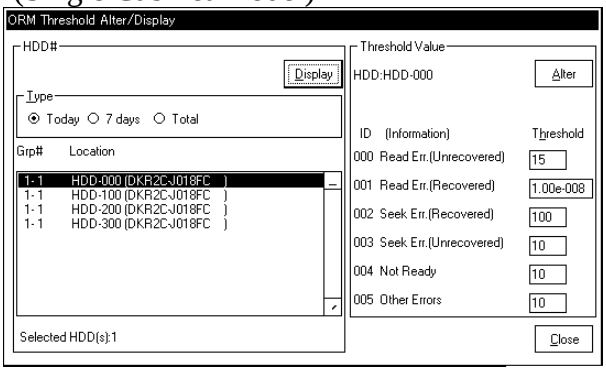
(2) In the 'ORM Threshold Alter/Display' dialog box, select (CL) an HDD from the "HDD#" list box and select (CL) [Display]. In order to display threshold of another interval, select (CL) the interval from the "Type" list box.

Grp# : the parity group.
SPARE : spare HDD
RSRVD : reserved HDD with sparing
* : spare HDD in use.

(Multi Cabinet Model)



(Single Cabinet Model)



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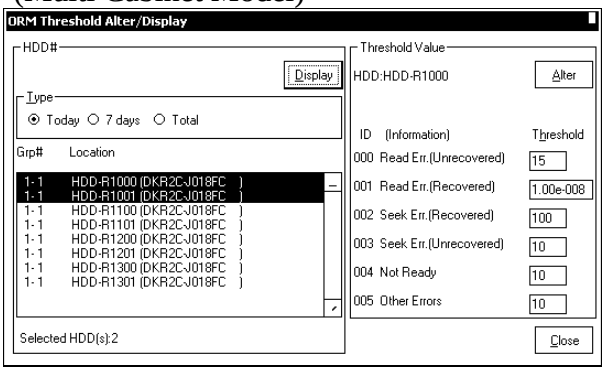
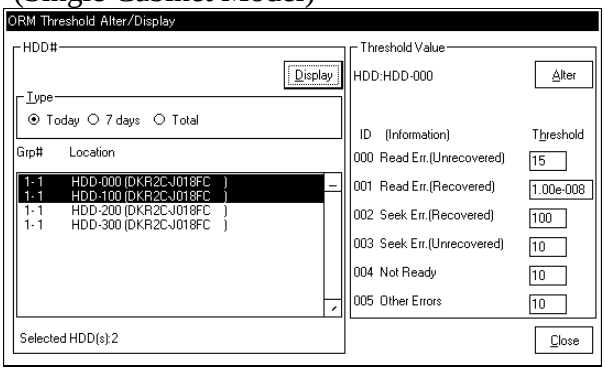
(3) In the ‘ORM Threshold Alter/Display’ dialog box, alter the threshold in the “Threshold” field in the“Threshold Value” list box. Then select (CL)[Alter].

Note: When multiple HDDs are selected in the “HDD#” list box, the thresholds of all HDDs are altered to the same value.

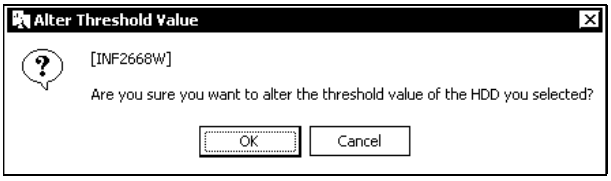
(Multi Cabinet Model)



(Single Cabinet Model)



(4) Select (CL) [OK] in the ‘Alter Threshold Value’ dialog box.



(5) Select (CL) [Close] in the ‘ORM Threshold Alter/Display’ dialog box and close the ‘Information’ window.

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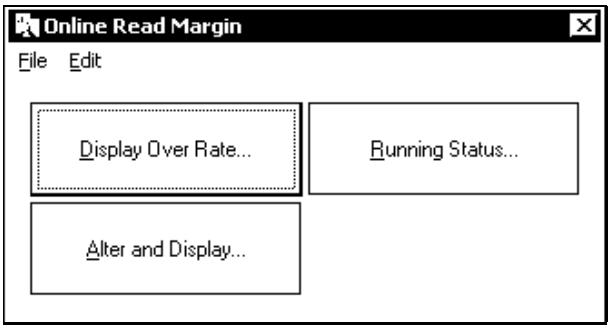
[5] Displaying the ORM running status

(1) Select (CL) [Running Status...].

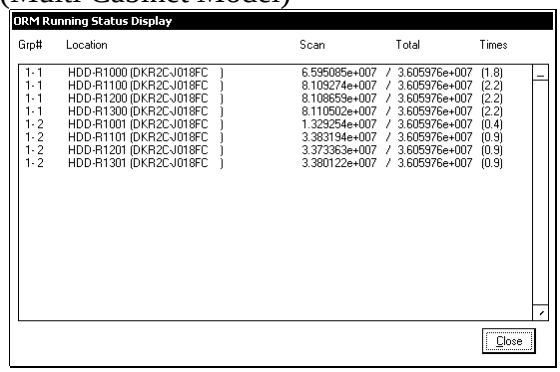


(2) In the 'ORM Running Status Display' dialog box, the ORM running status is displayed as the number of sectors.

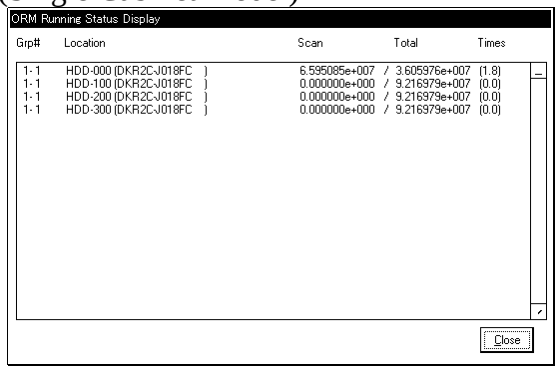
Note: The "HDD#" list box shows the location numbers of HDDs. "Scan" shows the number of scanned sectors. "Total" shows the total number of sectors in the drive. "Times" shows the number of times the entire drive was scanned.

Grp# : shows the parity group.
SPARE : spare HDD
RSRVD : reserved HDD with sparing
* : spare HDD in use.

(Multi Cabinet Model)



(Single Cabinet Model)



(3) Select (CL) [Close] in the 'ORM Running Status Display' dialog box and close the 'Information' window.

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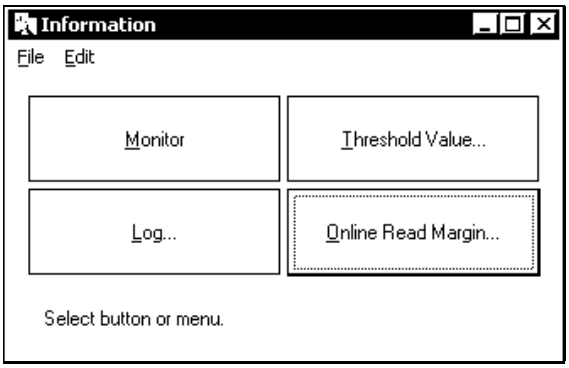
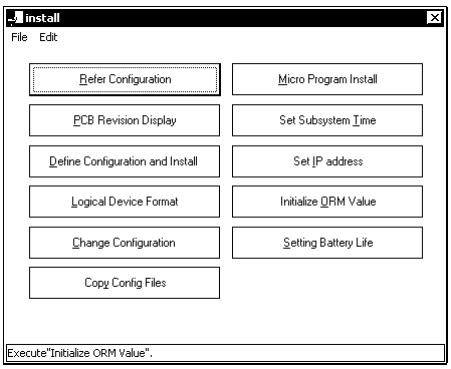
[6] Resetting thresholds

(1) Select (CL) [File]-[Exit] in the 'Information' window.



(2) Select (CL) [Install] in the 'SVP'.

(3) Select (CL) [Initialize ORM Value] in the 'Install' window.



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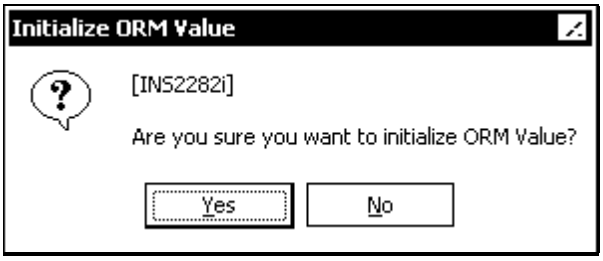
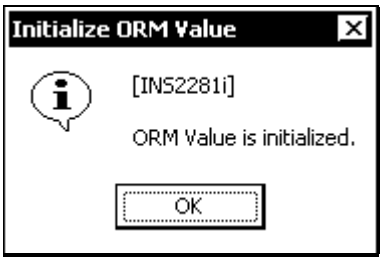
(4) Select (CL) [Yes] in the 'Initialize ORM Value' dialog box.



(5) Select (CL) [OK] in the 'Initialize ORM Value' dialog box.



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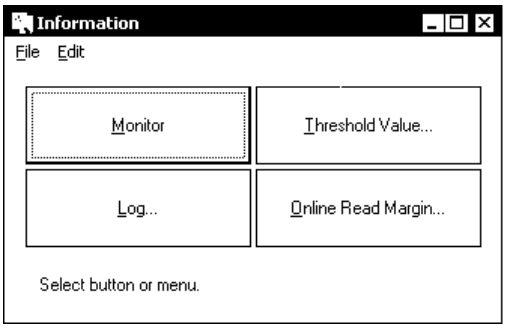
2.6 SIM Reporting Specification

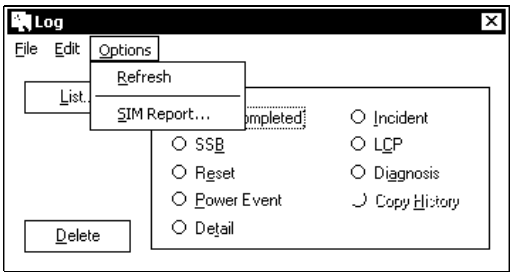
[1] DKC SIM
[2] Cache SIM
[3] Media SIM
[4] Device SIM

(1) Select (CL) [Information].

(2) Select (CL) [Log...] in the 'Information window'.



(3) Select (DR) [SIM Report...] from the [Options] menu in the 'Log' dialog box.



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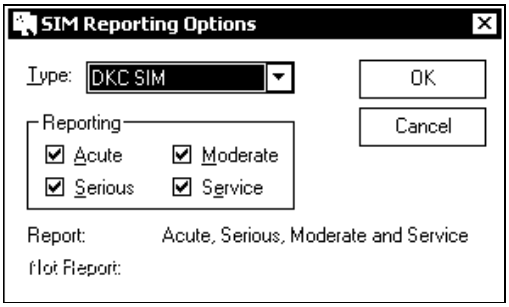
(4) Select (CL) SIM report type from the 'Type' list box.
Type : DKC SIM
Cache SIM
Media SIM
Device SIM



Select (CL) the level to be reported in the 'SIM Reporting Option' dialog box, and also select (CL) [OK].

SIM message report level are arranged as follows in order of the higher level.
Acute > Serious > Moderate > Service
Selecting level, means all higher levels are to be reported.

(5) Close the 'Log' dialog box and also close the 'Information' window.

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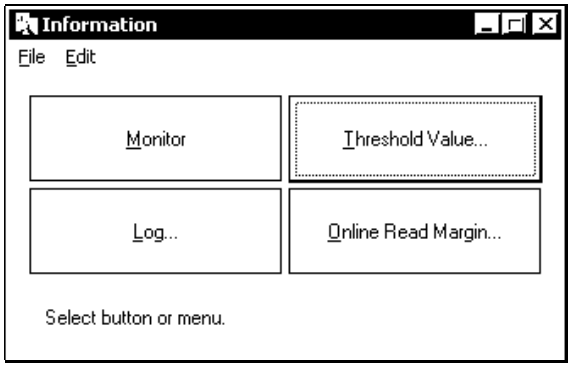
2.7 Management of drive threshold values

[1] Displaying threshold values ---------- SVP02-470
[2] Altering threshold value ---------- SVP02-490
[3] Displaying an error count ---------- SVP02-510
[4] Resetting an error count ---------- SVP02-520

(1) Check SVP Mode.
Following operations need SVP Mode to be 'Modify'. (See SVP01-80)
[2] Altering threshold value
[4] Resetting an error count

(2) Select (CL) the [Information] window in the 'SVP' window.

(3) Select (CL) [Threshold Value...] in the 'Information' window.



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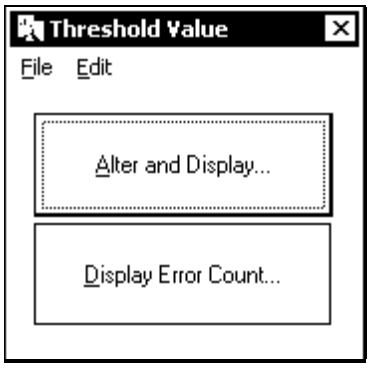
[1] Displaying threshold values

(1) Select (CL) [Alter and Display...] in the 'Threshold Value' window.

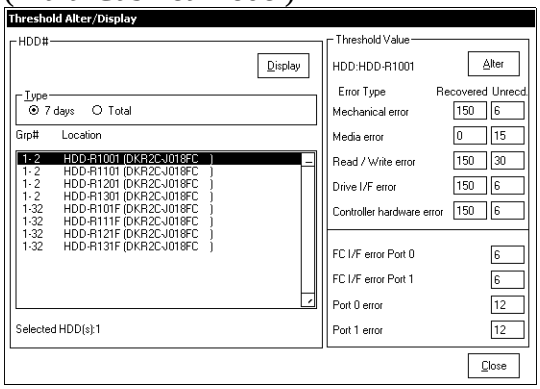


(2) Select (CL) an HDD location from the "HDD#" list box in the 'Threshold Alter/Display' dialog box and select(CL) [Display].
In order to display threshold of another interval, select (CL) the interval from the "Type" list box.

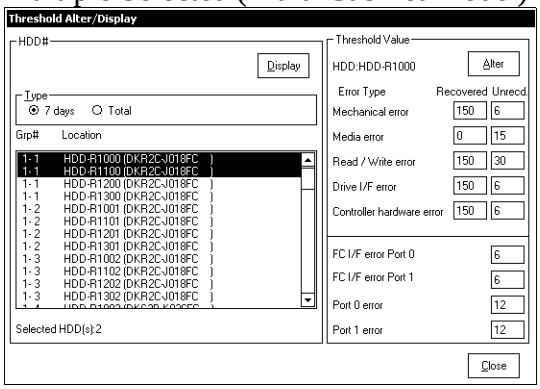
Note: Multiple HDD locations can be selected (CL) from the "HDD#" list box while the control key being held down. The threshold value in the "Threshold Value" list box shows the threshold value for the HDD location that is highlighted in the "HDD#" list box.
Recovered: Threshold of errors recoverable by retry.

Unrecd: Threshold of errors not recoverable by retry.
Grp# : the parity group.
SPARE : spare HDD
RSRVD : reserved HDD with sparing
* : spare HDD in use.

(Multi Cabinet Model)



Multiple Selected (Multi Cabinet Model)



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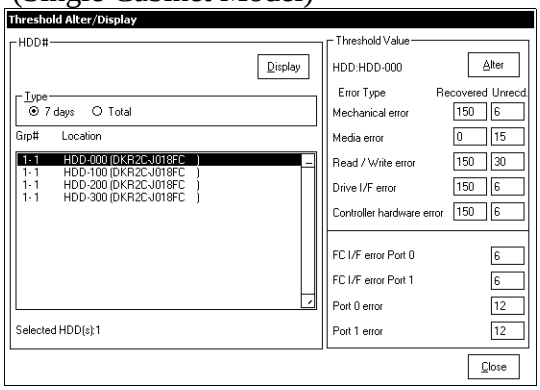
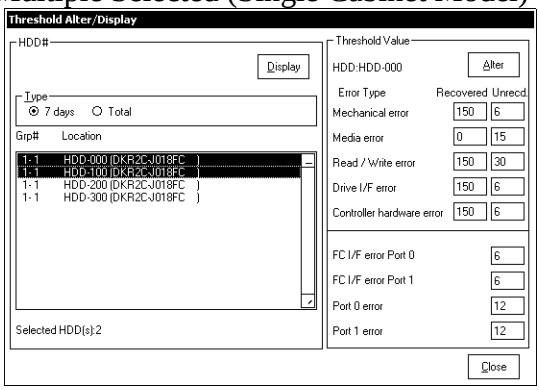
(Single Cabinet Model)



Multiple Selected (Single Cabinet Model)



(3) Select (CL) [Close] in the ‘Threshold Alter/Display’ dialog box and close the ‘Information’ window.

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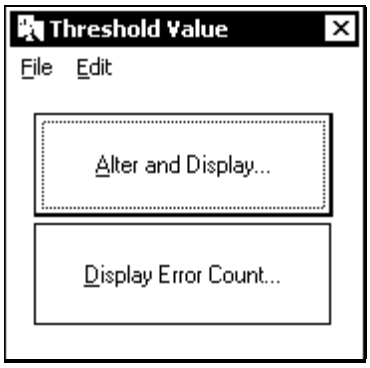
[2] Altering threshold value

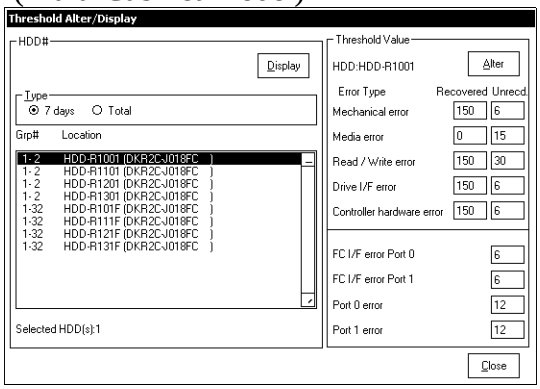
(1) Select (CL) [Alter and Display...] in the 'Threshold Value' window.



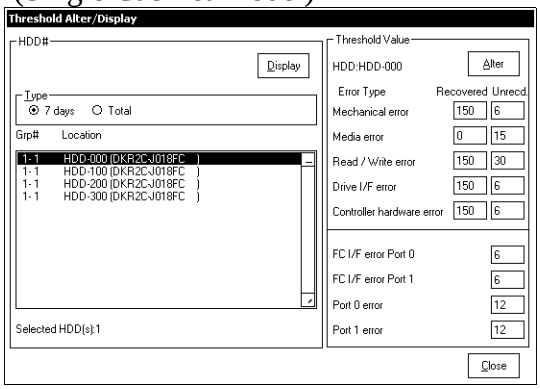
(2) Select (CL) an HDD location from the "HDD#" list box in the 'Threshold Alter/Display' dialog box and select (CL) [Display]. In order to display threshold of another interval, select (CL) the interval from the "Type" list box.

Grp# : the parity group.
SPARE : spare HDD
RSRVD : reserved HDD with sparing
* : spare HDD in use.

(Multi Cabinet Model)



(Single Cabinet Model)



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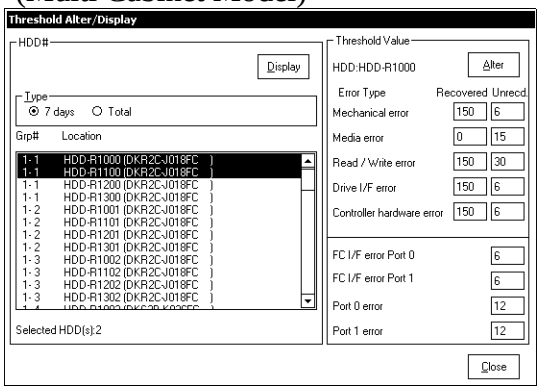
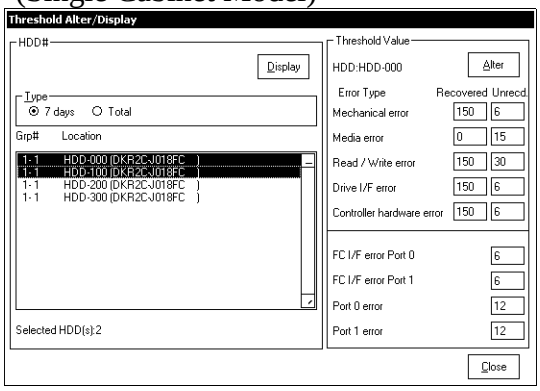
(3) Alter a threshold value in the “Threshold Value” list box in the ‘Threshold Alter/Display’ dialog box.
Then select (CL) [Alter].
Note: When multiple HDD location are selected(CL) from the “HDD#” list box while the control key being hold down, the thresholds for all the selected HDDs are modified to the same value.

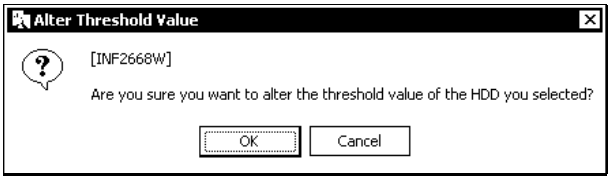
(Multi Cabinet Model)



(Single Cabinet Model)



(4) Select (CL) [OK] in the ‘Alter Threshold Value’ dialog box.



(5) Select (CL) [Close] in the ‘Threshold Alter/Display’ dialog box and close the ‘Information’ window.

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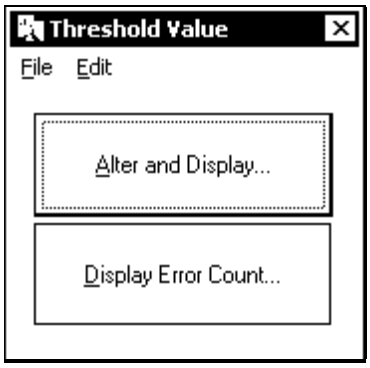
[3] Displaying an error count

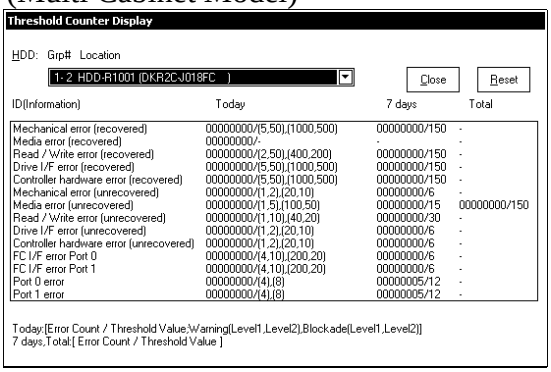
(1) Select (CL) [Display Error Count...] in the 'Threshold Value' Window.



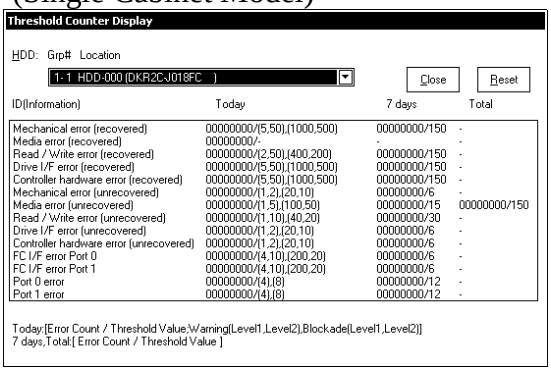
(2) Select (CL) an HDD location from the "HDD Location" drop-down list in the 'Threshold Counter Display' dialog box to display the error count for the HDD.

Grp# : the parity group.
SPARE : spare HDD
RSRVD : reserved HDD with sparing
* : spare HDD in use.

(Multi Cabinet Model)



(Single Cabinet Model)



(3) Select (CL) [Close] in the 'Threshold Counter Display' dialog box and close the 'Information' window.

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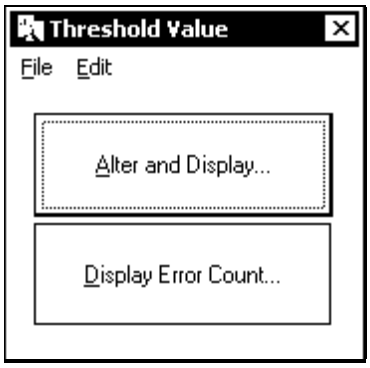
[4] Resetting an error count

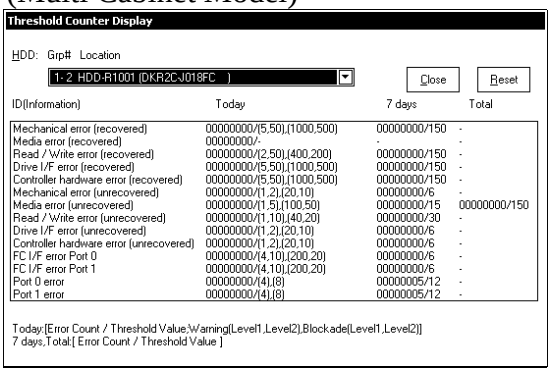
(1) Select (CL) [Display Error Count...] in the 'Threshold Value' window.



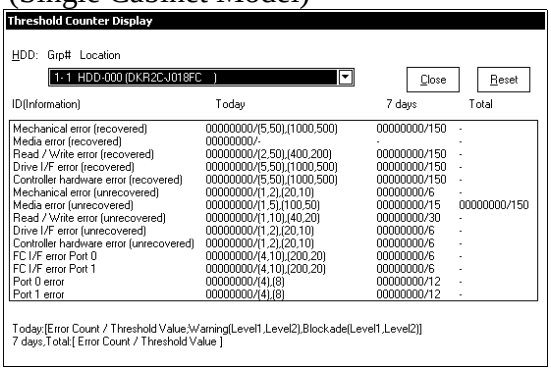
(2) Select (CL) the HDD location , for which you want to reset the error count, from the "HDD Location" drop-down list in the 'Threshold Counter Display' dialog box and also select (CL) [Reset].

Grp# : the parity group.
SPARE : spare HDD
RSRVD : reserved HDD with sparing
* : spare HDD in use.

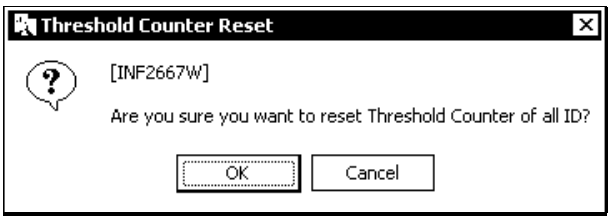
(Multi Cabinet Model)



(Single Cabinet Model)



(3) Select (CL) [OK] in the 'Threshold Counter Reset' dialog box.



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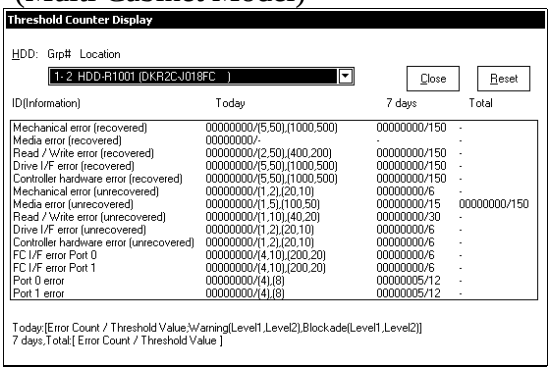
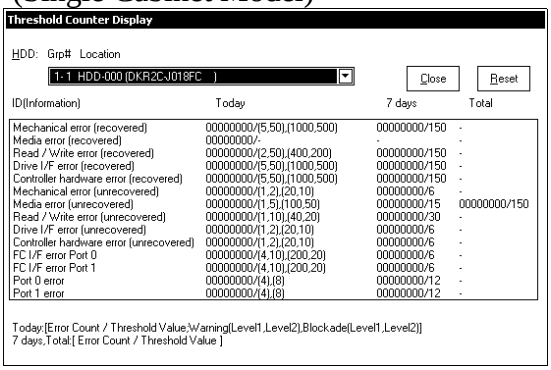
(4) After confirming that the error count has been reset in the 'Threshold Counter Display' dialog box select (CL) [Close] and close the 'Information' window.

(Multi Cabinet Model)



(Single Cabinet Model)



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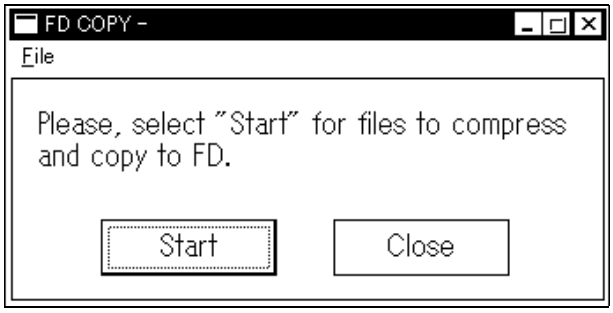
2.8 DUMP/LOG FD Copy

Prerequisite operation.

(1) Select (CL) [FD Copy].
If this function has been terminated abnormally (e.g, Ctrl + Alt + Delete), you should reboot SVP and retry again.



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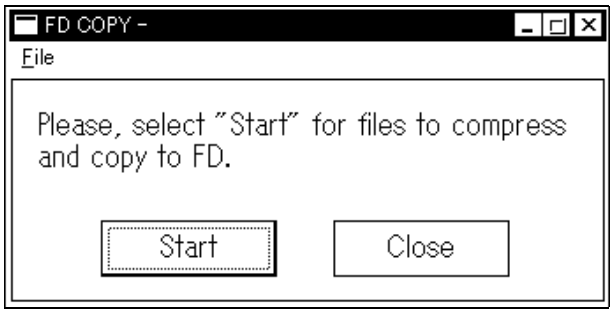
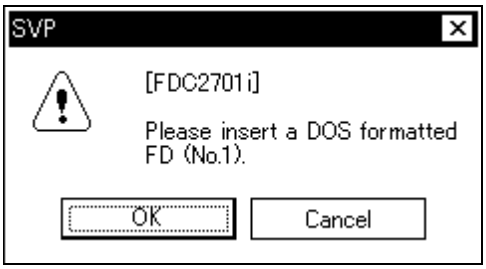
Copying the dump and log files to a floppy disk.

(1) Select (CL) [Start] in the 'FD Copy" dialog box.



(2) The message "Please insert a DOS formatted FD (NO.1) " will be displayed in the 'FD SET' dialog box. In response to this message, insert a floppy disk and select (CL) [OK].



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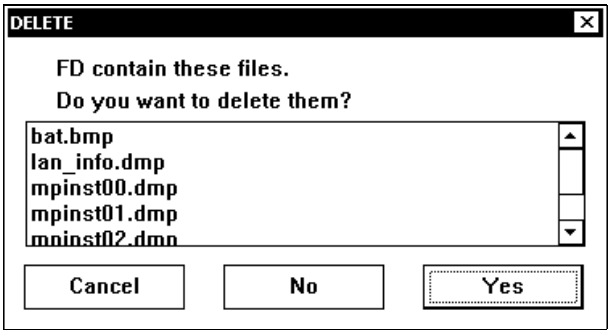
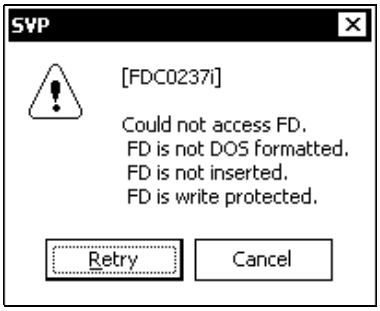
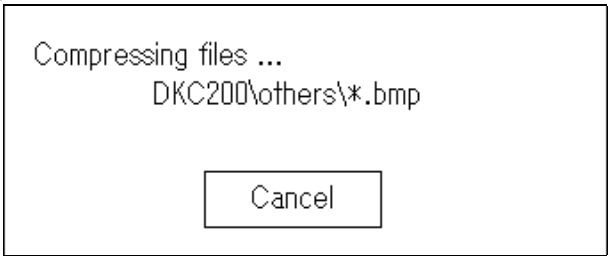
(3) If the floppy disk contains files, the message "FD contain these files. Do you want to delete them ?" is displayed.
If you want to delete these files, select (CL) [YES] and proceed to step (4).
If you don't want to delete these files, select (CL) [NO] and proceed to step (4).
If an error occurs, check the items indicated in the 'ACCESS ERROR!!' dialog box then select (CL) [Retry].
(The screen goes back to the beginning of step (4).)





(4) The message "Compressing files..." is displayed, and compressing is started.



(5) The message "Copying files to FD..." is displayed, and copying is started.
(If the capacity of the floppy disk becomes insufficient, go back to step (2) and replace the floppy disk with a new one.)

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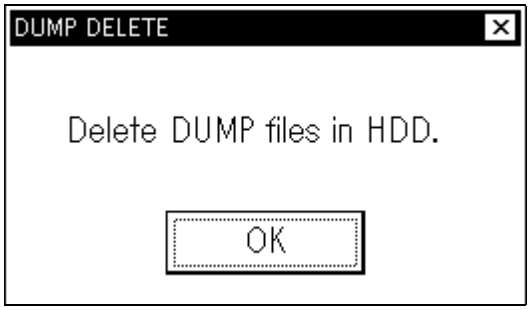
(6) The message “Delete DUMP files in HDD.” is displayed in the ‘DUMP DELETE’ dialog box.
Select (CL) [OK] and delete DUMP files in HDD.



(7) Close the ‘Fdcopy’ dialog box.

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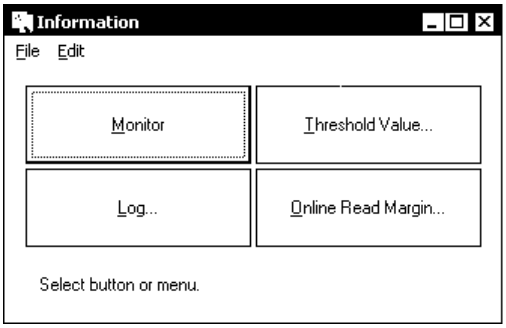
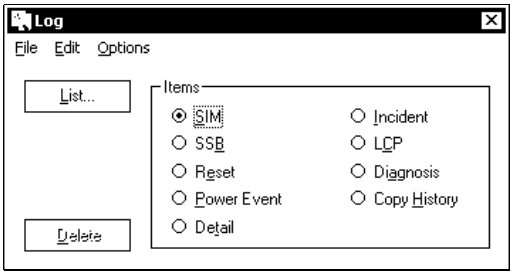
2.9 SIM Log Complete

(1) Select (CL) [Information].

(2) Select (CL) [Log...] in the 'Information' dialog box.



(3) Select (CL) [SIM] and [List...] in the 'Log'.



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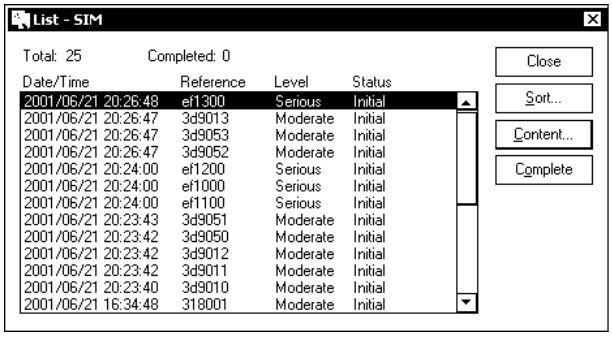
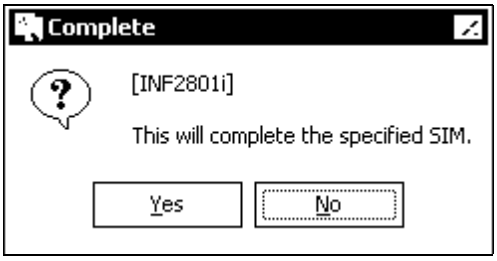
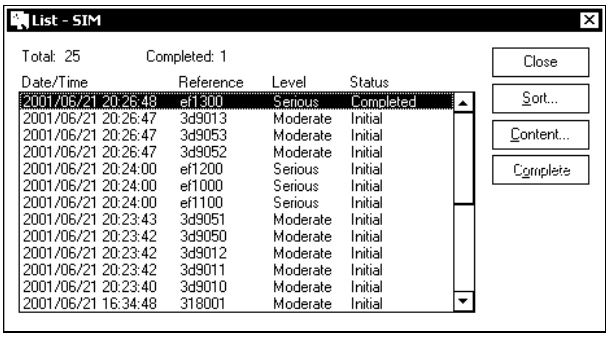
(4) Select (CL) data to be completed in the 'List-SIM' dialog box and select (CL) [Complete].



(5) Select (CL) [Yes] in the 'Complete' dialog box.



(6) In the 'List-SIM' dialog box, make sure that "Completed" is displayed in the status.



(7) Select (CL) [Close] in the 'List-SIM' dialog box.
Close the 'Log' dialog box and close the 'Information' window.

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2.10 Dump

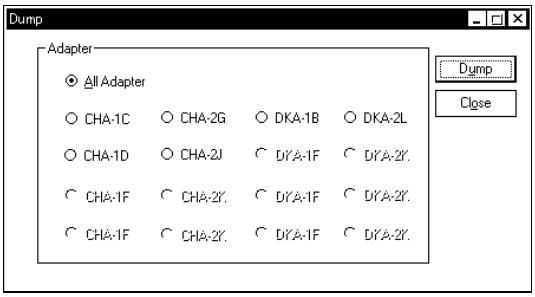
Auto Dump is a useful function to provide the user with free selection of the dump data type and the output media so that the user can collect dump information.

Note 1: Please use DUMP in order to select MP.
Note 2: You can use DUMP as usual.

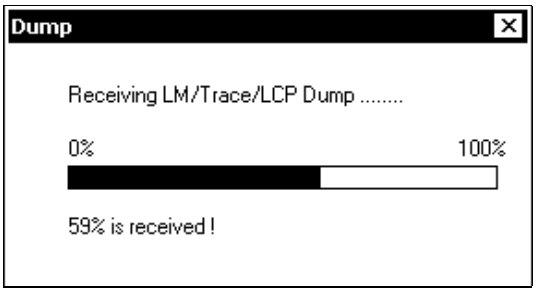
[1] Manual Dump

(1) Select (CL) [Dump] in the 'SVP' window.

(2) Select (CL) "Location No." of the processor in the 'Dump' dialog box, and select (CL) [Dump]. When [All Adapters] is selected, dumps from all the processors are performed.



(3) A box indicating progress of the dump is displayed. When the dump terminates normally, go to step (5).



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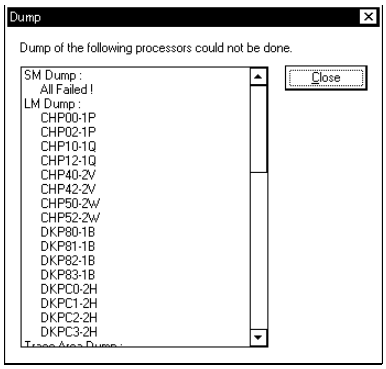
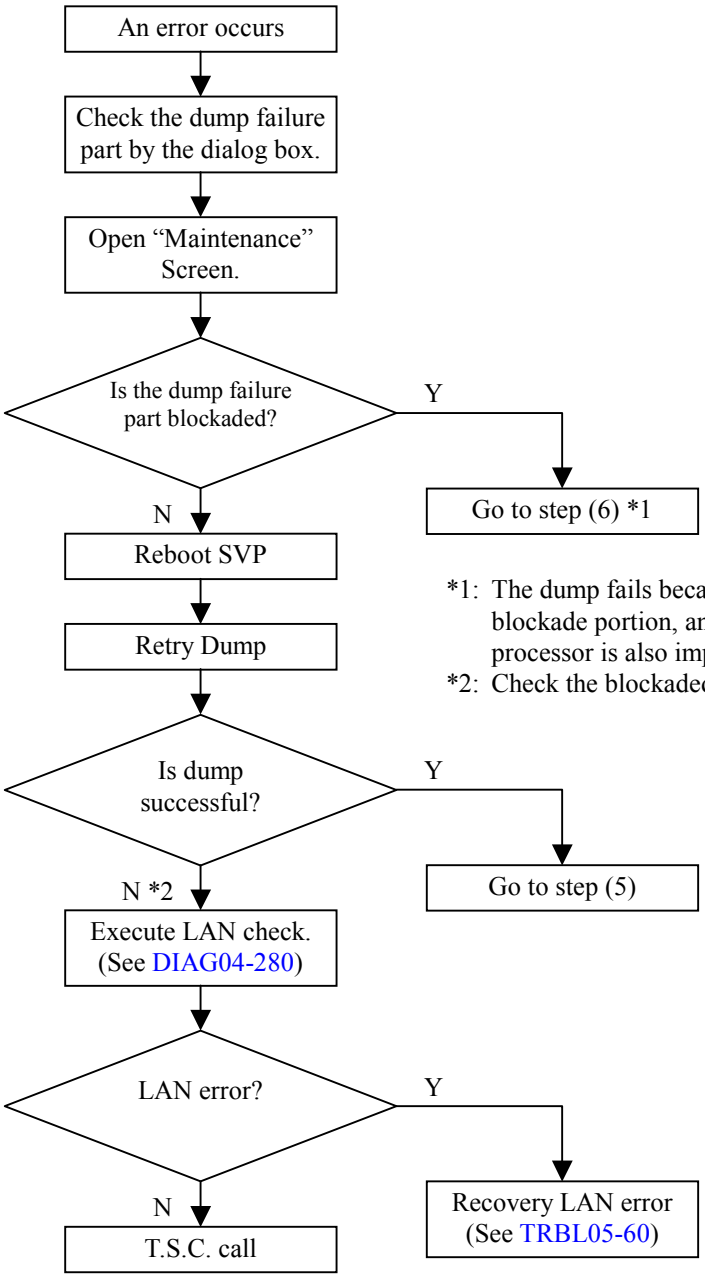
(4) When an error occurs, the following dialog box is displayed.
Perform the following procedure and retry the dump.





*1: The dump fails because the dumping is impossible for the blockade portion, and the LCP/FCP dump linked to the blockaded processor is also impossible.
*2: Check the blockaded part by the Maintenance.

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(5) "Dump is received successfully" is displayed. Select (CL) [OK].

(6) When copying the dump file to on FD, execute "[1] Copying the dump file to floppy disk" in Section 2.8 "DUMP/LOG FD Copy".

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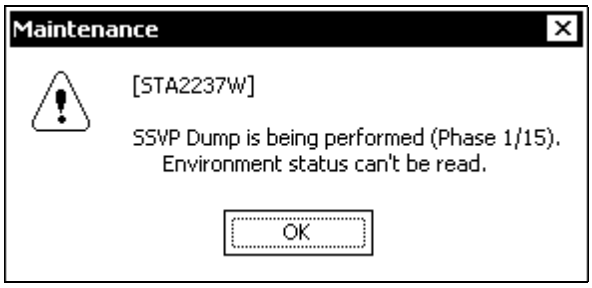
[2] SSVP DUMP

(1) Push the SSVP DUMP switch.
(Refer to LOCATION03-40, LOCATION03-60.)

(2) Open the Maintenance window (see SVP section).
Check that the message “SSVP Dump is being performed (XXXX). Environment status can’t be read.” is displayed and select (CL) [OK].



If the message “Connection error occurred. SVP-SSVP” is displayed, check the wiring connection and select (CL) [OK] to start from step (1) again. If step (1) is performed three times and the same message “Connection error occurred. SVP- SSVP” is displayed, replace SSVP (see REP01-170).

(3) The SSVP ALARM lamp blinks after completion of dump.
(For about 10 minutes after performing step (1))

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(4) Copy the dump file to FD.
Perform “2.8 DUMP/LOG FD Copy” on page SVP02-540.

(5) Push the SSVP Alarm Reset switch.
(Refer to LOCATION03-40, LOCATION03-60.)

(6) Open the Maintenance window.
If the message “Connection error occurred .SVP-SSVP” is displayed, select (CL) [OK] to perform step (5) again.
If step (5) is performed three times and the same message “Connection error occurred. SVP- SSVP” is displayed, replace SSVP (see REP01-170).

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(7) If the message shown at step (6) is not displayed, the SSVP IMPL is completed.

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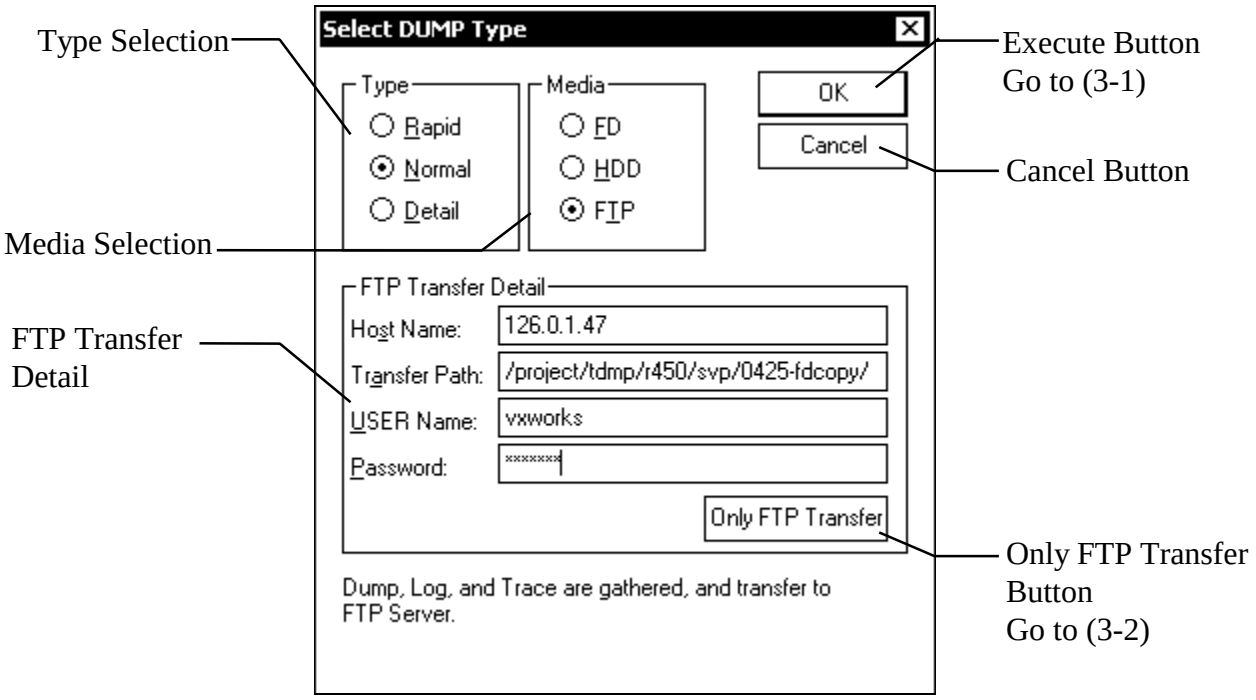
[3] Auto Dump

(1) Select (CL) [**AutoDump**] button

(2) Select one of three dump types and one of two media types and specify the FTP Transfer Detail, and select (CL) [OK] or [Only FTP Transfer].



<Dump Type>

(a)Rapid This dump type is to get log information, SVP operation history, or configuration information. SVP will compress these files automatically. The compressed files will be stored in a few FDs. This dump type will be used when the initial analysis of error is needed. In this case, you should gather the files used by this type and send it to the Center. After sending this files, you should gather dump data by selecting "Normal" type and send it to the Center to analyze more details.

(b)Normal This dump type is to get dump data (you can get DUMP information of all adapters) adding to the log files used by "Rapid" type. SVP will compress these dump files automatically. You should get dump data by using this dump type after sending the "Rapid" type of data to Center.

(c)Detail This type is to get monitor information adding to the dump files used by "Normal" type. This data will be needed when the performance of the DKC wants to be checked. If there is no order to get these data, you do not need to use this type.

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<Media>

(a)FDD SVP will store the compressed files to FD. If the data could not be stored in one FD, SVP will divide the compressed files into smaller files and store them into several FDs. If you cannot transfer the compressed files to your center from the SVP, you could use this media type to save files into several FDs and transfer them by using other PC which can connect to the center.

(b)HDD SVP will store the compressed files to HDD. The file name is "c:\dkc200\tmp\hdcp.lzh". If you can transfer the files to your center directly, this type will be useful. (Notice: When operating the maintenance, SVP will sometimes delete the files. Do not use the maintenance operation before sending the files to your center.)

(c)FTP SVP will store the compressed files to HDD. The file name is "c:\dkc200\tmp\hdcp.lzh". After the compression processing end, Transfer processing of compression data is performed to the transfer place directory of a specification server inputted into FTP Transfer Detail.

<FTP Transfer Detail>

(a)Host Name The host name of a FTP transfer place or an IP address is inputted.

(b)Transfer Path The directory of a FTP transfer place is inputted.

(c)USER Name The user name which login to a FTP server is inputted.

(d)Password The password which login to a FTP server is inputted.

<[Only FTP Transfer] Button>

When FTP mode is selected, only transmission of the "c:\dkc200\tmp\hdcp.lzh" already compressed Performed to the transmission place directory of a specification server which inputted into FTP Transfer Detail without refreshing it.

(3-1) Executing Auto Dump

SVP will execute Auto Dump. Refer to the following section during the process.

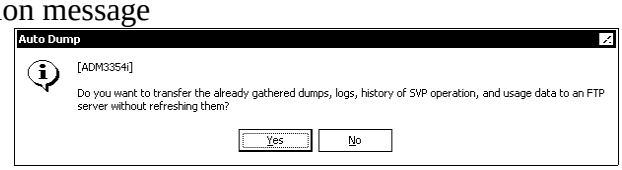
2.9 DUMP/LOG FD Copy

2.11 DUMP

Go to (4)

(3-2) Select (CL) [OK] in response to the confirmation message

"Do you want to transfer the already gathered dumps, logs, history of SVP operation, and usage data to an FTP server without refreshing them?"



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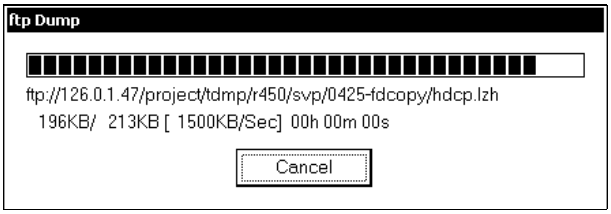
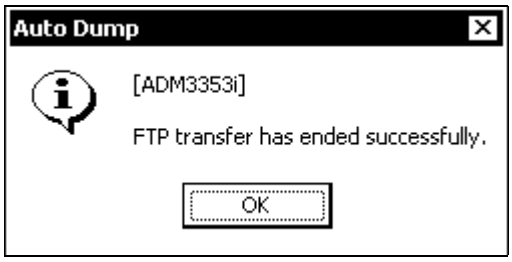
(4) Starting FTP Transfer
When [FTP] is selected as an [Media], transfer processing of compression data begins.



(5) Finish FTP Transfer
After finishing the FTP transfer function, SVP will display the message “FTP transfer has ended successfully.”. Select (CL) [OK] to end this process.



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2.11 Logical Device Maintenance

2.11.1 Logical Device

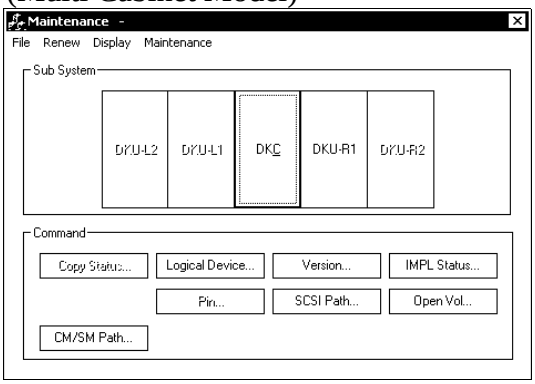
[1] Physical Device List ----------SVP02-690
[2] FORMAT Logical Device ----------SVP02-700
[3] Block Logical Device ----------SVP02-730
[4] Restore the Logical Device ----------SVP02-760
[5] Refer the system configuration data ----------SVP02-790
[6] Verify Logical Device ----------SVP02-800
[7] LDEV recovery for multiple PDEV failures ----------SVP02-840
[8] Only a Blockade Logical Device FORMAT with together ----------SVP02-855

Prerequisite Operation: From [1] to [7]

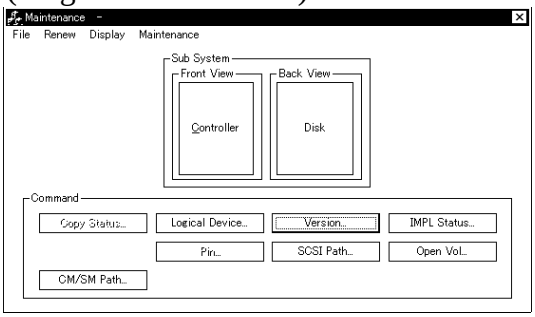
(1) Select (CL) [Maintenance] in the 'SVP' window.

(2) Select (CL) [Logical Device] in the 'Maintenance' Window.

(Multi Cabinet Model)



(Single Cabinet Model)



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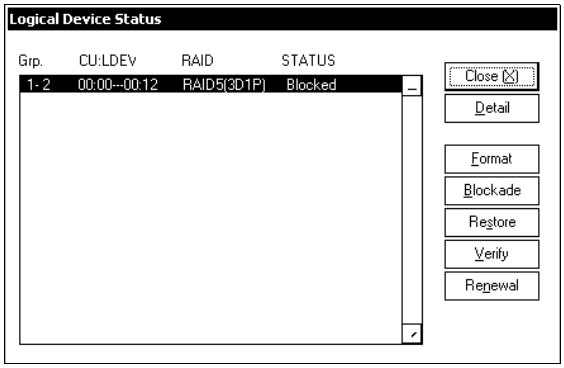
(3) “Logical Device Status” is displayed.



Prerequisite Operation: [8]

(1) Change the mode to [MODIFY Mode], select (CL) [Install].

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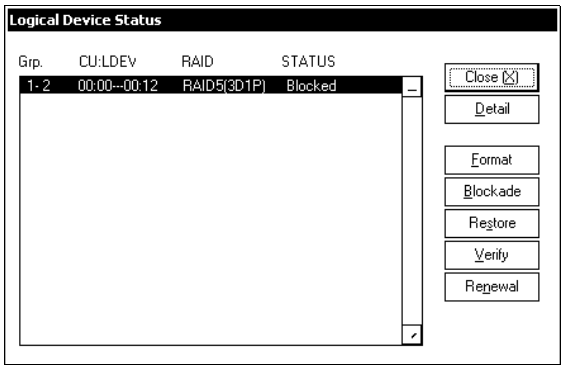
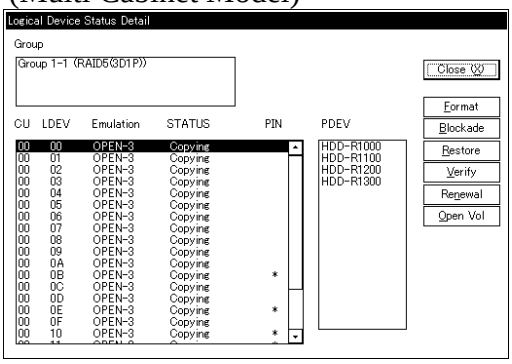
[1] Physical Device List

(1) Select (CL) an LDEV from the LDEV list box in the 'Logical Device Status' dialog box and select (CL) [Detail].

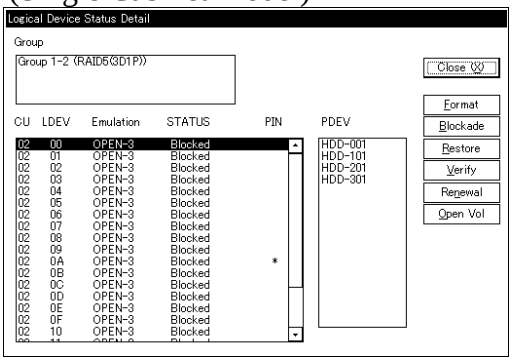


(2) 'Logical Device Status Detail' is displayed. And select (CL) [Close].

(Multi Cabinet Model)



(Single Cabinet Model)



(3) Select (CL) [Close] in the 'Logical Device Status' dialog box. Close the 'General Status Display' window.

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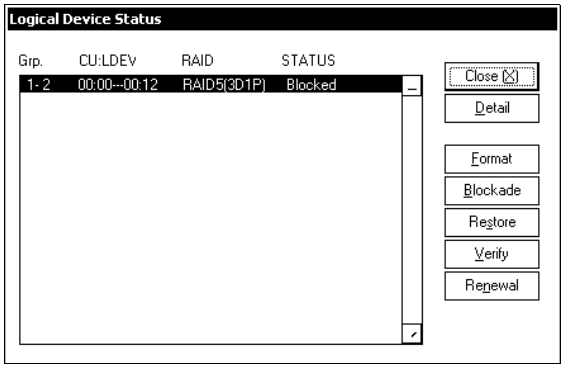
[2] FORMAT Logical Device

Notice
Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

(1) Select (CL) ECC group from the LDEV list box in the 'Logical Device Status' dialog box.

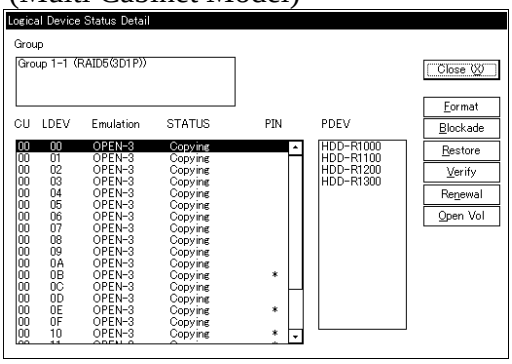


Format by Ldev unit :
Select (CL) [Detail] ---------- Go to (2-1)
Format by ECC group :
Select (CL) [Format] ---------- Go to (2-2)
(It can select multiple items at once)

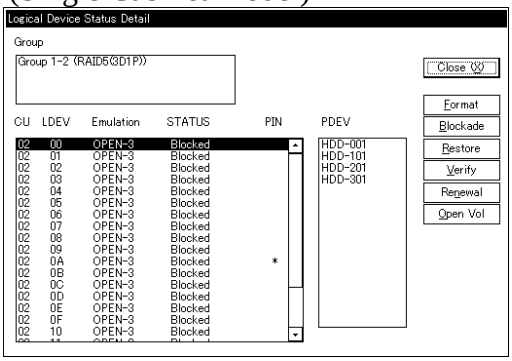
Note: Execute Format Logical Device after you confirm the target Logical Device is blocked.

(2-1) Select (CL) LDEVs which you want to format from "Logical Device Status Detail", and select (CL) [Format]. Go to (2-2).
(It can select multiple items at once.)

(Multi Cabinet Model)



(Single Cabinet Model)



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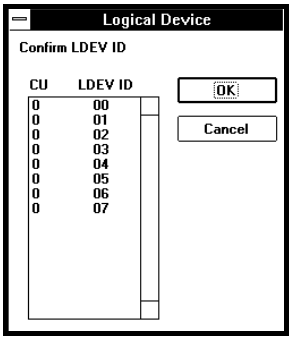
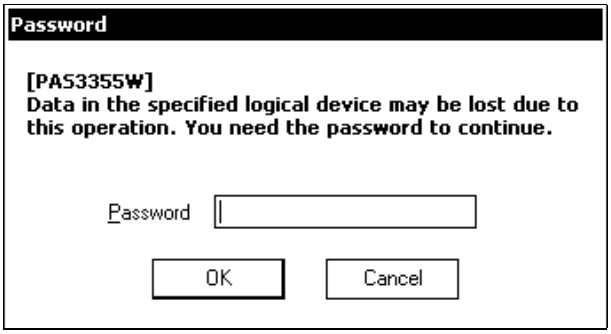
(2-2) Select (CL) the corresponding LDEV from the LDEV ID list in the 'Logical Device' dialog box and select (CL) [OK].

If the target LDEV was not blocked, return to the 'Logical Device Status' dialog box.



(3) "Data in the specified logical device may be lost due to this operation. You need the password to continue." is displayed. Enter the password and select (CL) [OK].



Notice
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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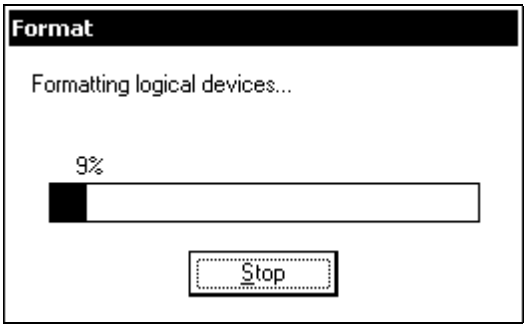
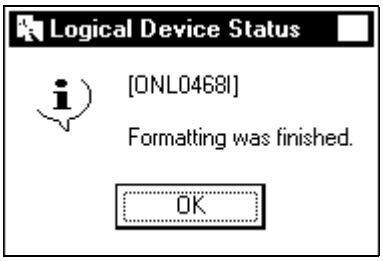
(4) “Formatting the logical device...” is displayed.



Notice
When REFER CONFIG etc. is executed during LDEV FORMAT of open volume, there is the rare case that MAINTENANCE WINDOW may disappear. Then please reboot SVP and execute LDEV FORMAT again.
For your information, even while rebooting SVP, LDEV FORMAT is executed without intermission. When you open LDEV FORMAT WINDOW again, you can see the current status of LDEV FORMAT.

(5) Select (CL) [OK] in response to “Formatting was finished.”.



(6) Select (CL) [Close] in the ‘Logical Device Status’ dialog box.
Close the ‘Maintenance’ window.

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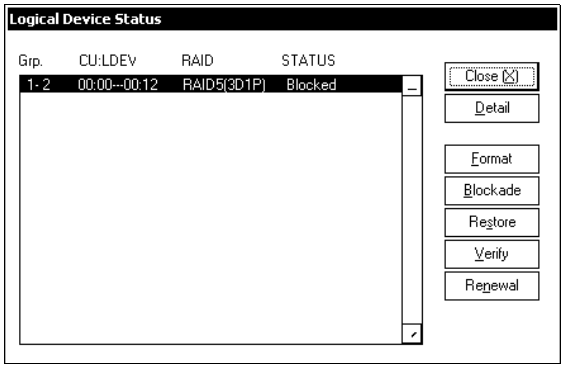
[3] Block Logical Device

Notice
Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

(1) Select (CL) ECC group from the LDEV list box in the 'Logical Device Status' dialog box.

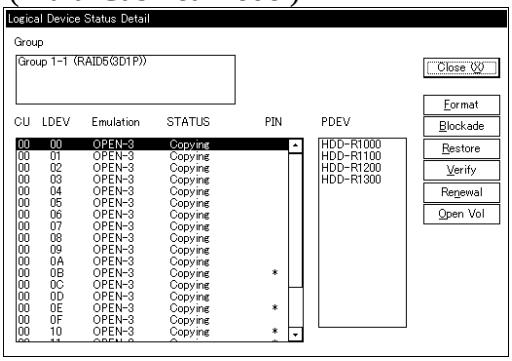
Blockade by Ldev unit :
Select (CL) [Detail] Go to (2-1)
Blockade by ECC group :
Select (CL) [Blockade] Go to (2-2)
(It can select multiple items at once)



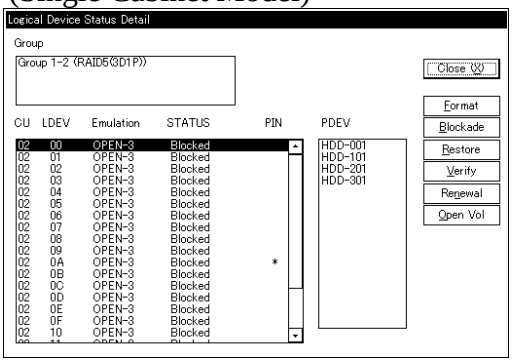
Notice
Execute Format Logical Device after you confirm the target Logical Device is blocked.

(2-1) Select (CL) LDEVs which you want to format from "Logical Device Status Detail", and select (CL) [Blockade]. Go to (2-2).
(It can select multiple items at once.)

(Multi Cabinet Model)



(Single Cabinet Model)



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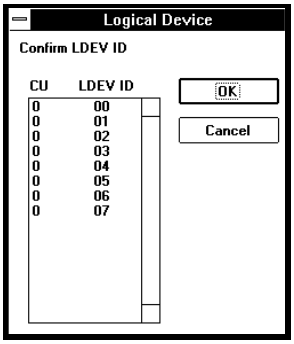
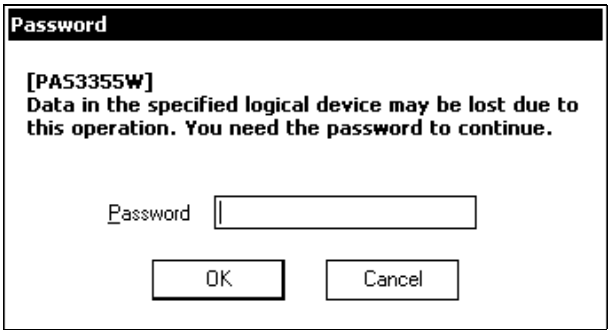
(2-2) Select the corresponding LDEV from the LDEV ID list in the 'Logical Device' dialog box and select (CL) [OK].



(3) "Data in the specified logical device may be lost due to this operation. You need the password to continue." is displayed.
Enter the password and select (CL) [OK].



Notice
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

(4) "Blocking the logical device..." is displayed.

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(5) Select (CL) [OK] in response to “Blocking the logical device is completed.”.

(6) Select (CL) [Close] in the ‘Logical Device Status’ dialog box.
Close the ‘Maintenance’ window.

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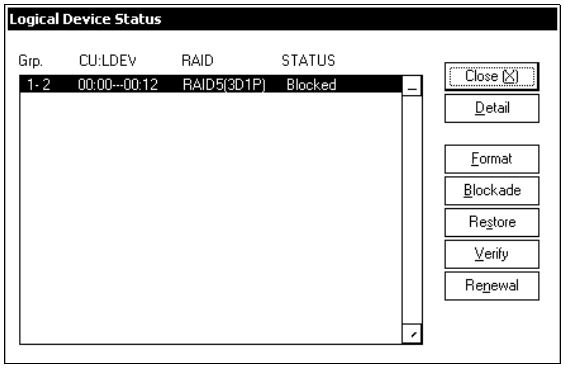
[4] Restore the Logical Device

Notice
Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

(1) Select (CL) ECC group from the LDEV list box in the 'Logical Device Status' dialog box.

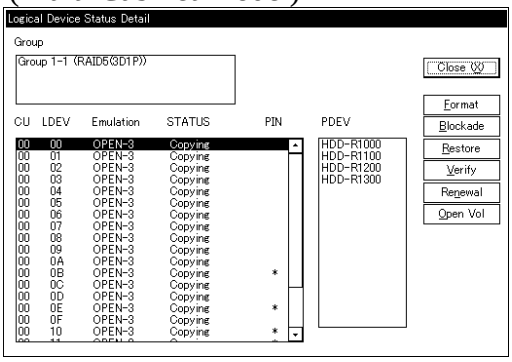


Restore by Ldev unit :
Select (CL) [Detail] ---------- Go to (2-1)
Restore by ECC group :
Select (CL) [Restore] ---------- Go to (2-2)
(It can select multiple items at once)

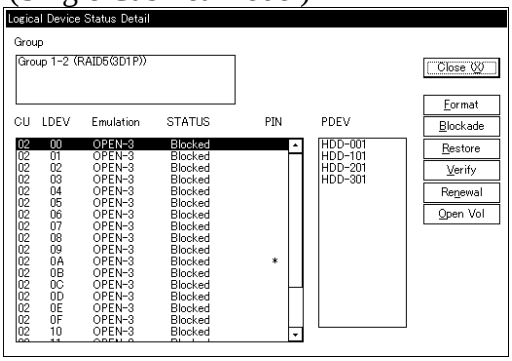
Note: Execute Restore Logical Device after you confirm the target Logical Device is blocked.

(2-1) Select (CL) LDEVs which you want to format from "Logical Device Status Detail", and select (CL) [Restore]. Go to (2-2).
(It can select multiple items at once.)

(Multi Cabinet Model)



(Single Cabinet Model)



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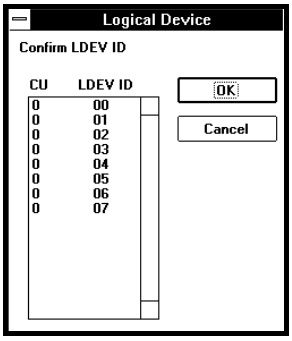
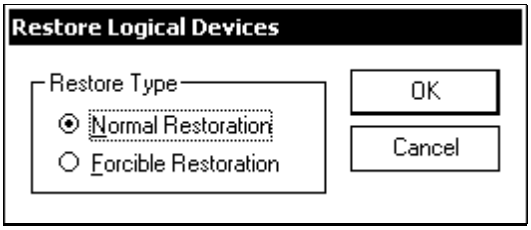
(2-2) Select (CL) the corresponding LDEV from the LDEV ID list in the 'Logical Device' dialog box and select (CL) [OK].

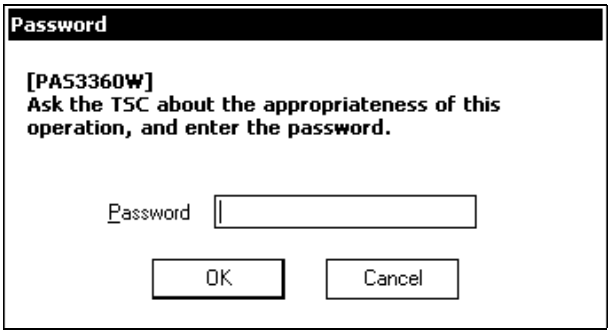
If the target LDEV was not blocked, return to the 'Logical Device Status' dialog box.



(3) Select (CL) the corresponding item from the Restore Type in the 'Restore Logical Device' dialog box and select (CL) [OK].



If "Forcible Restoration" is selected, the message "Ask the TSC about the appropriateness of this operation, and enter the password." is displayed.
Enter the password and select (CL) [OK].



Notice
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

(4) "Restoring..." is displayed.

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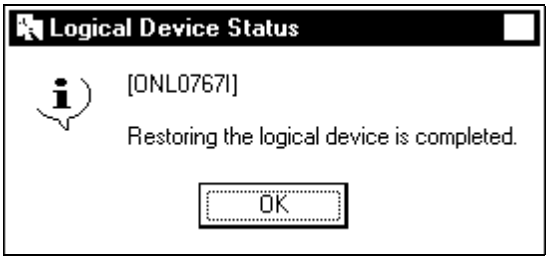
(5) Select (CL) [OK] in response to “Restoring the logical device is completed.”.



(6) Select (CL) [Close] in the ‘Logical Device Status’ dialog box.
Close the ‘Maintenance’ window.

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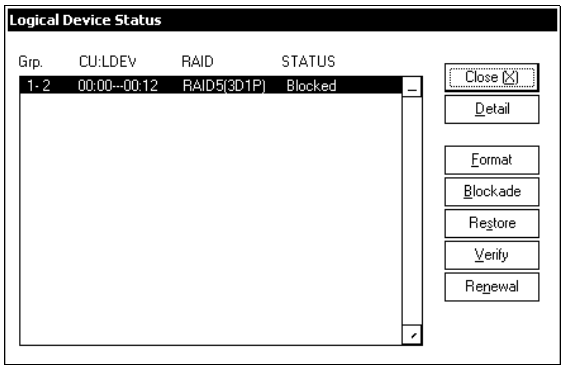
[5] Refer the system configuration data

(1) Select (CL) [Renewal] in the 'Logical Device Status' dialog box.



(2) "Reading the subsystem configuration..." is displayed.

(3) Select (CL) [Close] in the 'Logical Device Status' dialog box.
Close the 'Maintenance' window.

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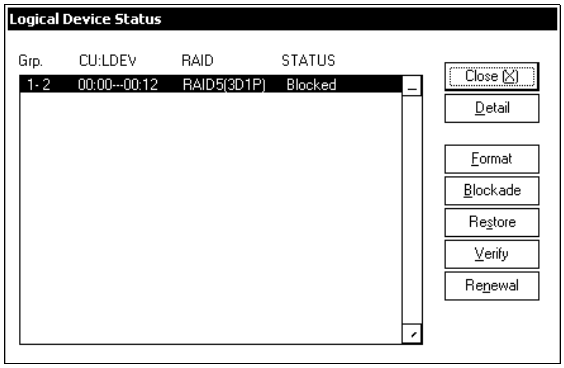
[6] Verify Logical Device

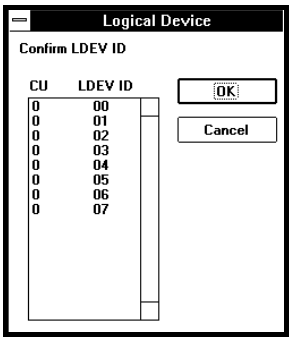
Notice
Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

(1) Select (CL) an LDEV from the LDEV list box in the 'Logical Device Maintenance List' dialog box and select (CL) [Verify...].



(2) Select (CL) the corresponding LDEV from the LDEV ID list in the 'Logical Device' dialog box and select (CL) [OK].

If the target LDEV was not Normal, return to the 'Logical Device Status' dialog box.



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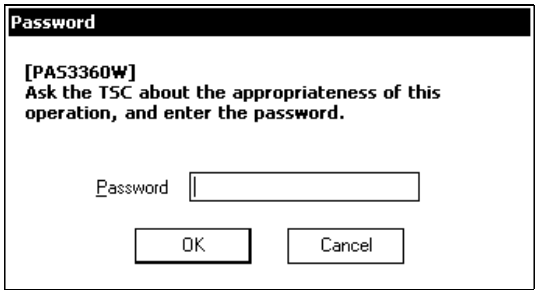
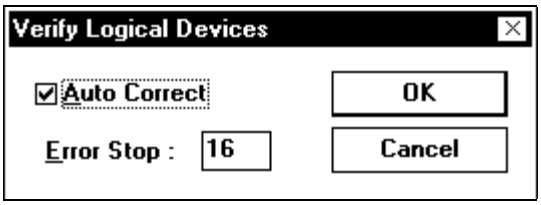
(3-1) Enter the password and select (CL) [OK].

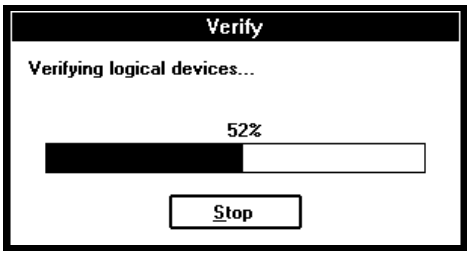


Notice
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Select (CL) 'Auto Correct' or input the value of Error Stop, and select (CL) [OK].



(3-2) "Verifying logical devices..." is displayed.
If you want to stop the check, select (CL) [Stop].
Go to (5)
If the parity error is not beyond the 'Error Stop' value, go to (4).
If the error is beyond the value, go to (7).



(4) If parity has errors less than the specified "Error Stop", "Verifying the logical devices is finished." is displayed.

Go to (6).

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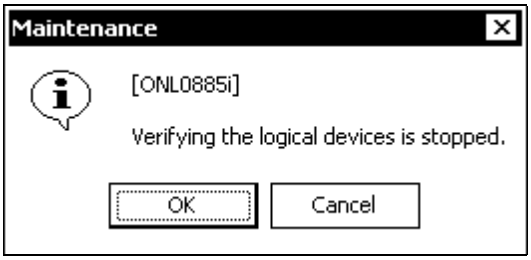
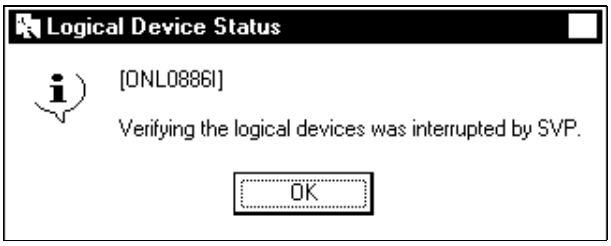
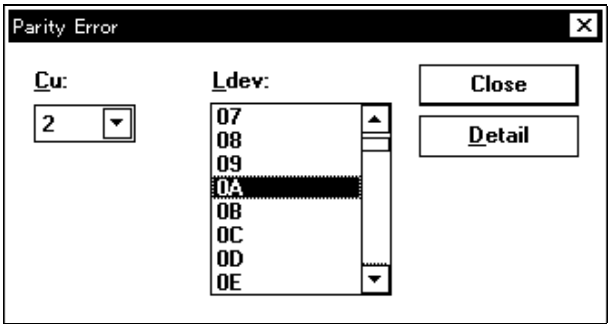
(5) If [Stop] is selected (CL) in the “Verify” window and [OK] is selected in response to the inquiry message, “Verifying the logical devices was interrupted by SVP.” is displayed.





(6) Select (CL) [OK] in response to the messages (4) ~ (5).
Select (CL) [Close] in the ‘Logical Device Status’ dialog box, Close the ‘Maintenance’ window.

(7) An LDEV having parity errors is displayed.
Select (CL) an LDEV to be indicated in the ‘Parity Error’ dialog box and select (CL) [Detail...].



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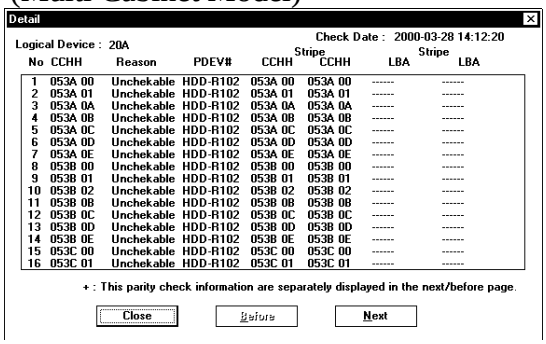
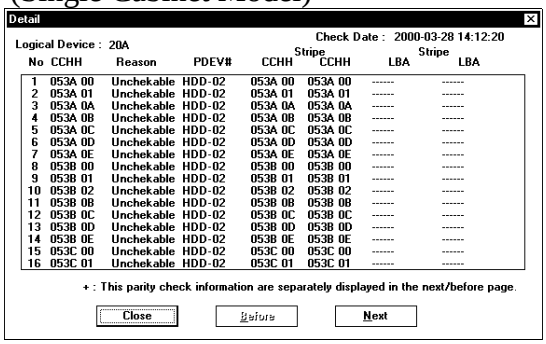
(8) Detail of parity errors.
(When “No.” exist more than 17, select (CL) [Next].)

Note: For OPEN-LDEV, only LBA’s are displayed. If LBA of the error slot can not be displayed, “----” is displayed in both CCHH and LBA columns.
As for “Logical Device:”, LDEV#:“XXX” of the error slot and LDEV#:“(YYY)” at the head of extension LU are displayed. But, the LDEV at the head of extension LU doesn’t display “(YYY)”.

(Multi Cabinet Model)



(Single Cabinet Model)



(9) Select (CL) [Close] in the ‘Detail’ dialog box.
Select (CL) [Close] in the ‘Parity Error’ dialog box.

(10) Select (CL) [close] in the ‘Logical Device Status’ dialog box.
Close the ‘Maintenance’ window.

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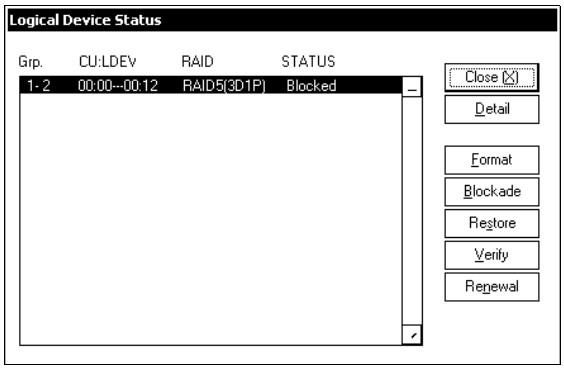
[7] LDEV recovery for multiple PDEV failures

(1) Select (CL) ECC group from the LDEV list box in the 'Logical Device Status' dialog box.

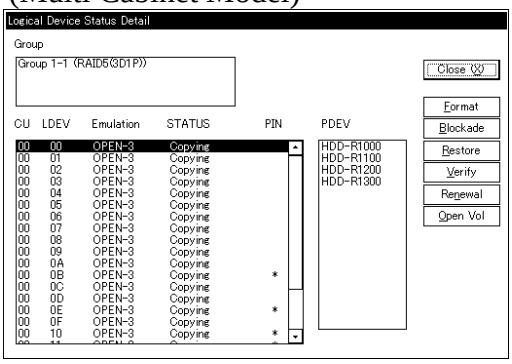


Restore by Ldev unit :
Select (CL) [Detail] ---------- Go to (2-1)
Restore by ECC group :
Select (CL) [Restore] ---------- Go to (2-2)
(It can select multiple items at once)

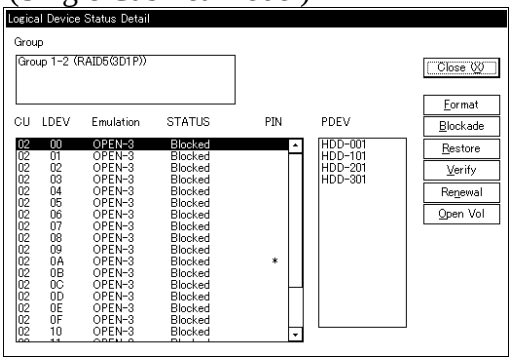
Note: Execute Restore Logical Device after you confirm that the target Logical Device is blocked.

(2-1) Select (CL) LDEVs which you want to format from "Logical Device Status Detail", and select (CL) [Restore]. Go to (2-2).
(It can select multiple items at once.)

(Multi Cabinet Model)



(Single Cabinet Model)



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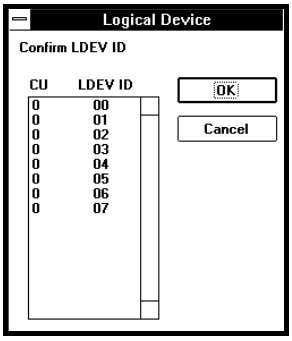
(2-2) Select (CL) the corresponding LDEV from the LDEV ID list in the 'Logical Device' dialog box and select (CL) [OK].

If the target LDEV was not blocked, return to the 'Logical Device Status' dialog box.



(3) "Restoring..." is displayed.

(4) Select (CL) [OK] in response to "Restoring the logical devices is completed.".

(5) Select (CL) [Close] in the 'Logical Device Status' dialog box. Close the 'Maintenance'.

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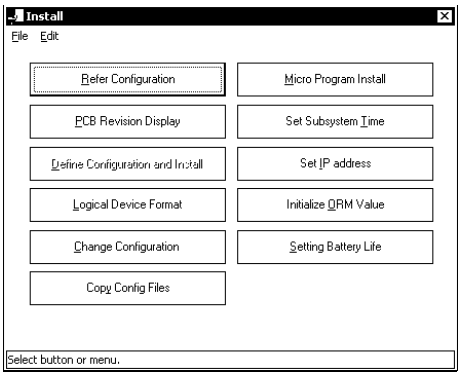
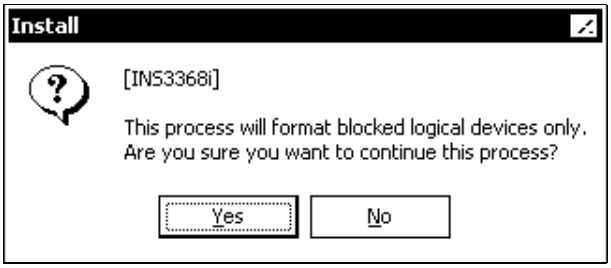
[8] Only a Blockade Logical Device FORMAT with together

Notice
Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

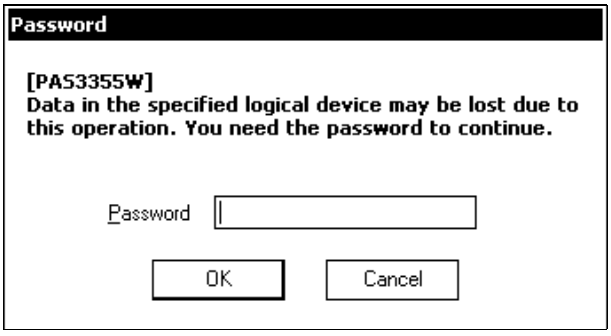
(1) Select (CL) [Logical Device Format].



(2) Select (CL) [Yes] in response to "This process will format blocked logical devices only. Are you sure you want to continue this process?"



(3) "Data in the specified device may be lost due to this operation. You need the password to continue." is displayed.
Enter the password and select (CL) [OK].



Notice
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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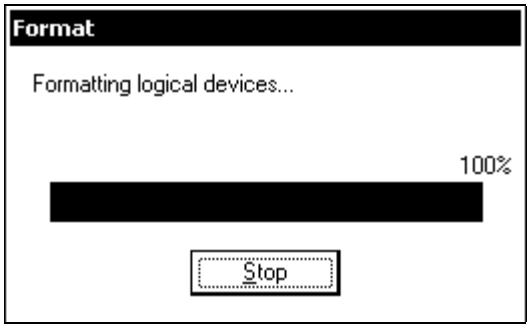
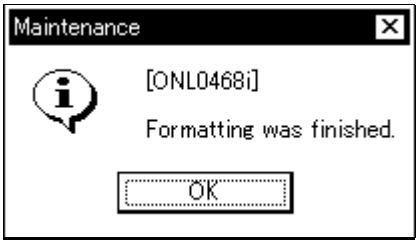
(4) “Formatting logical device...” is displayed.



(5) Select (CL) [OK] in response to “Formatting was finished.”.



(6) Close the ‘Install’ window.

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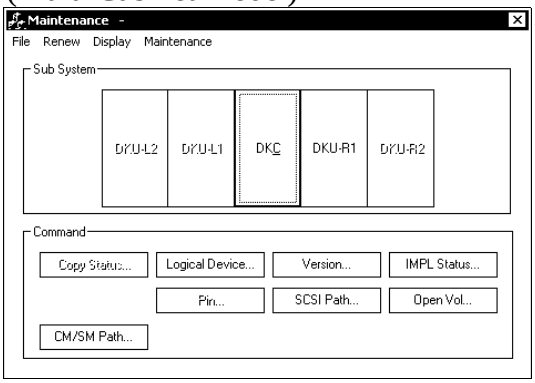
2.11.2 Open VOL

[1] FORMAT Open VOL ----------SVP02-880
[2] Block Open VOL ----------SVP02-900
[3] Restore Open VOL ----------SVP02-920

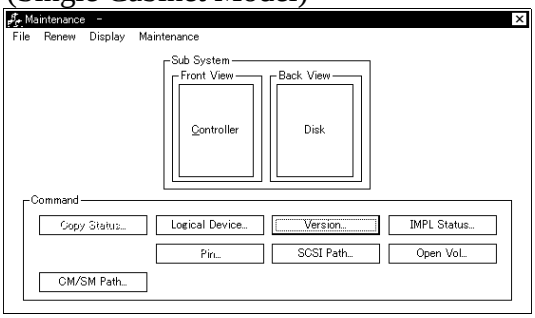
(1) Select (CL) the [Maintenance] in the 'SVP' window.

(2) Select (CL) [Open VOL] in the 'Maintenance'.

(Multi Cabinet Model)



(Single Cabinet Model)



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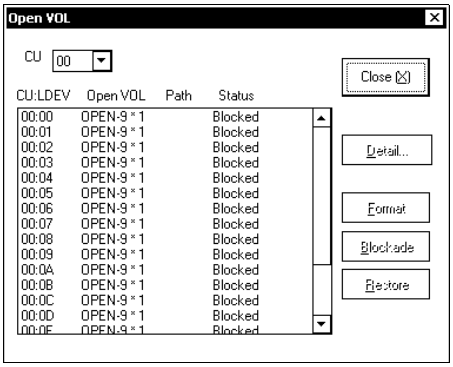
(3) ‘Open VOL’ is displayed.



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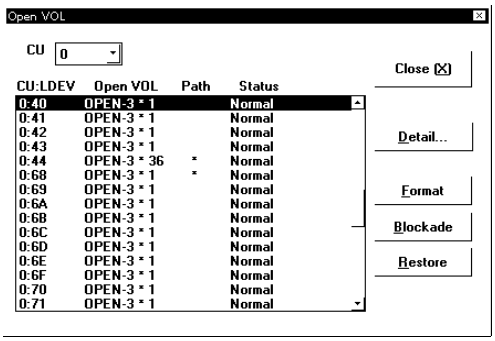
[1] FORMAT Open VOL

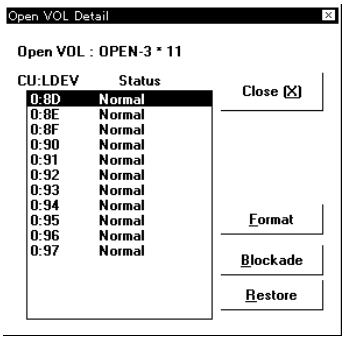
(1) Select (CL) Open VOL from the Open VOL list box in the 'Open VOL' window.



Format by LDEV unit:
Select (CL) [Detail] ---------- Go to (2)
Format by Open VOL:
Select (CL) [Format] ---------- Go to (3)
(It can select multiple items at once.)

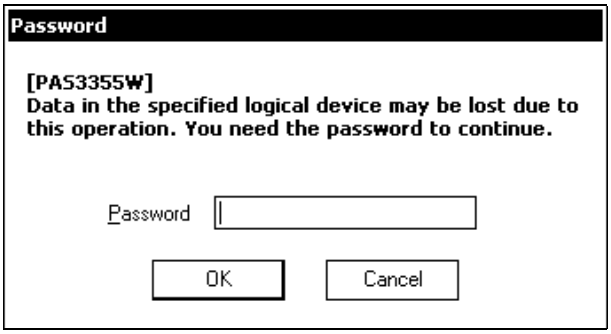
Note: Execute Format Open VOL after you confirm that the target Open VOL is blocked.

(2) Select (CL) LDEVs which you want to format from 'Open VOL Detail' window, and select (CL) [Format]. Go to (3).
(It can select multiple items at once.)



(3) "Data in the specified logical device may be lost due to this operation. You need the password to continue." is displayed.
Enter the password and select (CL) [OK].

Password is needed for this operation.
Please call Technical Support Center to obtain the password and authorization.



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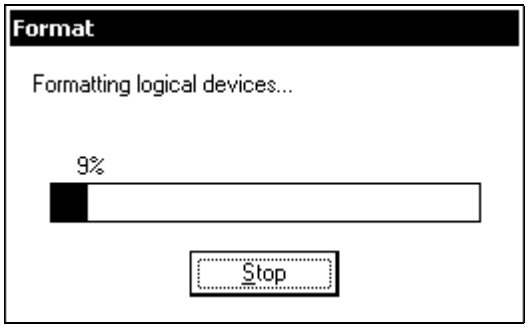
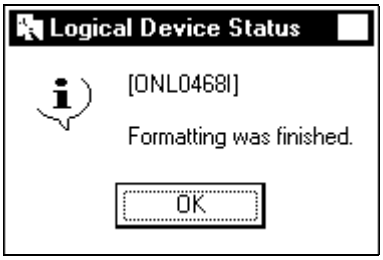
(4) “Formatting the logical device...” is displayed.



(5) Select (CL) [OK] in response to “Formatting was finished.”.



(6) Select (CL) [Close] in the ‘Open VOL’ window.
Close the ‘Maintenance’ window.

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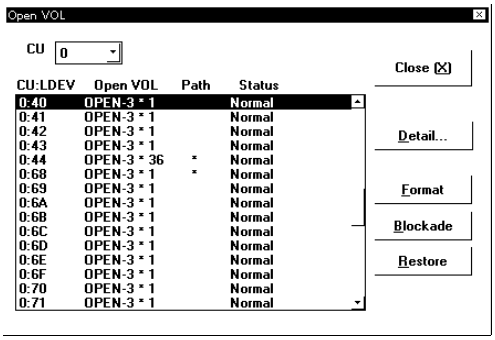
[2] Block Open VOL

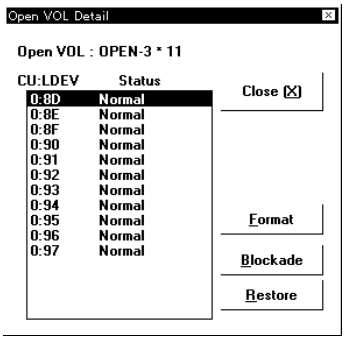
(1) Select (CL) Open VOL from the Open VOL list box in the 'Open VOL' window.

Blocked by LDEV unit:
Select (CL) [Detail] ---------- Go to (2)
Blocked by Open VOL:
Select (CL) [Block] ---------- Go to (3)
(It can select multiple items at once.)

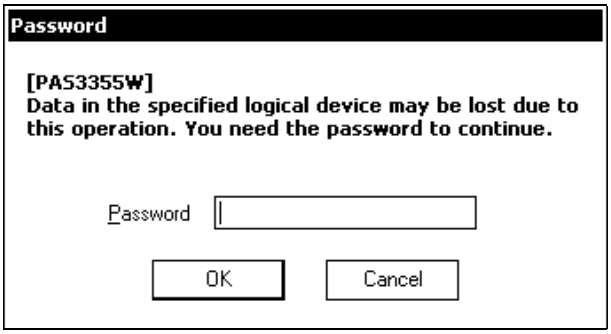
Note: Execute Format Open VOL after you confirm that the target Open VOL is blocked.



(2) Select (CL) LDEVs which you want to block from the 'Open VOL Detail' window, and select (CL) [Blockade]. Go to (3).
(It can select multiple items at once.)



(3) "Data in the specified logical device may be lost due to this operation. You need the password to continue." is displayed.
Enter the password and select (CL) [OK].
Password is needed for this operation.
Please call Technical Support Center to obtain the password and authorization.



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(4) “Blocking the logical device...” is displayed.

(5) Select (CL) [OK] in response to “Blocking the logical device is completed.”.

(6) Select (CL) [Close] in the ‘Open VOL’ window.
Close the ‘Maintenance’ window.

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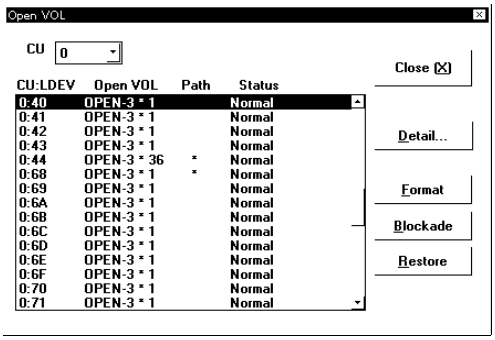
[3] Restore Open VOL

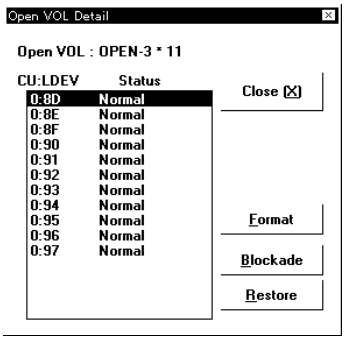
(1) Select (CL) Open VOL from the Open VOL list box in the 'Open VOL' window.



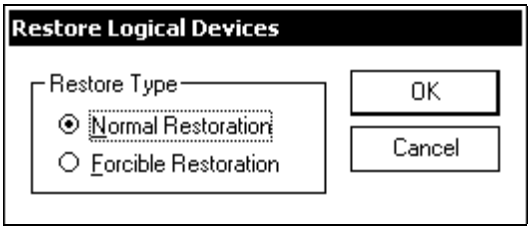
Restore by LDEV unit:
Select (CL) [Detail] ---------- Go to (2)
Restore by Open VOL:
Select (CL) [Restore] ---------- Go to (3)
(It can select multiple items at once.)

Note: Execute Restore Open VOL after you confirm that the target Open VOL is blocked.

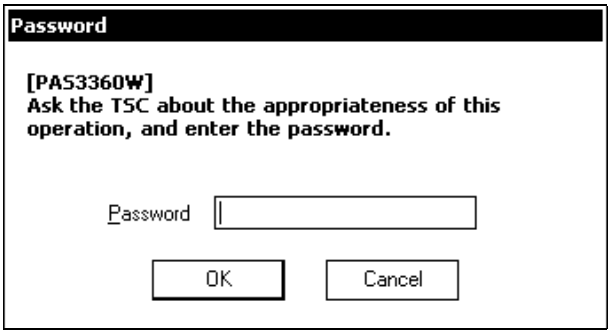
(2) Select (CL) LDEVs which you want to restore from the 'Open VOL Detail' window, and select (CL) [Restore]. Go to (3).
(It can select multiple items at once.)



(3) Select (CL) the corresponding item from the Restore Type in the 'Restore Logical Devices' window and select (CL) [OK].



If "Forcible Restoration" is selected, the message "Ask the TSC about the appropriateness of this operation, and enter the password." is displayed.
Enter the password and select (CL) [OK].
Password is needed for this operation.
Please call Technical Support Center to obtain the password and authorization.



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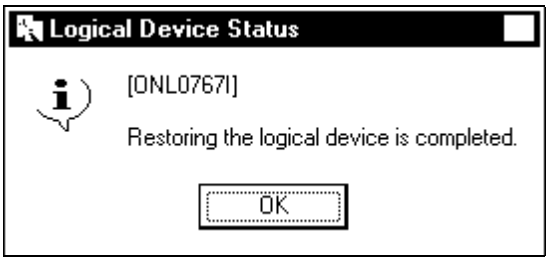
(4) “Restoring...” is displayed.

(5) Select (CL) [OK] in response to “Restoring the logical device is completed.”.



(6) Select (CL) [Close] in the ‘Open VOL’ window.
Close the ‘Maintenance’ window.

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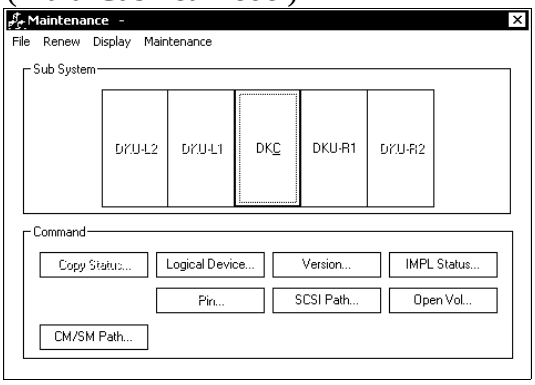
2.12 Pin Data indication

Prerequisite operation

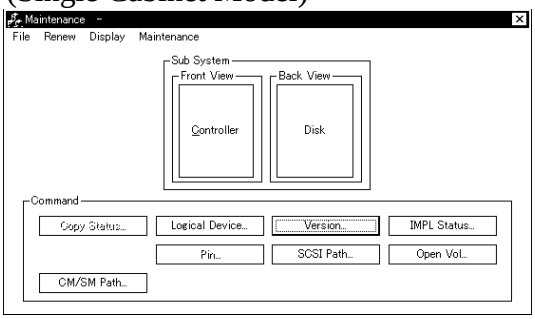
(1) Select (CL) [Maintenance].

(2) Select (CL) [PIN] in the ‘Maintenance’ dialog box.

(Multi Cabinet Model)



(Single Cabinet Model)



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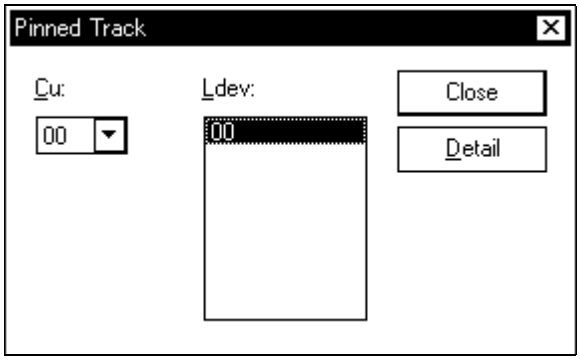
(3) To displaying the LDEVs which has Pin Slots, select (CL) a LDEV in the 'Pin Volume' dialog box and select (CL) [Detail...].

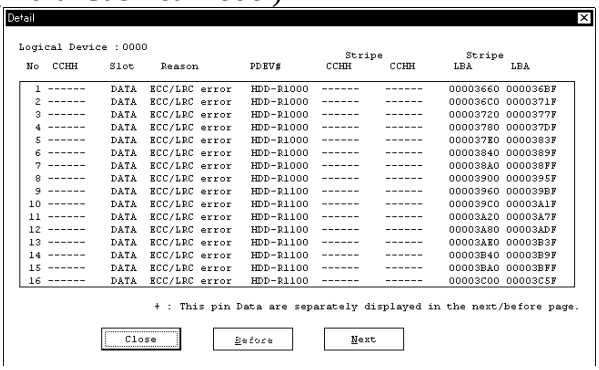
Note: After Pin Slot recovers, the LDEV reported as Pin Slot SIM will not be displayed in the box.



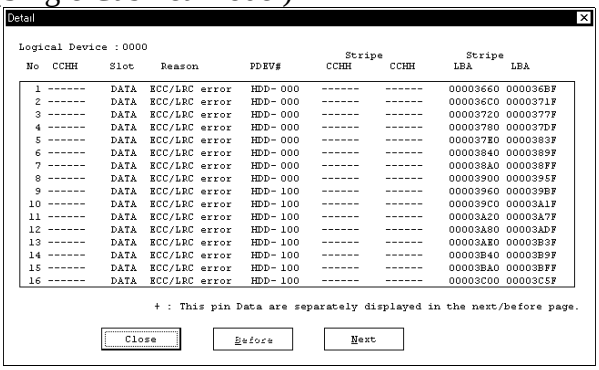
(4) Display the detail of a Pin Slot.
If there are more than 17 Pin Slots, the [Next] button will display other Pin Slots.)

Note: If a Pin Slot has some recoverable trouble, the detail of the Pin Slot will not be displayed. In case of OPEN-LDEV, only LBA's Pin Slots are displayed. But, if the Pin Slot of LBA's can't be displayed, "-----" is displayed in both CCHH and LBA columns.

(Multi Cabinet Model)



(Single Cabinet Model)



(5) Select (CL) [Close] in the 'Detail' dialog box.
Select (CL) [Close] in the 'Pin Volume' dialog box.
Close the 'General Status' window.

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2.13 Multi PCB Replace

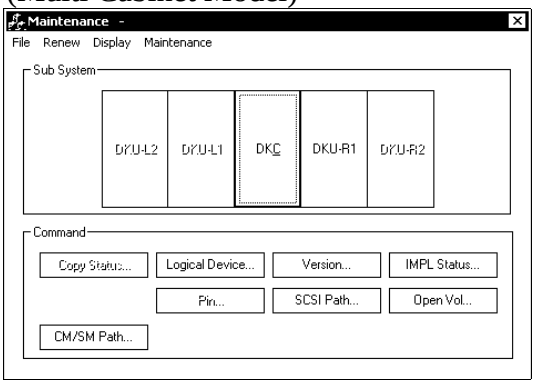
(1) <Set path offline>
Set the path offline from HOST when replacing CHA.

(2) <Maintenance>
The 'Maintenance' window is displayed.

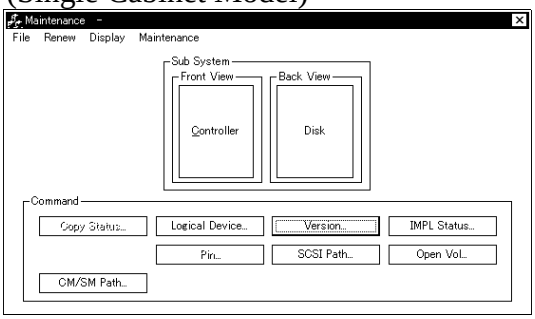
(Multi Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Single Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



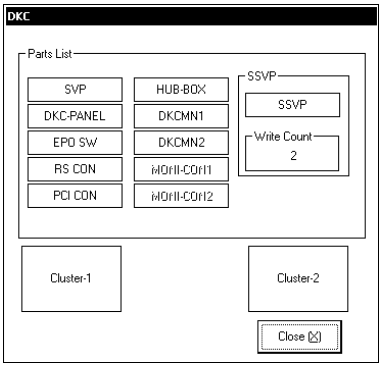
(Single Cabinet Model)



(3)

(Multi Cabinet Model)
<DKC window>
Select (CL) [Cluster-n] in the 'DKC'.

(Single Cabinet Model)
<Controller window>
Select (CL) [Cluster-n] in the 'Controller'.



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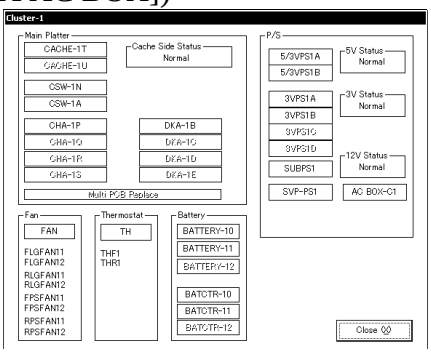
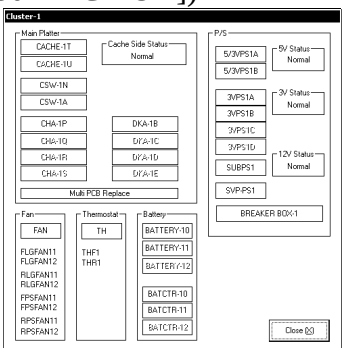
(4) <Select Multi PCB Replace>
Select (CL) [Multi PCB Replace].
Selecting (CL) [Close] returns you to step (3).

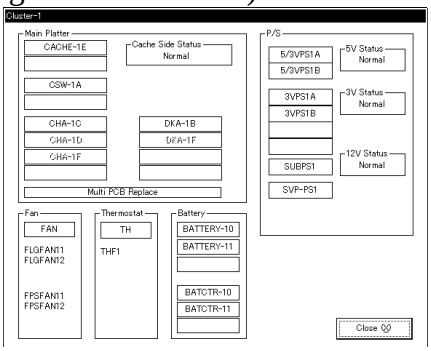
(Multi Cabinet Single Phase Model, Multi Cabinet 3 Phase Model [30A AC BOX])



(Multi Cabinet 3 Phase Model [Without 30A AC BOX])



(Single Cabinet Model)



(ex. Cluster-1)

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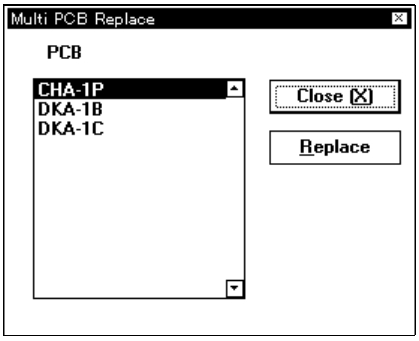
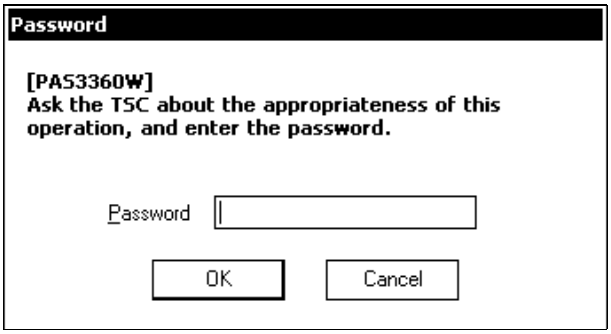
(5) <Select CHA/DKA>
Select (CL) CHA/DKA PCB.
Select (CL) [Replace].



Notice:
When the subsystem is placed online, ask the customer to place it offline.

Notice:
When the screen prompting an operator to input a password in order to prevent multiple maintenance, contact the technical support center to ask for instructions.

(6) <Enter Password>
Enter the password in response to [Password?] and select (CL) [OK].



Notice
Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

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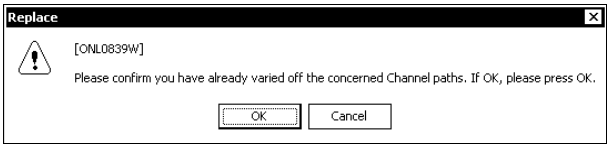
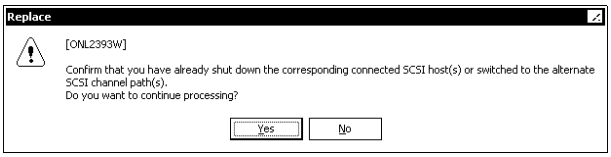
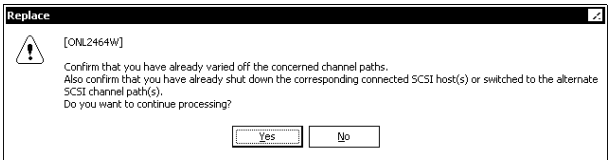
(7) <Confirm Channel Path offline>
Select (CL) [OK] in response to
"Please confirm you have already varied off the concerned Channel paths. If OK, please press OK."



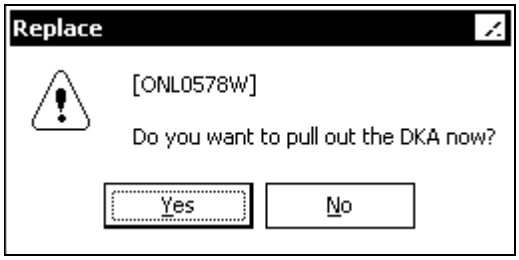
If a Fibre channel adapter is installed:
After you confirm that you have stopped concerned SCSI Channel paths, select (CL) [Yes].



CHA and CHA (SCSI) exist:
After you confirm that you have stopped concerned Channel paths and SCSI channel paths, select (CL) [Yes].



(8) <Caution message for system down>



Notice
Select (CL) [Yes] in response to the message below.

"Automatic subsystem check for error prevention will be performed when blocking target the PCB.
Yes = Normal replacement
No = Forcible replacement
(Possible critical errors)"

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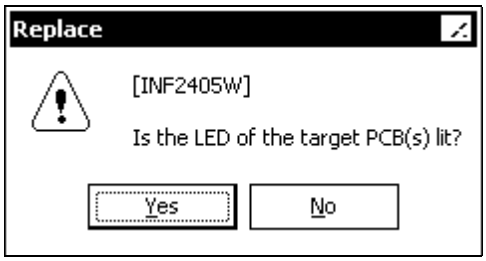
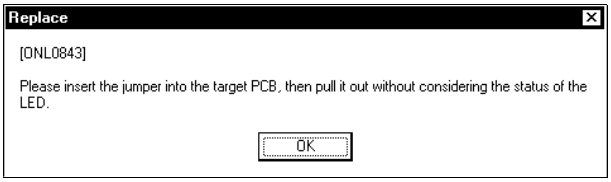
(9) <CHA/DKA blocking>
* For CHA
"The CHA-xx is being blocked..."
* For DKA
"The DKA-xx is being blocked..."

(10) <Check to see if shut down LED is lit>
Select (CL)
* [Yes] if LED is on
* [No] if LED is off
in response to "Is the LED of the target PCB(s) lit?".
If [No] is selected:
Select in response to "Is the LED of the target PCB(s) lit?" again.



Notice
If the jumper is inserted in the wrong PCB, a system down may occur.

<Forcing shut down LED on>
If [No] is selected twice:
Insert a jumper in response to "Please insert jumper into the target PCB, then pull it out without considering the status of the LED".



For CHA (SERIAL) HARDWARE C (REP03-80)
For FIBRE HARDWARE D (REP03-110)
For DKA HARDWARE E (REP03-140)

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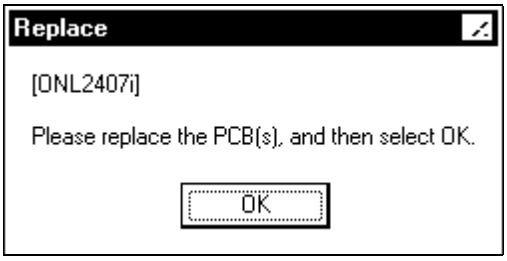
(11) <Beginning of CHA / DKA Replacement>

"Please replace the PCB(s), and then select OK." is displayed.

Select (CL) [OK] after replacing the PCBs.



For CHA (Serial) Go to HARDWARE C (REP03-80)
For FIBRE Go to HARDWARE D (REP03-110)
For DKA Go to HARDWARE E (REP03-140)

(12)

Select (CL) [OK] in response to "Please replace the PCB(s). After replacement, please press OK."

"Waiting for Power Event... Usually, several minutes (maximum 10 minutes)" is displayed.

(13) <Check the recovery processing>

The following message is displayed:

* For DKA

"Restoring the DKA-xx..."

"DKA-xx is being path recovered..."

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(14) <Check the end of CHA/DKA recovery>
Select (CL) [OK] in response to “Replace finished.”.

Notice
When one or more PCBs are replaced normally, “Replace finished.” will be displayed. So please confirm PCBs’ status.

(15) <Path on-line when CHA is replaced>
Whenever a CHA is replaced, set the path (from the host) on the replaced CHA to ONLINE by your customer.

(16) <SIM Complete>
Go to SVP02-580.

(17)
Close the ‘Multi PCB Replace’ window.
Close the ‘Cluster-n’ window.
Close the ‘Maintenance’ window.

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2.14 System Option

[Overview]

Change the following system option when the system operates.

<1> Spare Disk Recovering - Select the performance density when data is copied to a spare disk. (correction copy and drive copy)

- Interleave : Everytime 4-slot copy is completed, copy job sleeps for the time dependent on load of HOST I/O.
- Offline : No sleep. (No considering HOST job)

NOTICE
Please do not use if no channel paths is varied offline.

<2> Disk Copy Pace --------- Specification of copy pace is supported with the "Interleave" mode at Spare Disk Recovering. Three modes are supported.

- Medium : Optimization mode. The copy time depends on load of HOST I/O.
- Faster : Copy job is prior to HOST job.
- Slower : HOST job is prior to copy job.

<3> Copy Operation ----------

- Dynamic Sparing : Copy automatically to a spare disk if disk failure exceeded the threshold value.
- Correction Copy : Execute correction copy to a spare disk automatically when one drive has blocked.

<4> Read Configuration Data Mode
---------- To change the method of adding S/N which DKC reports by the Read Configuration Data command.

- OFF : Compatible method
- ON : 4096 support method (default)

<5> PS Off Timer ---------- Enters the Destage time. (25 [min])

- OFF : The Destage time is effectively.
- ON : The Destage time is ineffectively, and change the Destage time.

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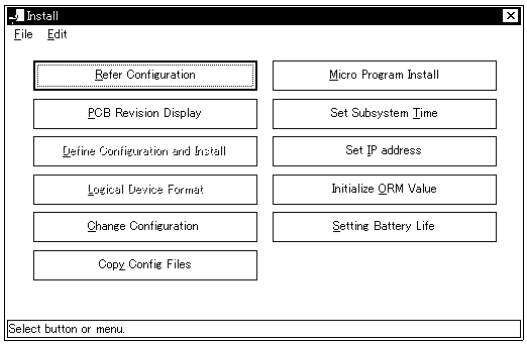
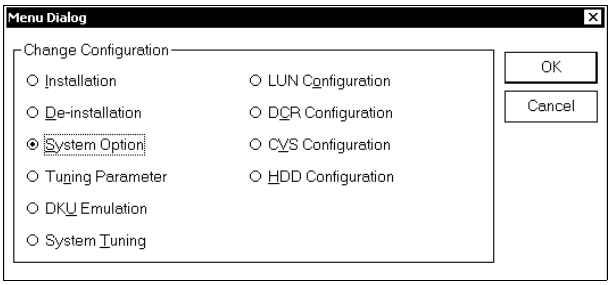
(1) Select (CL) [Install].

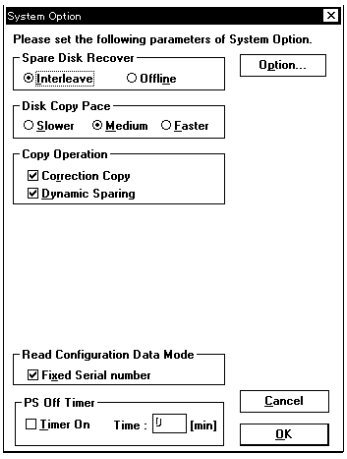
(2) Select (CL) the [Change Configuration] menu in the 'Install' window and select (CL) [OK].



(3) Select (CL) the [System Option] menu in the 'Menu Dialog' window and select (CL) [OK].



(4) Select (CL) the desired item in the 'System Option' dialog box, and select (CL) [OK].



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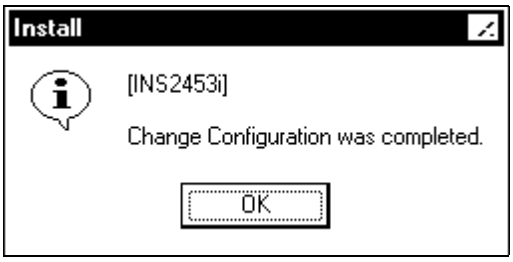
(5) “Loading configuration...” is displayed.

(6) “Change configuration was completed.” is displayed.
Select (CL) [OK].



(7) “Reading subsystem configuration data...” is displayed.
“Please insert the Config FD in the FDD.” is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

(8) When this procedure is completed, the message “Please remove the Config FD.” is displayed.
Remove the FD, select (CL) [OK].

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(9) Close the ‘Install’ window.

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2.15 Blocking of Cluster

CAUTION

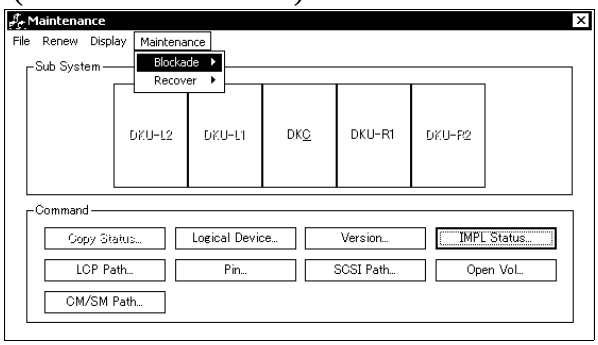
These following procedure is very special. Please ask your TSC if you can do.

The following windows demonstrate with blocking of Cluster-1 for an example.

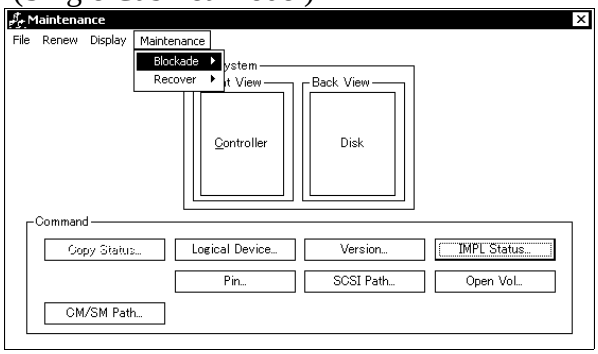
1. Select (CL) [Maintenance].

2. Select (CL) the [Maintenance] menu in the 'Maintenance' dialog box and select(DR) [Blockade].

(Multi Cabinet Model)



(Single Cabinet Model)



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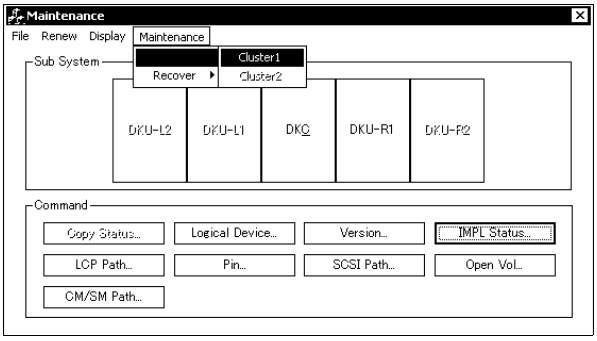
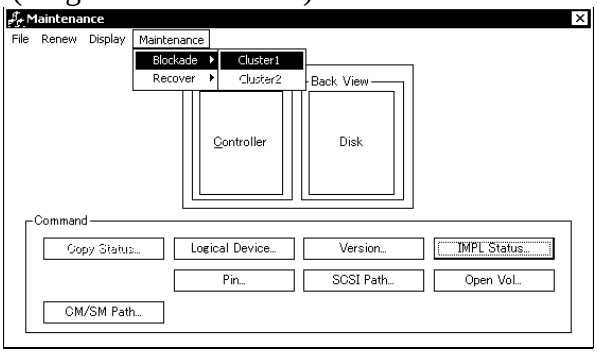
3. Select (DR) the [Cluster-n] to be blocked.

(Multi Cabinet Model)



(Single Cabinet Model)



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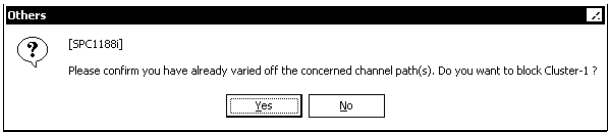
4. Beginning Block

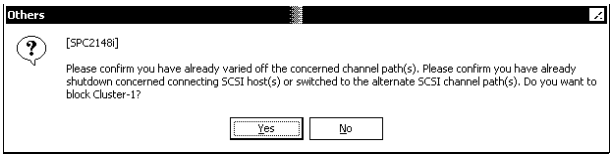
• When only serial or parallel channels, or they are mixed.

Select [Yes] (CL) in response to “Please confirm you have already varied off the concerned channel path(s). Do you want to block xxxxx?”.



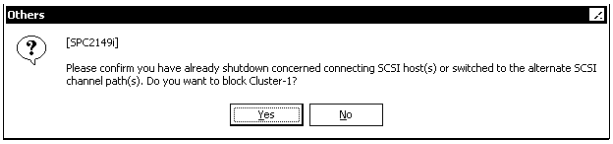
• When SCSI channels and other kinds are mixed.

Select [Yes] (CL) in response to “Please confirm you have already varied off the concerned channel path(s). Please confirm you have already shutdown concerned connecting SCSI host(s) or switched to the alternate SCSI channel path(s). Do you want to block xxxxx?”.



• When only SCSI channels are installed.

Select [Yes] (CL) in response to “Please confirm you have already shutdown concerned connecting SCSI host(s) or switched to the alternate SCSI channel path(s). Do you want to block xxxxx?”.



Valid xxxxx values are listed below.

• Cluster-1
• Cluster-2

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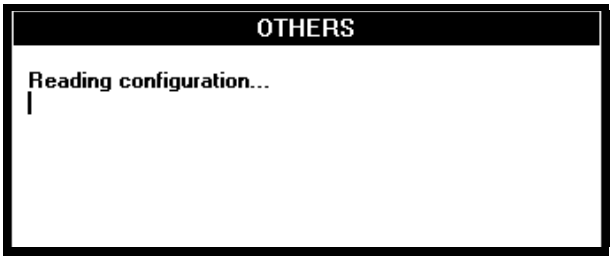
5. Processing to Cluster block.



"Reading configuration..."
"Blocking cache memory..."
"Blocking shared memory..."
"Blocking CHA..."
"Blocking CHP..."
"Blocking DKA..."
"Blocking DKP..."
"Blocking CSW..."
"Blocking Cluster failure report..."
"Processing to disable the environment check..."

6. End of Cluster block
Select [OK] (CL) in response to "The blockade has finished. Cluster is blocked.".

7. Close the 'Maintenance' window.

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2.16 Recovering of Cluster

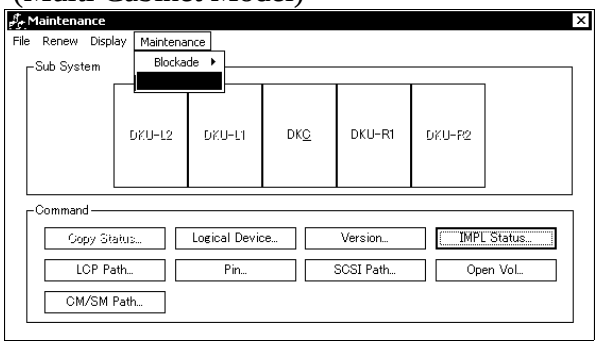
Note: Before recovering of Cluster, please reboot SVP.

The following windows demonstrate with blocking of Cluster-1 for an example.

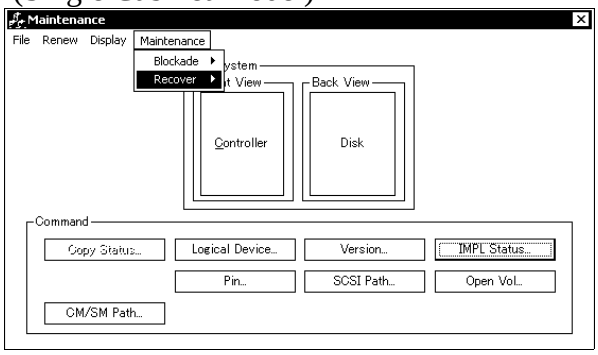
1. Select (CL) [Maintenance]

2. Select (CL) the [Maintenance] menu in the 'Maintenance' and select(DR) [Recover].

(Multi Cabinet Model)



(Single Cabinet Model)



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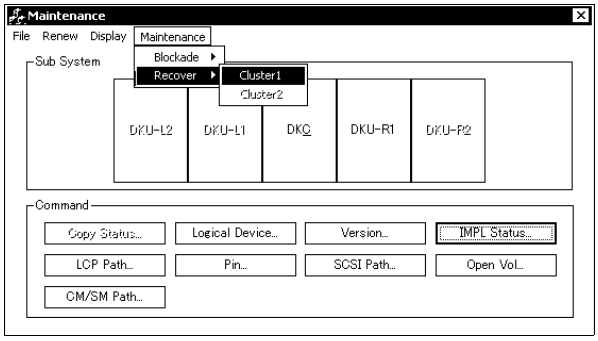
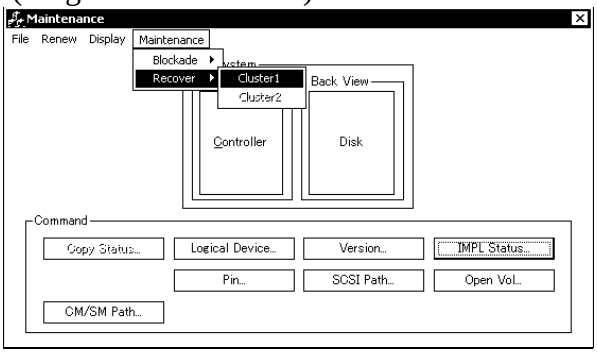
3. Select (DR) [Cluster-n] to be recovered.

(Multi Cabinet Model)

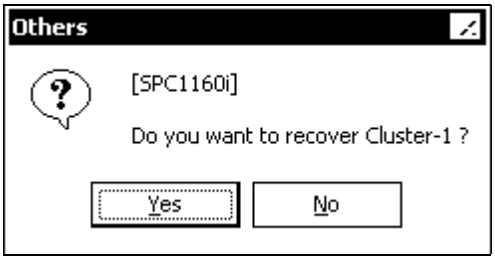


(Single Cabinet Model)



4. Beginning Recover

Select [Yes] (CL) in response to “Do you want to recover xxxx?”.



Valid xxxx values are listed below.

- Cluster-1
- Cluster-2

If Cluster 1/2 is fail.	Go to 5
If Cluster 1/2 is blockade.	Go to 8
If Cluster 1/2 is normal.	Go to 9

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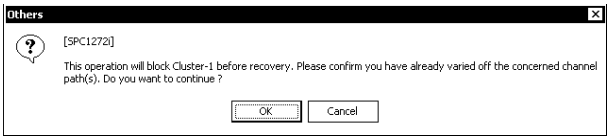
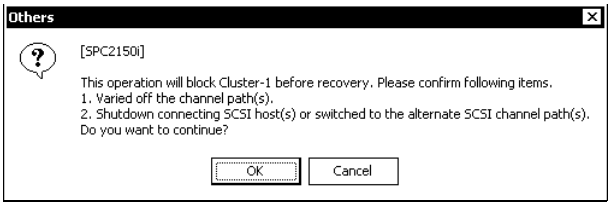
5. Confirm varied Off-line.

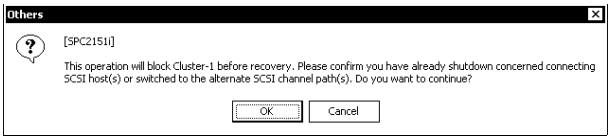
• When only serial or parallel channels, or they are mixed.
Select [OK] (CL) in response to “This operation will block xxxxx before recovery. Please confirm you have already varied off the concerned channel path(s). Do you want to continue?”.



• When SCSI channels and other kinds are mixed.
Select [OK] (CL) in response to “This operation will block xxxxx before recovery. Please confirm following items.
1. Varied off the channel path(s).
2. Shutdown connecting SCSI host(s) or switched to the alternate SCSI channel path(s).
Do you want to continue?”.



• When only SCSI channels are installed.
Select [OK] (CL) in response to “This operation will block xxxxx before recovery. Please confirm you have already shutdown concerned connecting SCSI host(s) or switched to the alternate SCSI channel path(s). Do you want to continue?”.



Valid xxxxx values are listed below.
• Cluster-1
• Cluster-2

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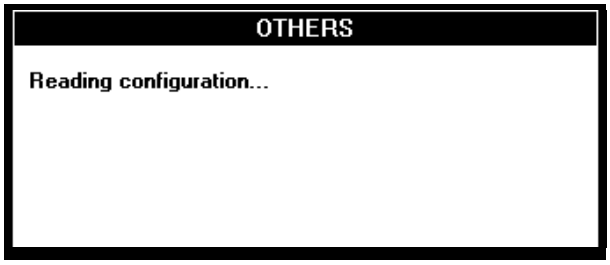
6. Processing to Cluster block.



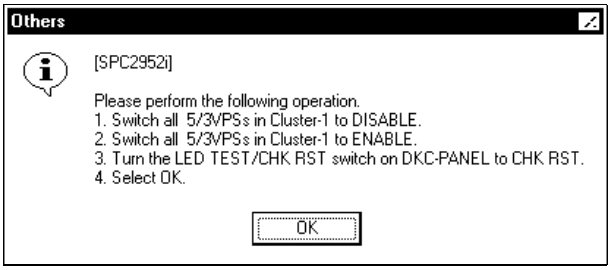
"Reading configuration..."
"Checking status of Cluster..."
"Blocking Cluster..."
"Blocking cache memory..."
"Blocking shared memory..."
"Blocking CHA..."
"Blocking CHP..."
"Blocking DKA..."
"Blocking DKP..."
"Blocking CSW..."
"Blocking Cluster failure report..."
"Processing to disable the environment check..."

7.

⚠ CAUTION

- In this step, operate only 5/3VPSxA, 5/3VPSxB in this cluster.
- Do not operate other PSs, or it might cause subsystem down or parts failure.
- This operation makes SUBSYSTEM ALARM LED on, ignore it because the operation of the LED TEST/CHK RST Switch makes it off.

Select [OK] (CL) response to
"Please perform the following operation.
1.Switch all 5/3VPSs in Cluster-X to DISABLE.
2.Switch all 5/3VPSs in Cluster-X to ENABLE.
3.Turn the LED TEST/CHK RST switch on DKC-PANEL to CHK RST.
4.Select OK.".



Valid X values are listed below.
- Cluster-1 --- 1
- Cluster-2 --- 2

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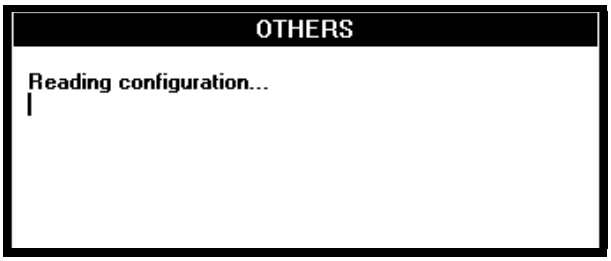
8. The SVP automatically checks the power supplies to determine if cluster is recoverable.

9. Processing to Cluster recover.



"Reading configuration..."
"Checking status of Cluster..."
"Restoring Cluster..."
"Checking Power on..."
"Waiting for Power Event...
Usually, several minutes(maximum 15 minutes)"
"Reading configuration..."
"Restoring DKA (PDEV Spin up)..."
"Restoring DKP Path..."
"Restoring Cluster failure report..."
"Setting C-Port register..."
"Running INLINE CUDG..."
"Running CSW Path test..."
"Restoring shared memory..."
"Restoring cache memory..."
"Processing to enable the environment check..."

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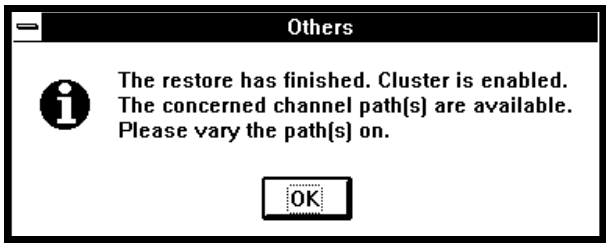
10. End of Cluster Recover

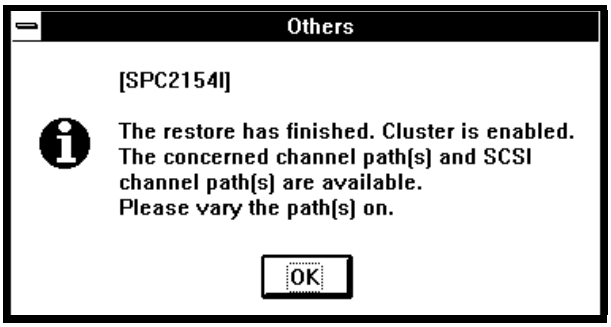
• When only serial or parallel channels, or they are mixed.

Select (CL) [OK] in response to “The restore has finished. Cluster is enabled. The concerned channel path(s) are available. Please vary the path(s) on.”.



• When SCSI channels and other kinds are mixed.

Select (CL) [OK] in response to “The restore has finished. Cluster is enabled. The concerned channel path(s) and SCSI channel path(s) are available. Please vary the path(s) on.”.



• When only SCSI channels are installed.

Select (CL) [OK] in response to “The restore has finished. Cluster is enabled. The concerned SCSI channel path(s) are available.”.

11. Close the ‘Maintenance’ window.

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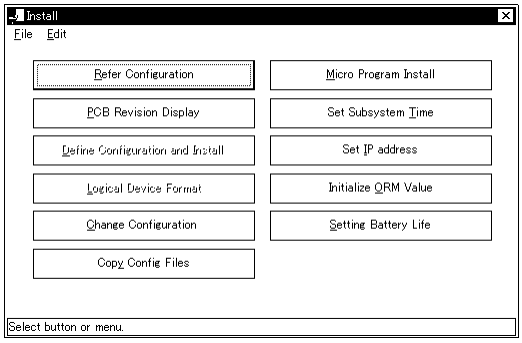
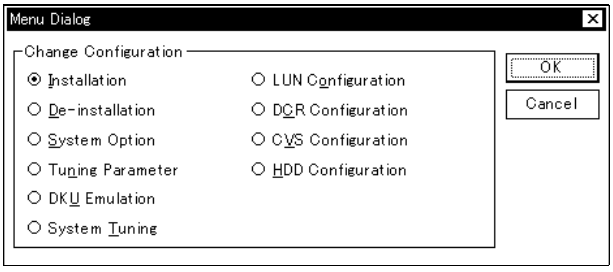
2.17 HDD Configuration

(1) Select (CL) [Install].

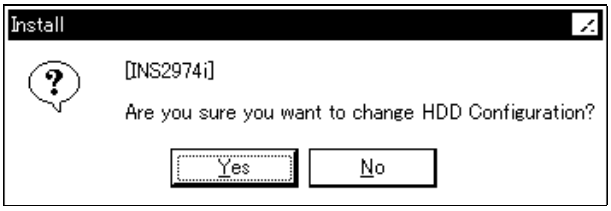
(2) Select (CL) [Change Configuration] on the 'Install' map screen in the 'Install' screen.



(3) Select (CL) [HDD Configuration] on the 'Menu Dialog' screen, and select (CL) [OK].



(4) Select (CL) [Yes] in response to the message "Are you sure you want to change HDD Configuration?".



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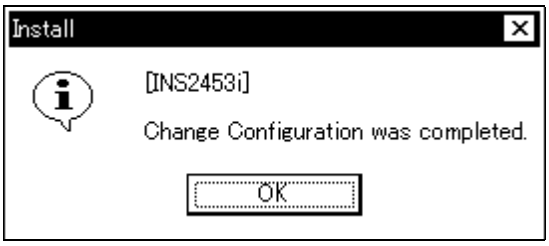
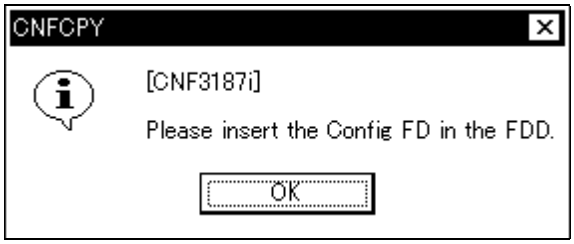
(5) The message “Loading Configuration...” is displayed.

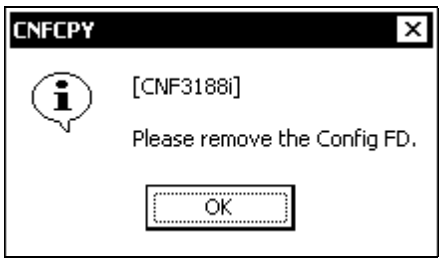
(6) Select (CL) [OK] in response to the message “Change Configuration was completed.” to terminate the processing.



(7) The message “Reading subsystem configuration data...” is displayed, and also the message “Please insert the Config FD in the FDD.” is displayed.
Insert Config FD into FDD and select (CL) [OK].



(8) After the completion of FD backup, the message “Please remove the Config FD.” is displayed.
Pull out FD from FDD and select (CL) [OK].



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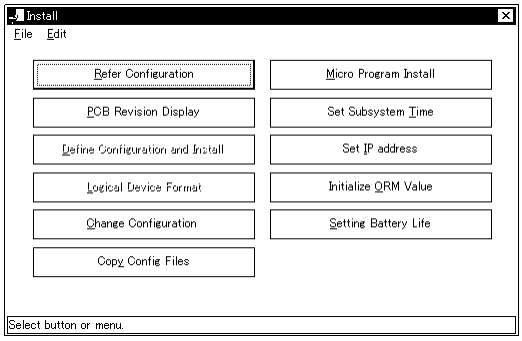
2.18 PCB Revision Display

(1) Select (CL) [Install] in the ‘SVP’ window.

(2) Select (CL) [PCB Revision Display] in the ‘Install’ window.



(3) ‘Reading or Writing PCB revision informations...’ is displayed.

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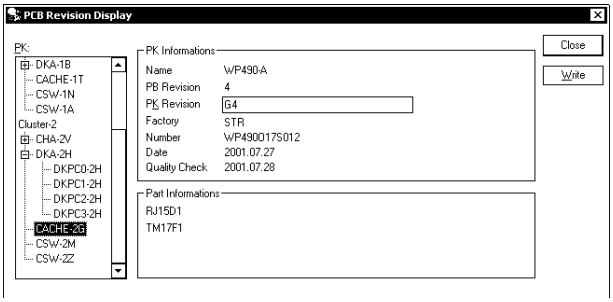
(4) Select a PCB whose revision you want to display in the 'PCB Revision Display' window.



- When [Write] is selected (CL) in the 'PCB Revision Display' window, the revision will be displayed again after the processing is completed.

(5) Select(CL) [Close] in the 'PCB Revision Display' dialog box.

(6) Close the 'Install' window.

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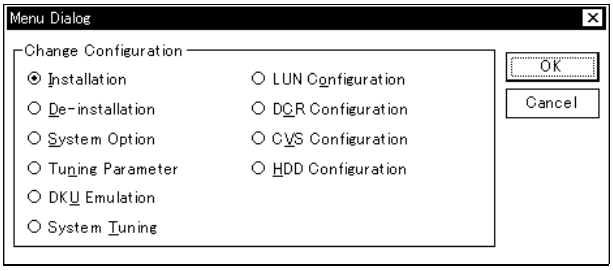
2.19 Tuning Parameter

(1) Exchange threshold information. (See MICRO-FC08-10)

(2) Select (CL) [Install].

(3) Select (CL) the [Change Configuration] menu in the 'Install' window and select (CL) [OK].

(4) Select (CL) the [Tuning Parameter] menu in the 'Menu Dialog' window and select (CL) [OK].



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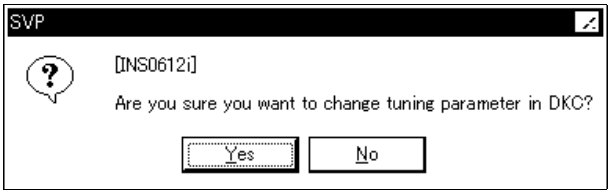
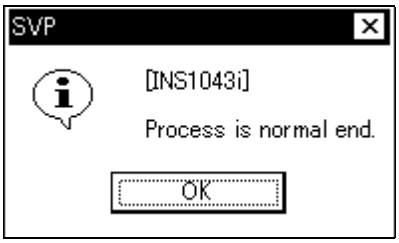
(5) Select (CL) [Yes] for a message of confirming.



(6) Select (CL) [OK] for a message of finishing.



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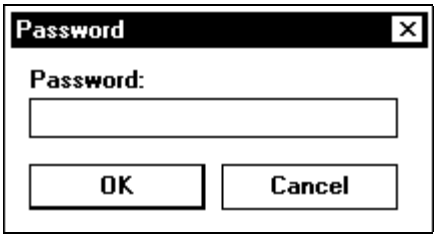
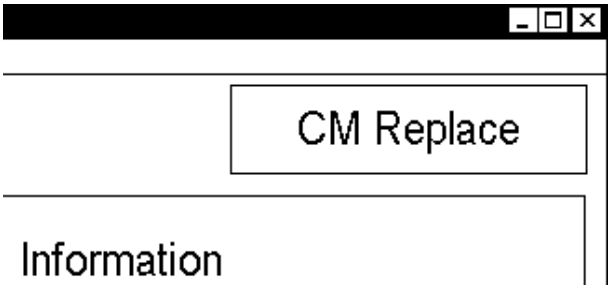
2.20 Change CM Module group size

1. Close the all SVP menu.

2. <Enter the password>
   Press “Shift+Ctrl+C” in the ‘SVP’ window.
   Enter the password, and select (CL) [OK].
   (Please call Technical Support Center for asking the password.)



3. <CM Replace Mode>
   ‘CM Replace’ is displayed.
   Select (CL) [Maintenance].



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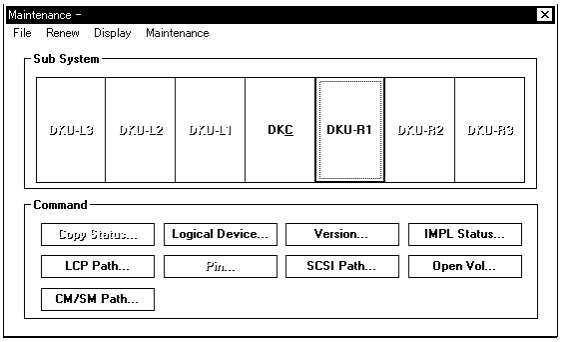
4. <Maintenance window>
The 'Maintenance' window is displayed.

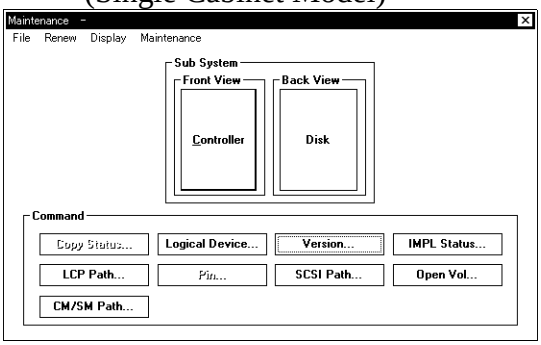
(Multi Cabinet Model)
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



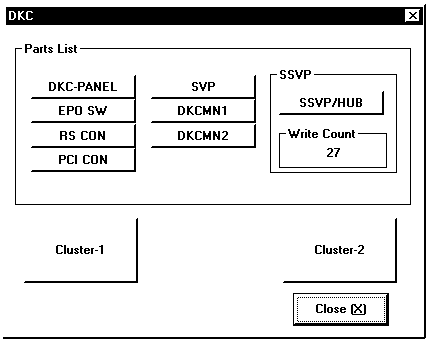
(Single Cabinet Model)



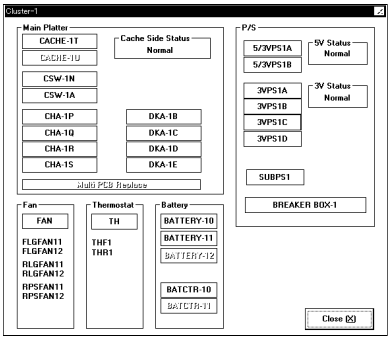
5.

(Multi Cabinet Model)
<DKC window>
Select (CL) [Cluster-n] in the 'DKC'.

(Single Cabinet Model)
<Controller window>
Select (CL) [Cluster-n] in the 'Controller'.



6. <Select Cache>
Select (CL) the appropriate part.



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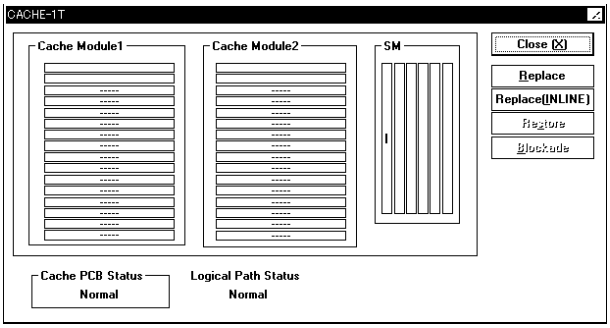
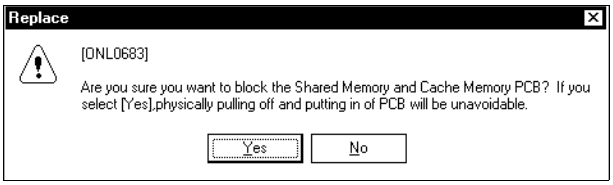
7. <Replace>
   Check status display.
   Select (CL) [Replace].



8. <Change the Cache Memory Module Size>
   Select (CL) the module size in the 'Cache Memory Module Size Mode', and select (CL) [OK].

9. <Check beginning of cache blocking>
   Select (CL) [Yes] after making sure that the package to be blocked is correct in response to:
   "Are you sure you want to block the Shared Memory and Cache Memory PCB? If you select [Yes], physically pulling off and putting in of PCB will be unavoidable."



10. <Cache blocking>
    "The Cache Memory PCB is being blocked." is displayed.
    "The Shared Memory PCB is being blocked…" is displayed.

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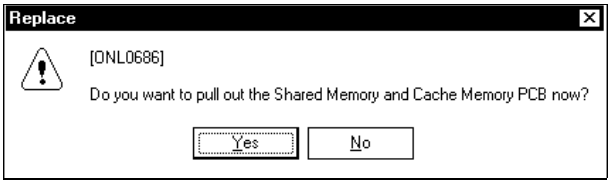
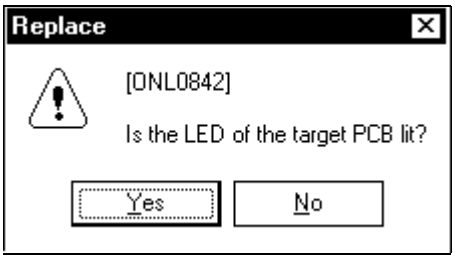
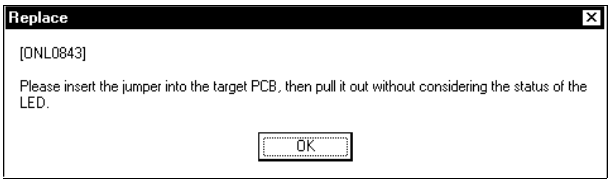
11. <Check removal of cache>
Select (CL) [Yes] in response to:
"Do you want to pull out the Shared Memory and Cache Memory PCB now?"



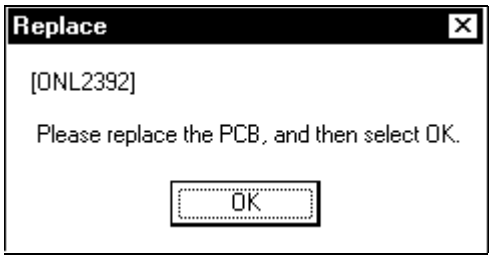
12. <Check shut down LED>
Select (CL)
* [Yes] if LED is on
* [No] if LED is off
in response to "Is the LED of the target PCB lit?".



<Forcing shut down LED on>
If [No] is selected:
Insert a jumper in response to "Please insert jumper into the target PCB, then pull it out without considering the status of the LED".
(Refer REP03-60)
Go to step 9.



13. <Cache Replacement>
"Please replace the PCB, and then select OK." is displayed.
(Select (CL) [OK] after replacing the PCB.)



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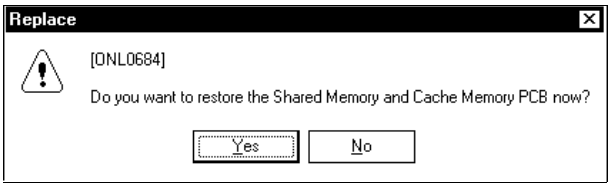
14. <Replace cache PCB>
    Replace the cache.

    See HARDWARE B (REP03-50).

15. <Check the beginning of cache/SM recovery>
    Select (CL) [Yes] in response to:
    "Do you want to restore the Shared Memory and Cache Memory PCB now?"



16. <Restoring the Shared Memory>
    "Restoring the Shared Memory PCB..." is displayed.

17. <Restoring the Cache Memory>
    "Restoring the Cache Memory PCB..." is displayed.

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18. <Check the end of Cache/Shared Memory recovery>
Select (CL) [OK] in response to “Replace finished.”.

19.
Close the ‘CACHE-xx’ window.
Close the ‘Cluster-n’ window.
(If finishing in the Cluster-2 side, go to 21.)

20. <Change the Cache Memory module size in Cluster-2 side>
Perform steps 5 to 19.
Select [Cluster-2], and [CACHE-2G].

21.
Close the ‘DKC’ window.
Close the ‘Maintenance’ window.
Change the mode to [View Mode].

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2.21 Setting Battery Life

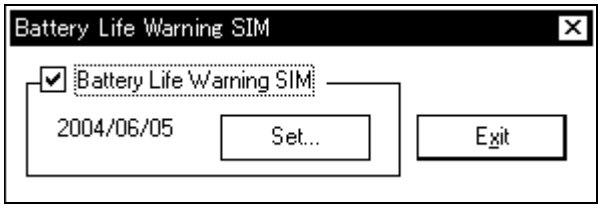
Set the Battery Life warning SIM to prompt to prepare the periodical exchange maintenance of a battery before the lifetime of the battery (2.5 years) equipped in the Subsystem.
Set the number of days remained until you generate [Battery Life Warning SIM] based on your maintenance plan.

1.

Select (CL) the [Setting Battery Life] menu in the 'Install' window.

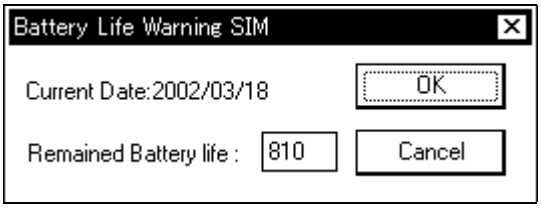
2.

Select [Set...] applying the check to 'Battery Life Warning SIM'.



3.

Select (CL) [OK] after inputting the remainder days until Warning SIM is reported.



Note 1: After executing the periodical exchange of a battery, set 27 month (810 days).

Note 2: Default value is 27 month (810 days), which is 3 month earlier than the lifetime of a battery (2.5 years).
Determine the number of days remained based on your maintenance plan.

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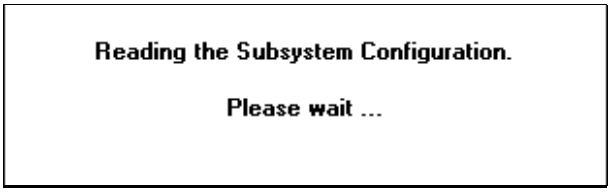
3 Activating and Terminating STATUS

3.1 Activating STATUS

(1) Select (CL) the [Maintenance] in the 'SVP' window.

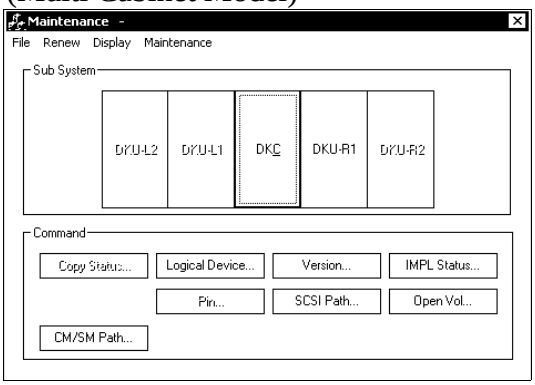
(2) The 'Maintenance' window will appear, on which the message "Reading the Subsystem Configuration. Please wait..." is displayed. Upon completion of reading the system configuration information, go to step (3). If a read error occurs, go to step (4) or (5).



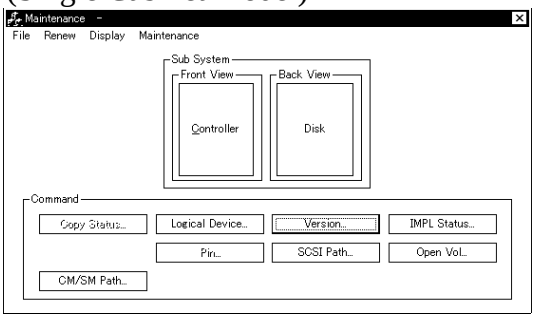
* : Please do not change an application's window until SVP-DKC communication finishes.

(3) The main screen shown on the right will appear the 'Maintenance' window, completing activation of STATUS.

(Multi Cabinet Model)



(Single Cabinet Model)



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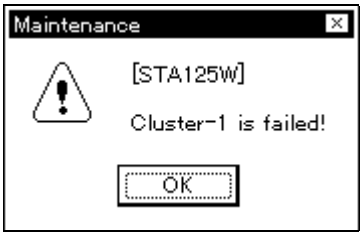
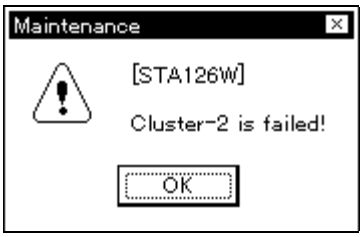
(4) If an error occurs, the nature of error is displayed.
"Cluster X is failed!"
X : 1 or 2
Select (CL) [OK].



If the status of power supplies is failure (refer to step SVP03-70), see TROUBLE SHOOTING SECTION (refer to step 3.2.7 (TRBL03-180)).

If the status of power supplies is normal (refer to step SVP03-70), see SVP SECTION (refer to step 2.16 (SVP02-1110)).



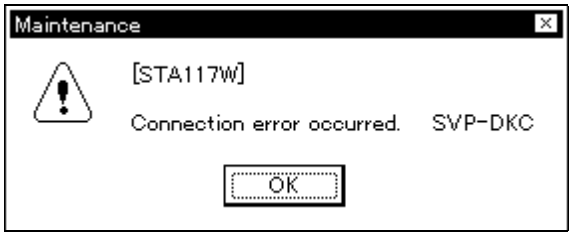
(5) If an error occurs, the nature of the error is displayed.

① "Connection error occurred. SVP-XXX" is displayed.
XXX : DKC or SSVP

② "Initializing SSVP (Phase X/16) Please Wait"
X : 1~16

③ "SSVP Dump is being performed (Phase X/15). Environment Status Can't be read."
X : 1~15

Select (CL) [OK].



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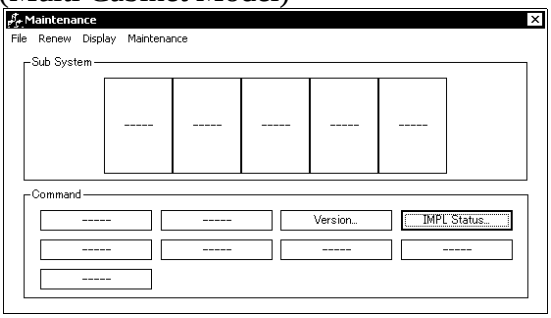
(6) The similar screen as in step (3) will appear, but buttons are indicated by "-----" to indicate an error. Terminate STATUS and remove the cause of the error. Then reactivate the STATUS.

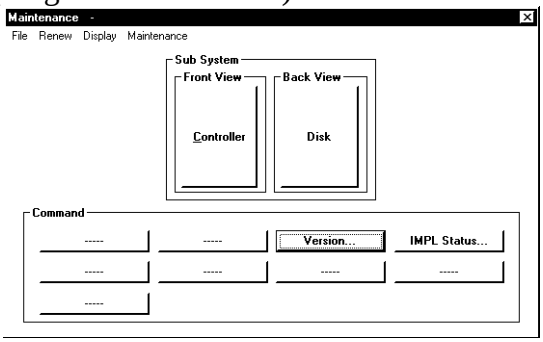
Note: When a communication error has occurred on either the SVP-DKC or the SVP-SSVP, the status that was taken through communication is displayed.
The example on the right is the screen displayed when a SVP-DKC and a SVP-SSVP communication error occurs.

* When a communication error has occurred on either SVP-DKC or SVP-SSVP, refer to the "5.3 Recovery Procedure for LAN Error (TRBL05-60)".

(Multi Cabinet Model)



(Single Cabinet Model)



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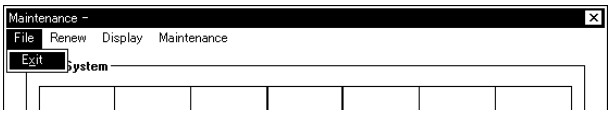
3.2 Terminating STATUS

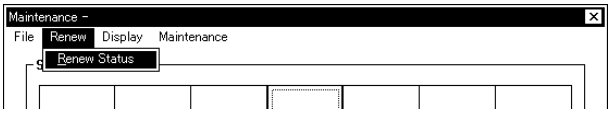
(1) Close the 'Maintenance' window.
Select (CL) [File] - [Exit] in menu bar on 'Maintenance'. (Screen on the right.)
or
Select (DC) Control Box at the left on the title bar.
or
Select (CL) Control Box - [Close].



3.3 Updating the STATUS display

The STATUS display remains unchanged while the screen is displayed or being switched.
To display the latest status, follow the procedure below.

(1) Select (CL) [Renew] - [Renew Status] in the menu bar on the main screen. (Screen on the right)



or

(2) Terminate STATUS and activate it again.

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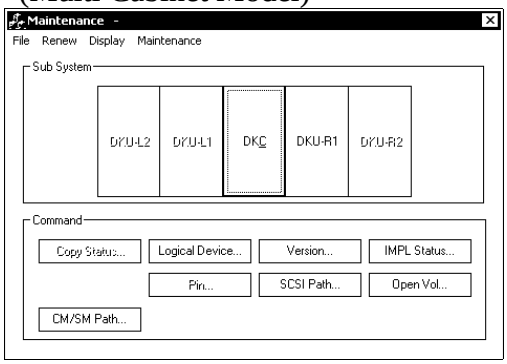
3.4 Main screen

After the STATUS is activated, the buttons on the 'Maintenance' window indicate each status as follows.

(Multi Cabinet Model)

(Multi Cabinet Model)



DKC..... Status of the DKC (Details are displayed on the lower layered screen.)

Valid button : Normal

Blinking button : Failure or under maintenance

DKU-R1,R2,R3,L1,L2,L3

..... Status of the DKU (Details are displayed on the lower layered screen.)

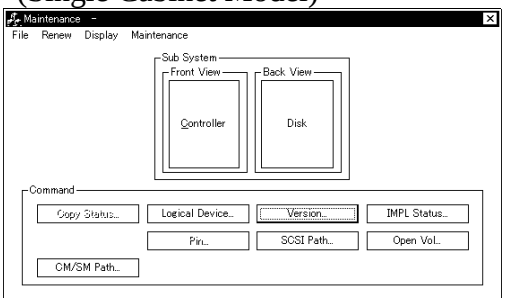
Valid button : Normal

Blinking button : Failure or under maintenance or during a copy operation

Invalid button : Non-mounted

(Single Cabinet Model)

(Single Cabinet Model)



Controller..... Status of the Controller (Details are displayed on the lower layered screen.)

Valid button : Normal

Blinking button : Failure or under maintenance

Disk..... Status of the Disk (Details are displayed on the lower layered screen.)

Valid button : Normal

Blinking button : Failure or under maintenance or during a copy operation

Invalid button : Non-mounted

Copy Status..... Status of copy work

Blinking button : Copy work is in progress. (Details are displayed on the lower layered screen.)

Invalid button : Copy work is not performed. (The lower layered screen is not provided.)

Logical Device... Logical device information is displayed on the lower layered screen.

Valid button : Normal

Blinking button : Failure or vender maintenance.

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Version..... Version information on the micro-program is displayed on the lower layered screen.

SCSI Path..... SCSI Path definition is displayed.

Pin..... Pinned Track is displayed.

IMPL Status..... IMPL Sequence codes each MP are displayed.

Main Frame Path .... LCP Path and HTP Path information are displayed on the lower layered screen.

Open Vol..... Open Volume information is displayed on the lower layered screen.
Valid button : Normal
Blinking button : Failure or vender maintenance.
No displayed : Non open volume

CM/SM Path..... CM/SM Path information is displayed on the lower layered screen.

The menus in the menu bar are explained below.

Renew ..... The configuration information is read. The status display is updated. (Select (CL) [Renew] - [Renew Status].)

File ..... The pull-down menu to terminate STATUS appears.
Selecting (CL) [Exit] terminates STATUS.

Display..... The pull down menu and select (CL) [PCBs Cluster1] or [PCBs Cluster2]. The 'Cluster' window will appear.

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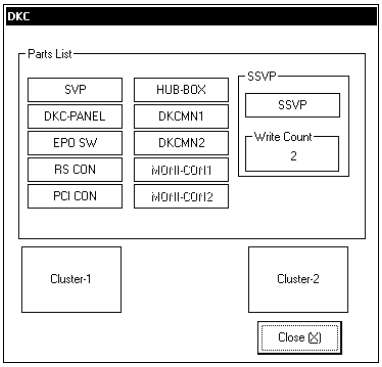
3.5 DKC (Controller)

(1) Status of DKC (Controller)
Select (CL) [DKC] ([Controller]) on the main screen.
The 'DKC' ('Controller') window will appear.



DKCMN-1 .....Status of DKCMN-1 and
DKCMN-2 DKCMN-2
Valid button : Normal
Blinking button : Failure

Cluster-1.....Status of Cluster-1 and Cluster-2
Cluster-2 (Details are displayed on the lower layered screen.)

DKC Panel .....Only part names are displayed.
EPO SW
SVP
SSVP/HUB
RS CON
PCI CON

Write Count.....Memory write Count of SSVP is displayed.

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(2) Status of Cluster-1 and Cluster-2
Select (CL) [Cluster-1] or [Cluster-2] in the 'DKC' window.
The 'Cluster-1/2' window will appear.

3VPSnA ..... Status of the power supplies
5V/3VPSnA
3VPSnB
5V/3VPSnB
3VPSnC
3VPSnD
SUBPSn
SVP-PSn

Valid button : Normal
Blinking button : Failure

BREAKER BOX-n .. Only Breaker Box names are displayed.

AC BOX-Xn ..... Only AC Box names are displayed.

5V Status ..... Status of the 5 voltage

3V Status ..... Status of the 3 voltage

12V Status ..... Status of the 12 voltage
- Normal
- Warning (abnormal)

FLGFANn1 ..... Status of the fans
FLGFANn2
RLGFANn1
RLGFANn2
RPSFANn1
RPSFANn2

Valid button : Normal
Blinking button : Failure

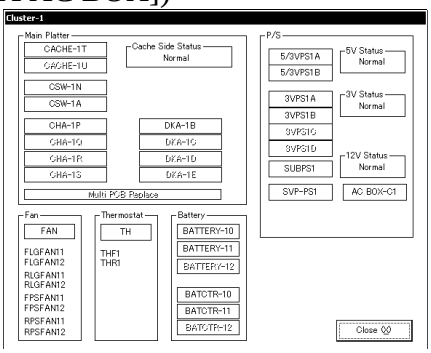
THFn ..... Status of the temperature
THRn

Valid button : Normal
Blinking button : Abnormal

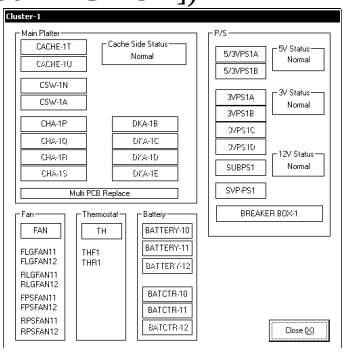
BATTERY-n0 ..... Status of the expanded power supplies
BATTERY-n1
BATTERY-n2
BAT-CTR-n0
BAT-CTR-n1

Valid button : Normal
Blinking button : Abnormal

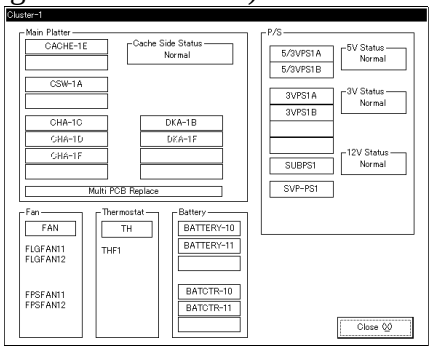
(Multi Cabinet Single Phase Model, Multi Cabinet 3 Phase Model [30A AC BOX])



(Multi Cabinet 3 Phase Model [Without 30A AC BOX])



(Single Cabinet Model)



(ex. Cluster-1)

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Cache Side Status..... Status of the Cache Side
- Normal
- Warning (abnormal)
- Failed (blocked due to a failure)
- Blocked (blocked for maintenance)

CACHE-nx..... Status of Cache (Details are displayed on the lower layered screen.)
Valid button : Normal
Blinking button : Failure or under maintenance
Invalid button : Non-mounted

CHA-nx..... Status of the CHA (Details are displayed on the lower layered screen.)
Valid button : Normal
Blinking button : Abnormal
Invalid button : Non-mounted

DKA-nx..... Status of the DKA (Details are displayed on the lower layered screen.)
Valid button : Normal
Blinking button : Abnormal
Invalid button : Non-mounted

The number n is ‘1’ for cluster 1 or ‘2’ for cluster 2.

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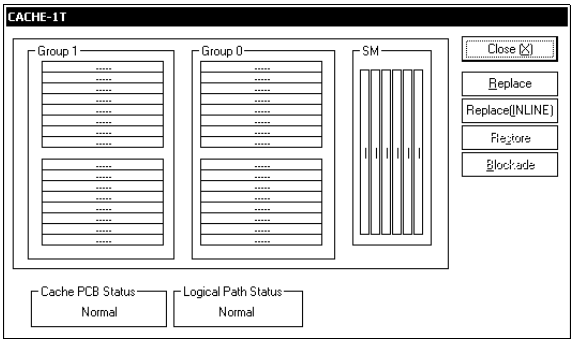
(3) Status of each PCB (Cache)
Select (CL) one of [Cache-nxx/nx] in the 'Cluster-1/2' window.



The window for the selected PCB will appear.
The same configuration is used for all PCBs.

Cache Module ..... Status of the cache memory module
(Displayed for each module group)
Valid button : Normal
Blinking '*' in the button : Failure
'--' displayed in the button : Non-mounted

SM..... Status of the shared memory module
Valid button : Normal
Blinking '*' in the button : Failure or under maintenance
'¦' displayed in the button : Non-mounted

PCB Status ..... Status of this package
Valid button : Normal
Blinking button : Warning (abnormal)
: Blocked (blocked for maintenance)
: Failed (blocked due to a failure)
: Cache Access Error (PCB blocked and CMG normal)

Logical Path Status... Status of PCB Logical Path
- Normal
- Warning (abnormal)
- Blocked (blocked for maintenance)
- Failed (blocked due to a failure)

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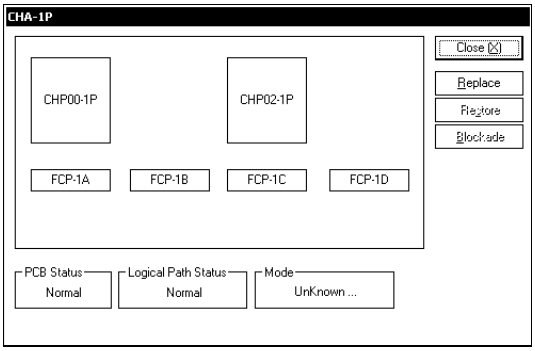
(4) Status of the CHA

Select (CL) one of [CHA-nx] in the 'Cluster-1/2' window. The 'CHA' window will appear.
The CHA part location number is displayed in the title.



CHPX-XX..... Status of program CHP in the CHA
- Valid button : Normal
- Blinking button : Failure

LCPXX..... Status of program LCP in the LCM
- Valid button : Normal
- Blinking button : Failure
- Invalid button : Non-mounted

FCP XX..... Status of processor FCP
- Valid button : Normal
- Blinking button : Failed or Blocked (status displayed under FCP button)
- Invalid button : Non-mounted

HTP XX ..... Status of program HTP
- Valid button : Normal
- Blinking button : Failed
- Invalid button : Non-mounted

PCB Status ..... Status of the CHA package
- Normal
- Warning (abnormal)
- Blocked (blocked for maintenance)
- Failed (blocked due to a failure)

Logical Path Status... Status of PCB Logical Path
- Normal
- Warning (abnormal)
- Blocked (blocked for maintenance)
- Failed (blocked due to a failure)

Mode ..... Mode of the CHA package
- Standard
- High Speed to Standard
- Standard to High Speed
- High Speed

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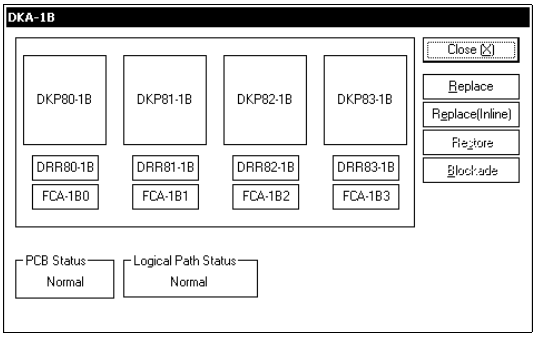
(5) Status of the DKA



Select (CL) one of [DKA-nx] in the 'Cluster-1/2' window. The 'DKA' window will appear.

DKPX-XX..... Status of programs DMP and DSP in the DKA
- Valid button : Normal
- Blinking button : Failure or under maintenance

FCA-XXX..... Status of the FCA (No. 0 ~ 3)

PCB Status ..... Status of the DKA package
- Normal
- Warning (abnormal)
- Blocked (blocked for maintenance)
- Failed (blocked due to a failure)

DRR-XX ..... Status of DRR
- Valid button : Normal
- Blinking button : Failure

Logical Path Status... Status of PCB Logical Path
- Normal
- Warning (abnormal)
- Blocked (blocked for maintenance)
- Failed (blocked due to a failure)

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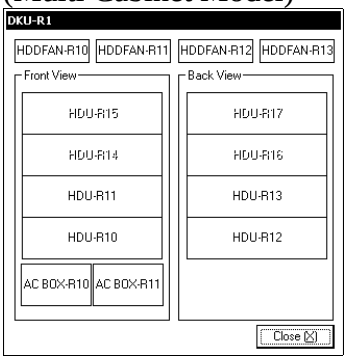
3.6 DKU (Disk)

(1) Status of the DKU (Disk)

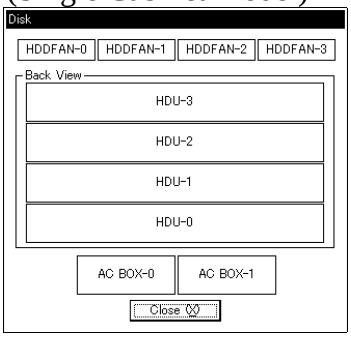
Select (CL) [DKU-R1], [DKU-R2], [DKU-R3], [DKU-L1], [DKU-L2] or [DKU-L3] (Disk) in the main screen. The 'DKU' ('Disk') window will appear.

The DKU (Disk) part location number is displayed in the title.

(Multi Cabinet Model)



(Single Cabinet Model)



HDU-XXn..... Status of the HDUs constituting the selected DKU (Disk) (Details are displayed on the lower layered screen.)

HDU-n

- Valid button : Normal
- Blinking button : Failure or under maintenance or copy work in progress
- Invalid button : Non-mounted

DKUMN-XXF ... Status of DKU monitor

DKUMN-XXR

DKUMN-n

- Valid button : Normal
- Blinking button : Failure

AC BOX-XXn.... Only AC BOX names are displayed.

AC BOX-n

XX represents XX in DKU-XX: for example, R1 for DKU-R1 and L2 for DKU-L2.

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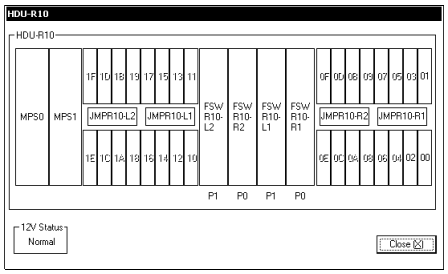
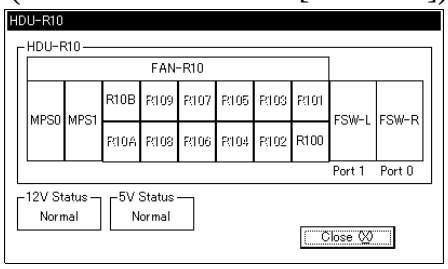
(2) Status of the HDU (Multi Cabinet Model)
Select (CL) one of [HDU-XXn] ([HDU-n]) in the 'DKU' ('Disk')window. The 'HDU' window will appear.

XXn.....Status of the HDDs constituting the HDU
nn (Details are displayed on the lower layer screen.)
Valid button : Normal
Blinking button : PDEV error, failure, or under maintenance
(Single Cabinet Model) Blocked port Copy work in progress
Invalid button : Non-mounted
" ---- "button : No information due to SVP-DKC error



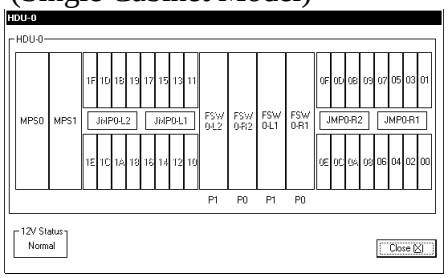
(Multi Cabinet Model [DKU405])



MPS0.....Status of the HDU power supplies
MPS1 Valid button : Normal
Blinking button : Failure
" ---- "button : No information due to SVP-SSVP error

FAN-XX0.....Status of the fans in the HDU
FAN-n Valid button : Normal
Blinking button : Failure
" ---- "button : No information due to SVP-SSVP error

(Single Cabinet Model)



- Multi Cabinet Model.....Only Fibre switch names are displayed.
  FSWXXn-Rn
  FSWXXn-Ln
  " ---- "button : No information due to SVP-SSVP error
- Single Cabinet Model
  FSWn-Rn
  FSWn-Ln

JMPXXn-Rn .....Status of the HDU JMP
JMPXXn-Ln Valid button : Normal
JMPn-Rn Blinking button : Failure
JMPn-Ln " ---- "button : No information due to SVP-DKC error

12V Status.....Status of the 12 voltage

5V Status.....Status of the 5 voltage
- Normal
- Warning (abnormal)

YYY represents YYY in HDU-YYY: when HDU-R12 is selected, for example, YYY is R12.

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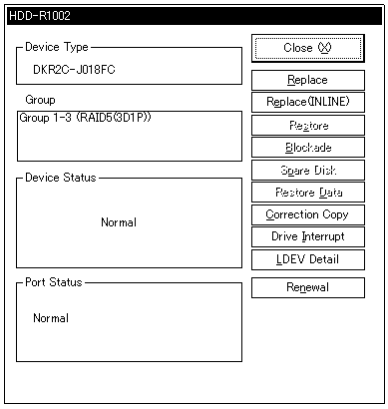
(3) Status of the HDD

Select (CL) one of [YYY0] to [YYYB] in the 'HDU' window.
The 'HDD' window will appear.
The HDD part location number is displayed in the title.



Device Type .....Model name of the HDD

Group .....Number of the parity group to which the HDD belongs

LDEV Detail .....The involved logical devices are listed.

Device Status.....The status of the HDD and the work name are displayed.

- Normal
- Correction Copy (xx%)
- Copy Back (xx%)
- Drive Copy (xx%)
- Dynamic Sparing (xx%)
- Blocked (blocked for maintenance)
- Failed (blocked due to failure)
- Warning (Either Port is blocked.)
- Failed (Both Ports are blocked.)
- Free (available spare disk.)
- Reserved (not available spare disk. The spare disk is reserved.)

During a copy operation, copy destination/copy source is displayed.

- to HDD-xx : Data is copied form this drive to HDD-xx.
- from HDD-xx : Data is copied from HDD-xx to this drive.

Port Status .....Port status

- Normal
- Warning (Port 0 failed): port 0 is blocked.
- Warning (Port 1 failed): port 1 is blocked.
- Failed: Both ports are blocked.

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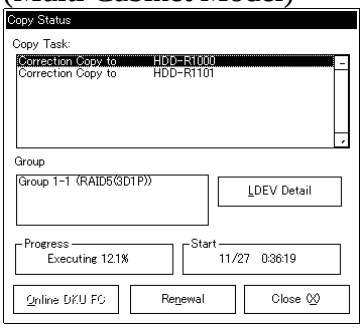
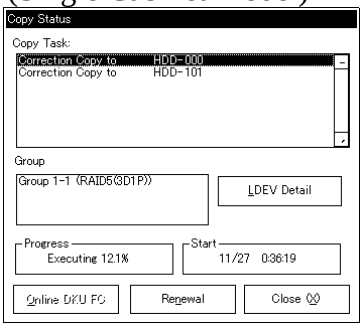
3.7 Copy status

(1) Select (CL) [Copy Status] in the main screen.
The 'Copy Status' window will appear.

(Multi Cabinet Model)



(Single Cabinet Model)



Copy Task ..... The operations of the drive copy currently running are listed.
- Correction Copy to HDD-XXXX
- Dynamic Sparing HDD-XXXX->HDD-XXXX
- Copy Back HDD-XXXX->HDD-XXXX
- Drive Copy HDD-XXXX->HDD-XXXX

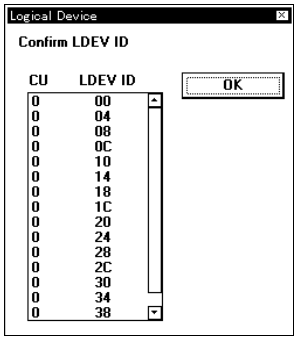
Group ..... Number of the parity group to which the target drive belongs.

Start ..... Date and time when the job started

Progress ..... Degree of job progress (indicated in percent)

Select (CL) one job item from the list. And select (CL) [LDEV Detail] in the 'Copy Status' screen. The following information concerning the selected LDEV ID will be displayed:

CU ..... CU ID
LDEV ID ..... Logical Device ID



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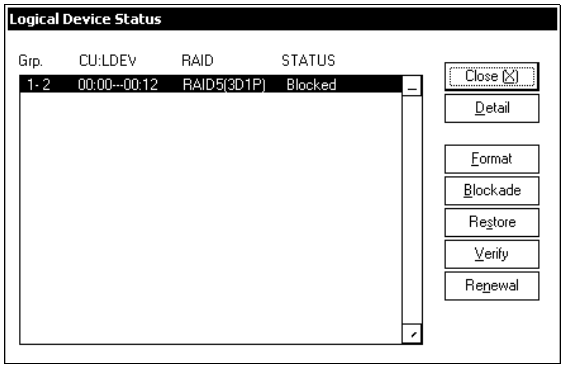
3.8 Logical device

(1) Select (CL) [Logical Device] in the main screen. The 'Logical Device Status' window will appear.

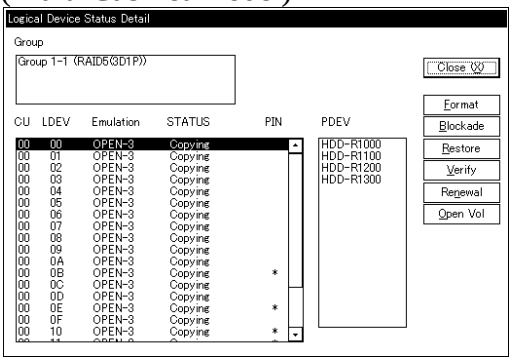


Grp ..... Grp ID
CU:LDEV ..... List of the mounted logical devices
RAID ..... RAID Level
Status ..... Status of the logical device

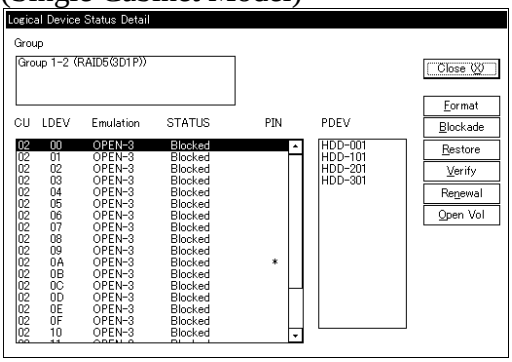
Select (CL) a logical device from the list. And select (CL) [Detail] in the 'logical device status' screen. The following information concerning the selected logical device will be displayed:

Parity Group .... Parity group to which the Logical Device belongs
PDEV ..... Number of the HDD including the Logical Device
PIN ..... If an Ldev has PIN, SVP will indicate the PIN status as '*'.
'*' : PIN occurred.
' ' : Normal (not occurred).

(Multi Cabinet Model)



(Single Cabinet Model)



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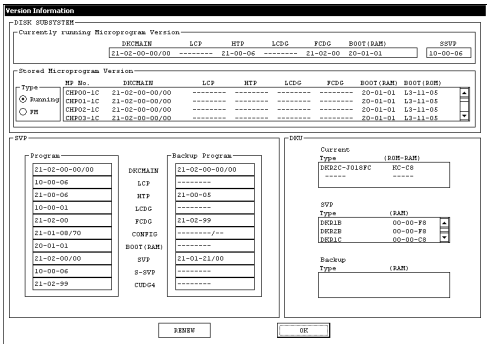
3.9 Micro-program version

Select (CL) [Version] from the main screen.
The message indicating that the version data of the currently running micro-program is being read is displayed, followed by the message indicating that the version data of the disk drive is read. Finally, the message indicating that the version data of the micro-program in the processor is being read is displayed.
Then, the 'Version Information' dialog box is displayed.



* Please do not change an application's window until SVP-DKC communication finish.

DISK SUBSYSTEM area : Displays the version of the currently running micro-program.
- Representative version
- Version of each processor

SVP area : Displays the version of the micro-program saved in the SVP.
- Latest version in the SVP
- Old version in the SVP

DKU area
- Drive version

In the version display areas, a hyphen "-" indicates that micro-program is not installed.
In the version display areas, a question mark "?" indicates that version data could not be obtained, and the letter "x" indicates that the obtained data is invalid.

If the version of the PCB which has already been installed is indicated as "x", please exchange the micro-code corresponding to "x" by micro FC (refer to MICRO-FC SECTION 4.4 Hard Disk Download (MICRO-FC04-160)).

To obtain new version data, select (CL) [RENEW]. The contents of the display will be updated accordingly.

To quit the version display, select (CL) [OK]. This will take you back to the main screen.

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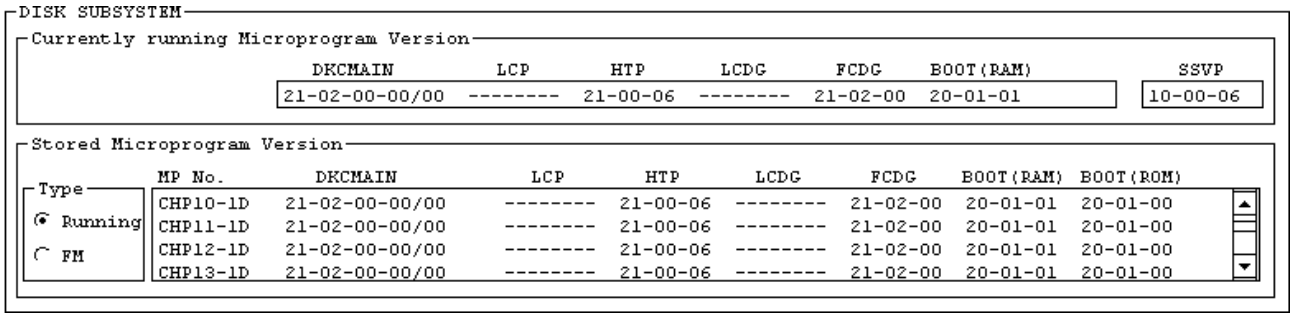
[1] DISK SUBSYSTEM area



(1) Representative version and version for each processor

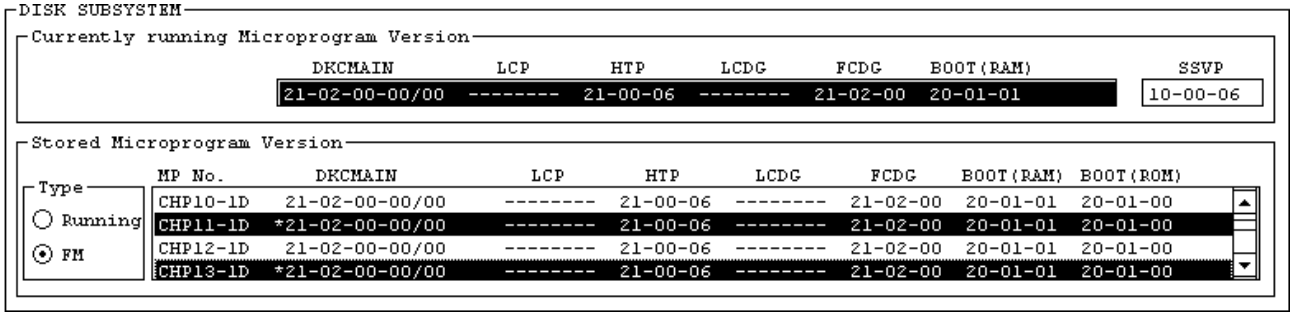
The Currently running Micro-program Version area displays the representative version of micro-program currently running.

The Stored Micro-program Version per Processor area displays the version of the currently running micro-program for each processor.

(This parameter specifies the kind of DKCMAIN micro program version.) If you select "Running", currently running DKCMAIN micro program version in SM is displayed. If you select "FM", DKCMAIN micro program version in FM is displayed.

A micro-program is divided into seven items: MAIN, LCP, HTP, LCDG, FCDG, BOOT (RAM), BOOT (ROM). The version of MAIN is displayed in the form of VV-RR-NN-PP/nn. The other versions are displayed in the form of VV-RR-NN.

The representative version may be displayed in reverse video. This display indicates that there is a processor version that does not match the representative version. The processor displayed in reverse video in the Stored Micro-program Version per Processor area is the one that caused a mismatch. An asterisk "*" in front of a version number indicates the mismatching item in the mismatching processor.



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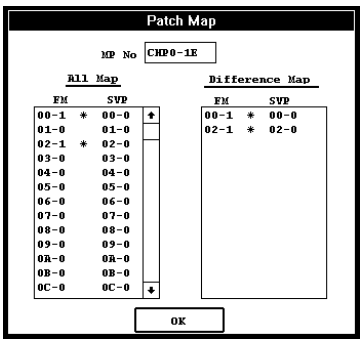
(2) Patch status display

Select (DC) the one line from the list in the Stored Micro-program Version per Processor area on the 'Version Information' dialog box.

A 'Patch Map' dialog box will be displayed, showing the patch status for the target processor.



MP No.....Processor ID

All Map .....List of all maps. All maps in the FM and SVP are displayed. When a match is not found between a map in the FM and the corresponding map in the SVP, an asterisk "*" is displayed between them.

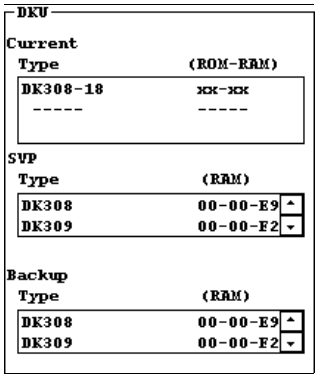
Difference Map ....Only the maps which do not provide a match between the FM and SVP in All Map.

The example on the right shows that, in processor CHP0-1E, the contents for patch ID numbers 00 and 02 are contained in the flash memory (FM) but not in the SVP.

To quit the patch status map display, select (CL) [OK].

(3) Drive version

The DKU area on the 'Version Information' dialog box lists drive versions as ROM Version-RAM Version.



Type : Types of drives currently running (DKxxx).

Current : Version of micro-program currently running.

SVP : New version of micro-program stored in SVP hard disk. (00-00-RAM Version)

Backup : Old version of micro-program stored in SVP hard disk. (00-00-RAM Version)

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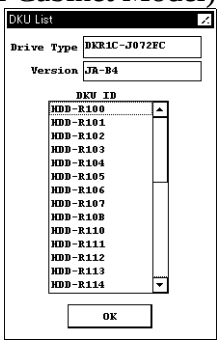
(4) Drive name display

(Multi Cabinet Model)

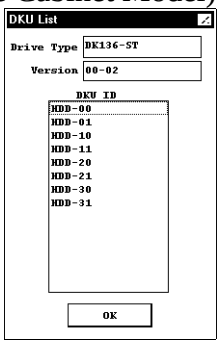


Select (DC) one line from the list in the DKU area on the 'Version Information' dialog box. The 'DKU List' dialog box will be displayed, in which the drive identified by the version are listed.

Drive Type .....Types of drives identified by the selected version.
Version.....Selected version
DKU ID.....List of IDs of the drives identified by the selected version.

To quit 'Drive List', select (CL) [OK].

(Single Cabinet Model)



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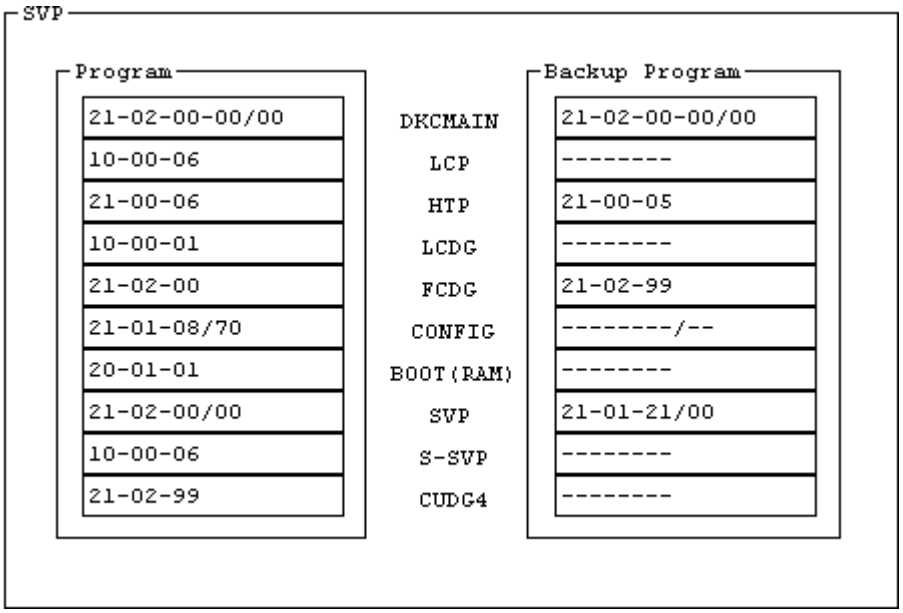
[2] SVP area



This area displays the versions of two generations (previous and most recent) of micro-programs saved on the SVP hard disk. Each micro-program is divided into ten items: MAIN, LCP, HTP, LCDG, FCDG, CONFIG, BOOT (RAM), SVP, S-SVP, and CUDG4. The version of MAIN is displayed in the form of VV-RR-NN-PP/nn while that of SVP, CONFIG is displayed in the form of VV-RR-NN/nn. The other versions are displayed in the form of VV-RR-NN.

Program Version .....The latest version is displayed.
Backup Program Version .....The old version is displayed.

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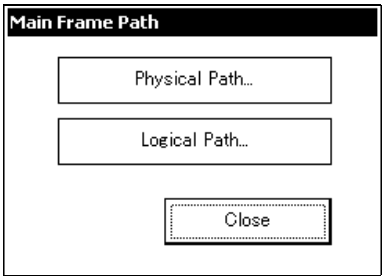
3.10 LCP/HTP Path

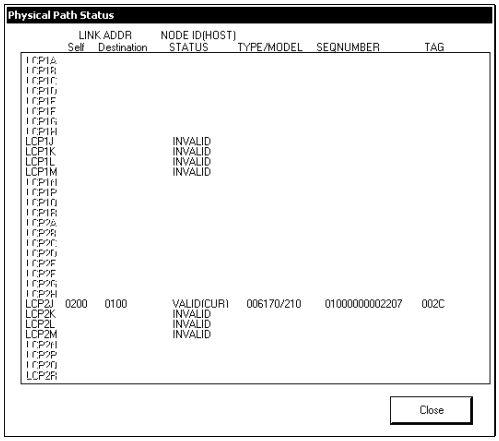
Select (CL) [Main Frame Path] from the main screen.
The message shown on the right is displayed while the SVP is reading path information from the DKC.

Upon completion of reading the path information, the Main Frame Path screen is displayed for selecting the physical or logical path.



* Please do not change window until SVP-DKC communication finish.

(1) Physical Path
Select (CL) [Physical Path] in the screen.
The 'Physical Path Status' window will appear.



LCPxx/RCPxx/HTPxx.. LCP/RCP/HTP mountposition

LINK ADDR
- Self ..... LCP/RCP link address
- Destination ..... Connection destination (host) link address

NODE ID (HOST)
- STATUS ..... Node ID obtainment status
- TYPE/MODEL ..... Connection destination type/model name
- SEQNUMBER ..... Connection destination production number
- TAG ..... Connection destination tag

World Wide Name (HOST)
- N_Port_Name ..... Connection destination N_Port name
- Node_Name ..... Connection destination NODE name

To exit the display, press [Close].

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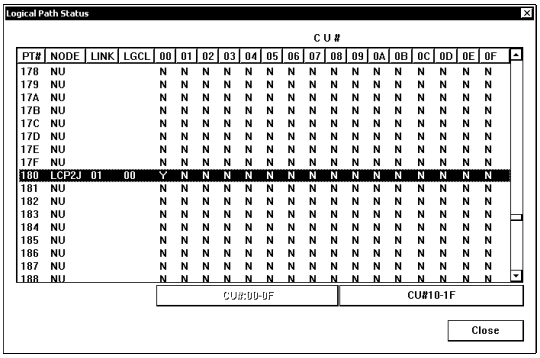
(2) Logical Path

Select (CL) [Logical Path] in the screen.
The 'Logical Path Status' window will appear.



PT#..... Path number
NODE..... LCPxx : LCP to which the logical path is allocated
RCPxx : RCP to which the logical path is allocated.
HTPxx : HTP to which the logical path is allocated.
NU : Unused logical path
LINK ..... Link address of the connected host "NA" is displayed when the RCP is specified.
LGCL ..... Logical address of the connected host.

Since data can be displayed only in 16 rows within a screen, use the scroll bar to display data hidden from the screen.
To exit the display, press (CL) [Close].

CU#..... Control unit address:
Y : Connected
N : Not connected
[CU#:00-0F].... To CU#00-0F the display, press (CL) [CU#00-0F].
[CU#:10-1F].... To CU#10-1F the display, press (CL) [CU#10-1F].

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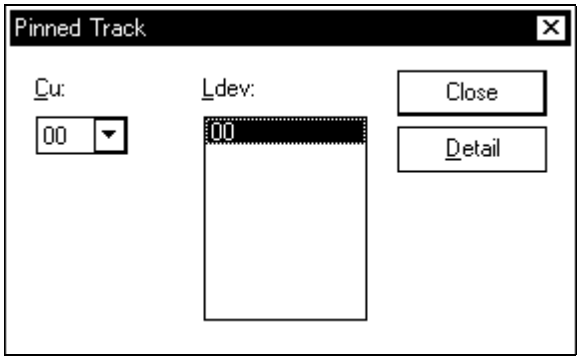
3.11 Pin

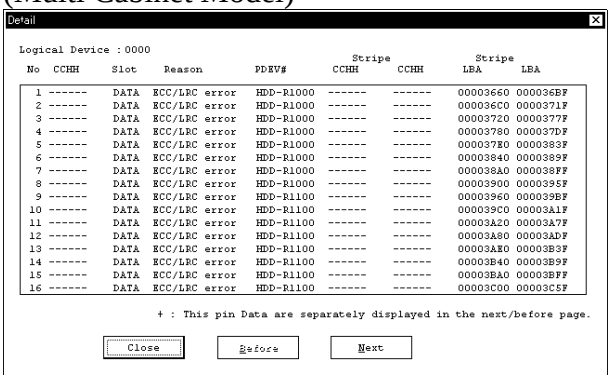
(1) Select (CL) [Pin] in the main screen.
The 'Pinned Track' windows will appear.



CU ---------- CU ID
Ldev -------- Logical device number in which PIN exists.

Select (CL) an Ldev from the list. And select (CL) [Detail] on the 'Pinned Track' screen. The following information concerning the selected Ldev will be displayed.

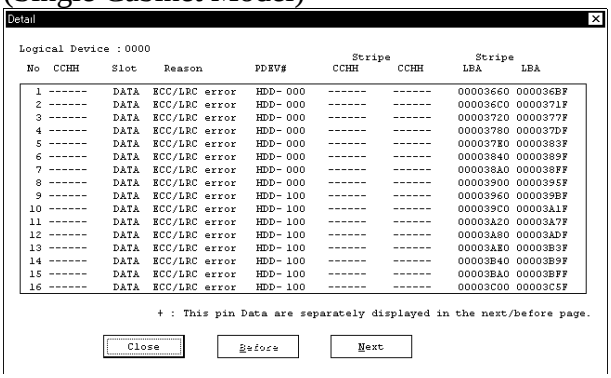
(Multi Cabinet Model)



CCHH -----Number of cylinder and head in which PINs exist.
Slot --------Kind of Track in which PIN exists.
DATA : DATA Track
PRTY : Parity Track
Reason ----Cause of Pin.
ELC/LRC error : See TRBL04-20.
WRITE error : See TRBL04-30.
PDEV# ----HDD number of Logical device with PIN.
Stripe ------The first and the last CCHH of parity stripes. The first and the last LBA of parity stripes.

Select (CL) [Next] to display the next PIN detailed information.
Select (CL) [Before] to display the previous PIN detailed information.

(Single Cabinet Model)



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3.12 LUN Management

(1) Outline

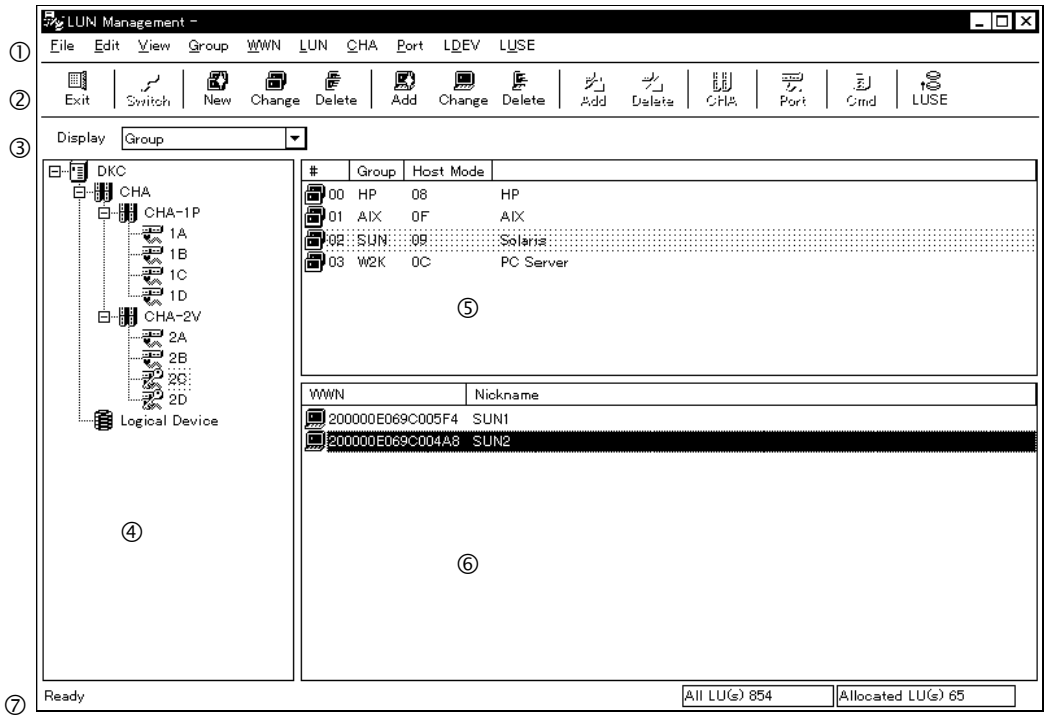

Figure 1.1 Main Window

The Main window consists of the following elements.

Table 1.1 Outline of Main Window Elements

#	Item	Description
①	Menu	Menu of items operable by this function
②	Tool bar	Part of the menu enabled to be operable by buttons
③	Switch	When “Switch” displayed in the tree view is selected (Port), the status of the switch is selectable. The setting of the groups or LUN is selectable.
④	Tree	The structure that it is conscious of the hardware construction
⑤	Upper list	Displays the details of an item selected from the tree.
⑥	Lower list	Displays the details of an item selected from the upper list, if any.
⑦	Status bar	Displays outlined function of each item on the menu and tool bar when the mouse is positioned on it. Also it displays the all of the LU figures and the LU figures with the pass definition.

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Menu items and their details are shown below.

Table 1.2 List of Menu Items

Menu	Submenu	Description	Tool bar
File	Exit	• Closes the window.	 (Exit)
Edit	Copy	• Not selectable.	None
	Paste	• Not selectable.	None
View	Toolbar	• Makes the tool bar displayed or not.	None
	Status Bar	• Makes the status bar displayed or not.	None
Group	New	• Not selectable.	 (New)
	Change	• Not selectable.	 (Change)
	Delete	• Not selectable.	 (Delete)
WWN	Add	• Not selectable.	 (Add)
	Change…	• Not selectable.	 (Change)
	Delete	• Not selectable.	 (Delete)
LUN	Add	• Not selectable.	 (Add)
	Delete	• Not selectable.	 (Delete)
	Command Device…	• Not selectable.	 (Cmd)
CHA	Change…	• Not selectable.	 (CHA)
Port	Parameter…	• Not selectable.	 (Port)
	Security Switch	• Not selectable	 (Switch)
Device	Command Device…	• Not selectable.	 (Cmd)
	Property	• Refers to LUN information from LDEV.	None
LUSE	LU Size Expansion	• Activates the LU Size Expansion window.	 (LUSE)

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(2) CHA Window

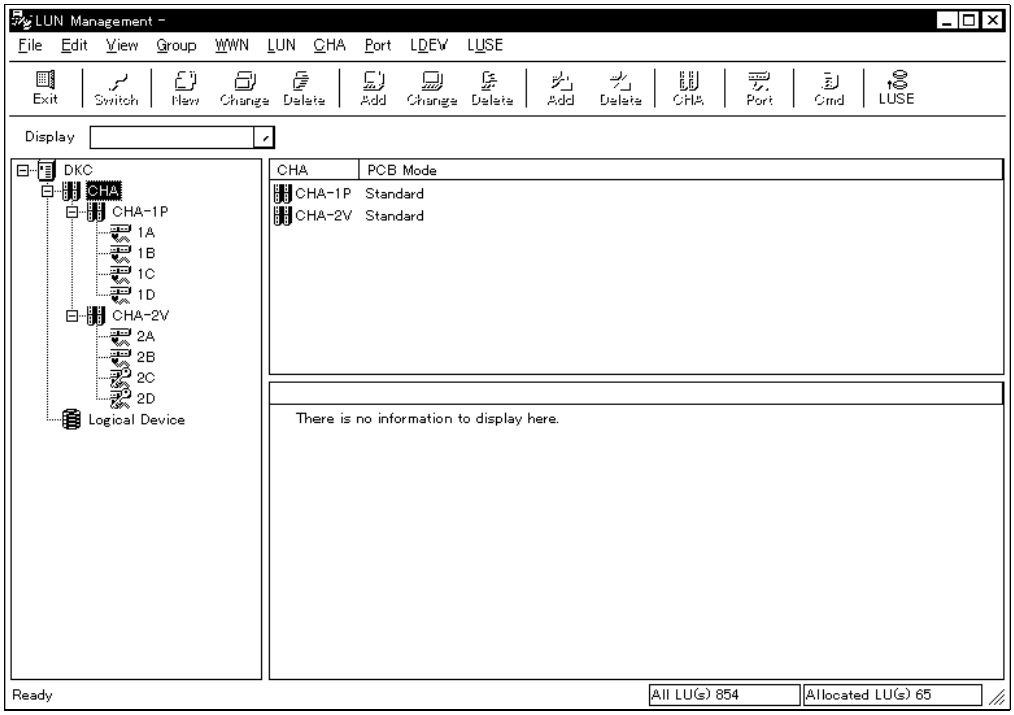

Figure2.1 CHA Window

When "CHA" in the tree view is selected (CL), installed CHA PCB's supported by this function are displayed in the upper right list.

Table 2.1 Details of CHA Window

Item	Description
Upper list	Displays installed CHA PCB's supported by this function. Displayed items: PCB name, Operate mode (Standard mode: Standard / High Speed mode: High Speed)
	Provided with a sorting function.
Lower list	Displays nothing.

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(3) Port Window

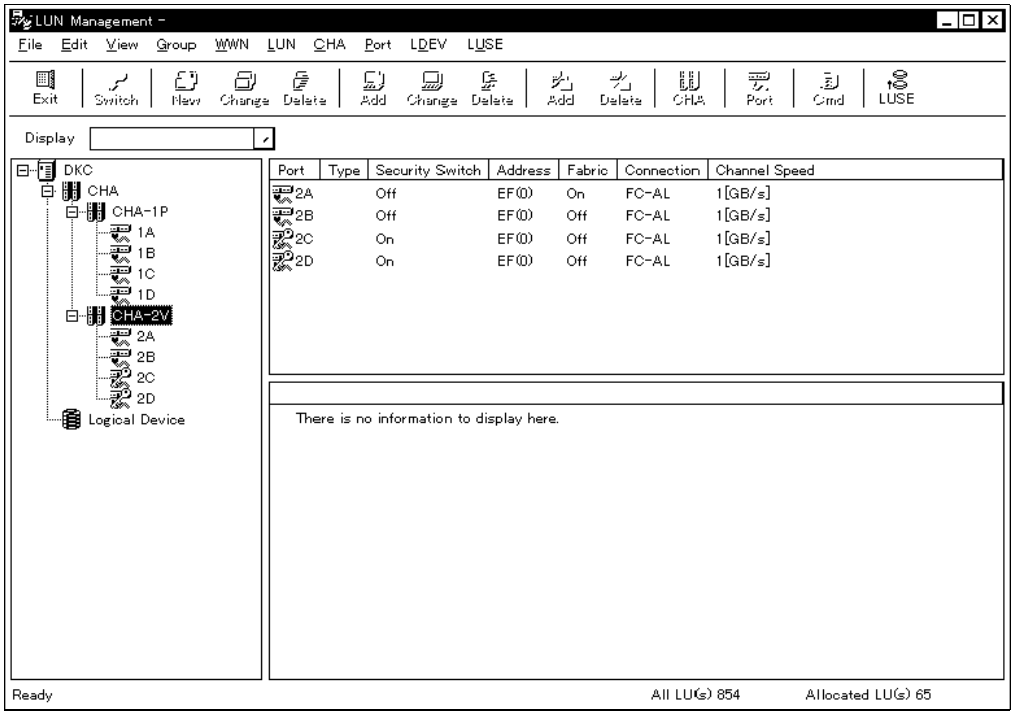

Figure3.1 Port Window

When "CHA locations" in the tree view is selected (CL), installed ports information supported by this function are displayed in the upper right list.

Table 3.1 Details of Port Window

Item	Description
Upper list	Displays installed ports supported by this function. Displayed items: Port name, type (Initiator, RCU target, or none), AL-PA, Security Switch, fabric, connection type, and channel speed
	Provided with a sorting function.
Lower list	Displays no item.

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(4) Group Window

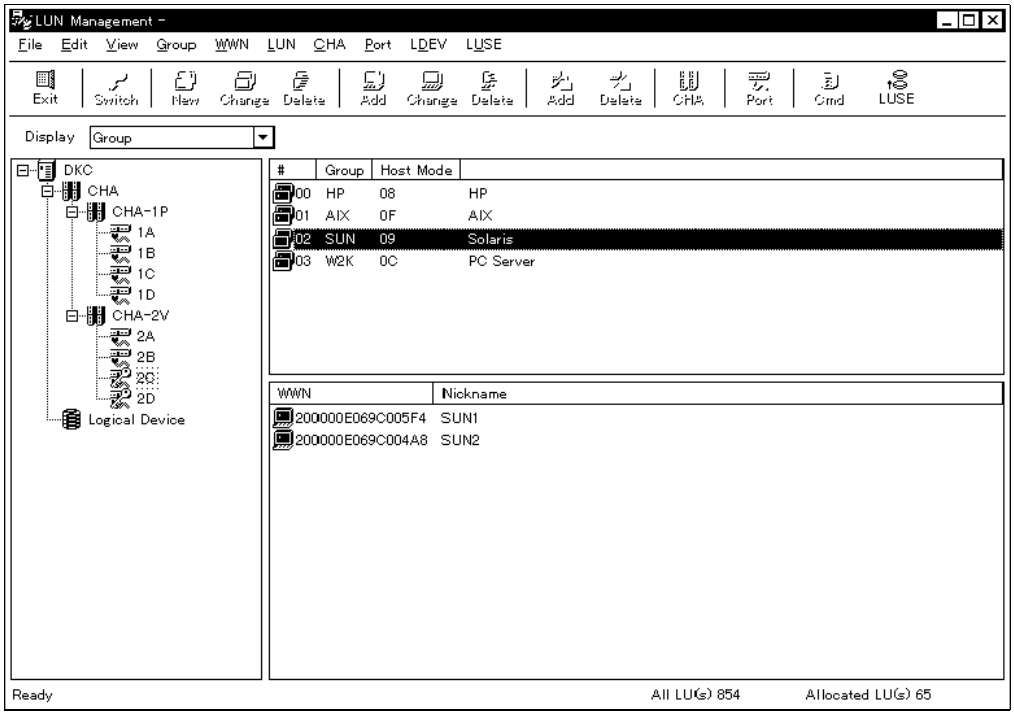

Figure4.1 Group Window

When "Port" in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Table 4.1 Details of Group Window

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree. Displayed items: Group number, group name, and host mode(setting)
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. Displayed items: WWN (16 hexadecimal digits) and nickname (up to eight characters) (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.

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(5) LUN Window

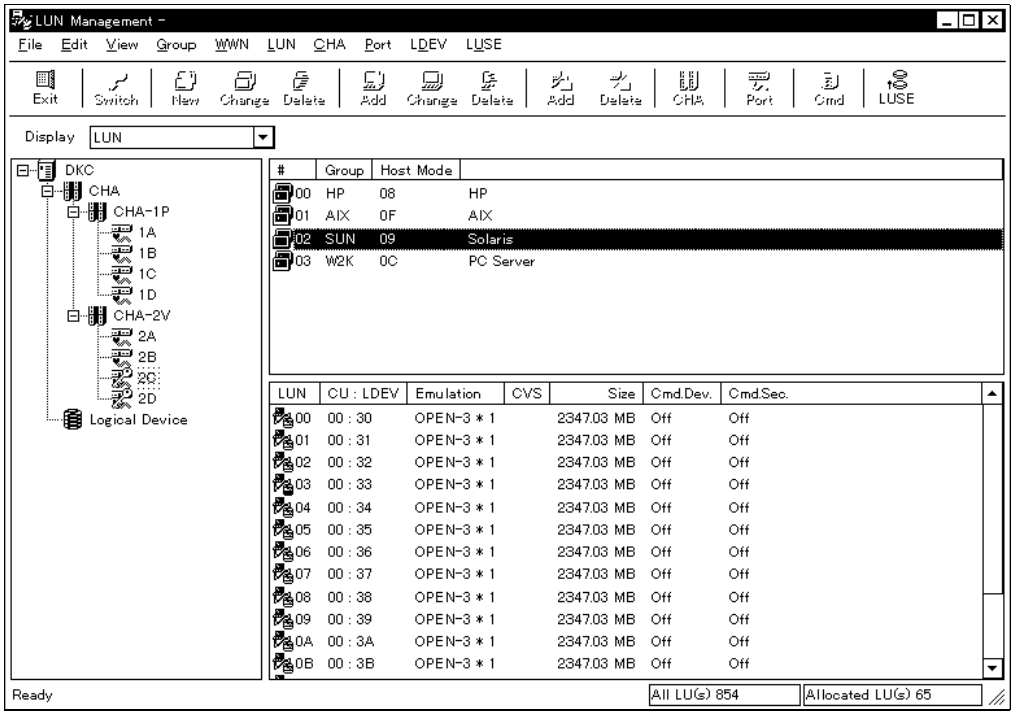

Figure5.1 LUN Window

When "Port" in the tree view is selected, “LUN” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed

Table 5.1 Details of LUN Window

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree. Displayed items: Group number, group name, and host mode(setting)
	Provided with a sorting function.
Lower list	Displays LUN’s defined as being contained in the group that has been selected from the upper list. Displayed items: LUN (two hexadecimal digits), CU: LDEV number, emulation type (number of connectable in decimal), size (in Mbytes), and Cmd.Dev., and Cmd.Sec. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.

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(6) Logical Device Window

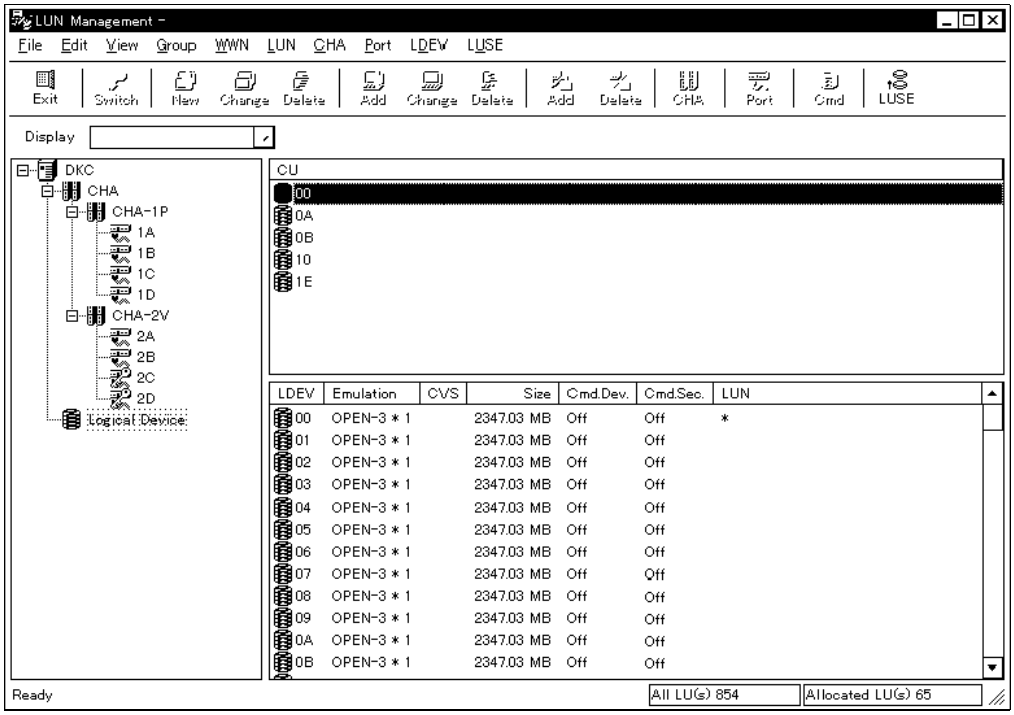

Figure6.1 Logical Device Window

When "Logical Device" in the tree view is selected (CL), CU numbers of installed LDEV's supported by this function are displayed in the upper right list. In the lower right list ,details of a CU selected from the upper right list are displayed.

Table 6.1 Details of Logical Device Window

Item	Description
Upper list	Displays CU numbers of installed LDEV's supported by this function. Displayed items: CU number (two hexadecimal digits)
	Provided with a sorting function.
Lower list	Displays details of a CU selected from the upper list. Displayed items: LDEV number (two hexadecimal digits), emulation type (number of connectable in decimal), CVS, size(in Mbytes), Cmd.Dev., Cmd.Sec., and definition of LUN (Defined: "*", Not defined: No indication) (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.
	Provide with a sorting function.

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-Blank Sheet-

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3.13 Error or Failure Status Action

When an error status of, Warning, Failed, or other is displayed on the screen and action is required, locate the part in error and follow the instructions sccording to the action code (ACC). The ACC can be obtained by executing the SSB log or SIM log displayed function of the SVP.

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4 Option Install

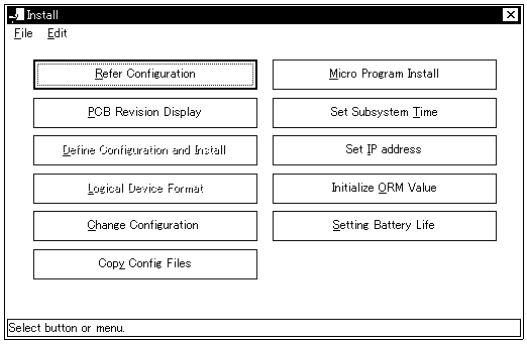
CAUTION

There is some possibility that “Syserr’s Clues” occurs during this operation. In this case, retry the same setting operations after SVP (PC) is rebooted. (The settings operations with “Syserr’s Clues” caused have no effects on the system.

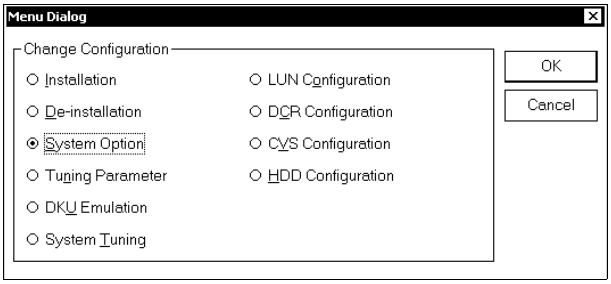
4.1 Option install by one

(1) Select Install
Select (CL) [Install].

(2) Select Change Configuration
Select (CL) the [Change Configuration] menu in the ‘Install’ window.



(3) Select System Option
Select (CL) the [System Option] menu in the ‘Menu Dialog’ window and select (CL) [OK].



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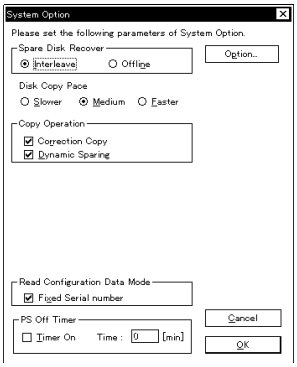
(4) Select Option

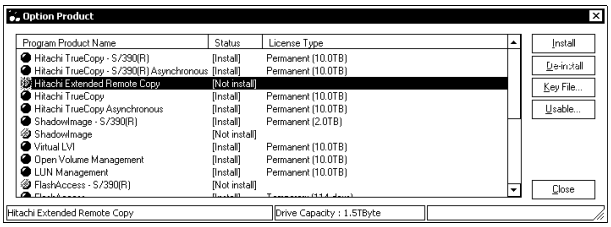
Select (CL) the [Option...] menu in the 'System Option' window.



(5) Change Option

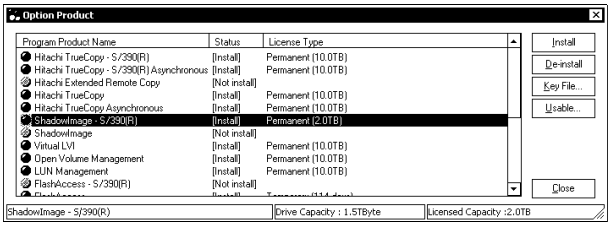
Option Install

Select (CL) option item you want to install from 'Option List' and select (CL) [Install...] button. Go to (6).



Option De-install

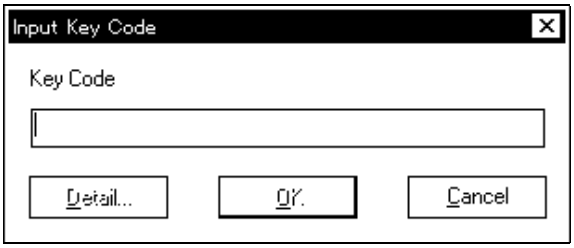
Select (CL) option item you want to de-install from the 'Option List' and select (CL) [De-install...] button. Go to (8).

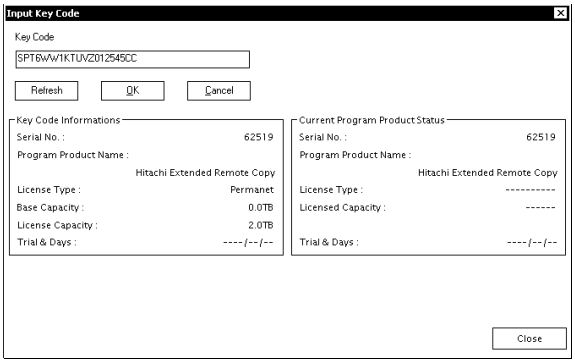


(6) Input Key Code

Input the key code and select (CL) [OK].

(Note) When the [Detail…] button is pressed, details of key code are displayed.





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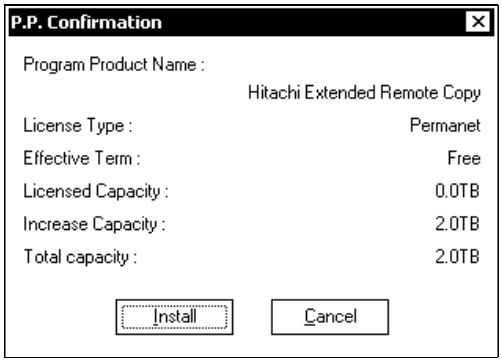
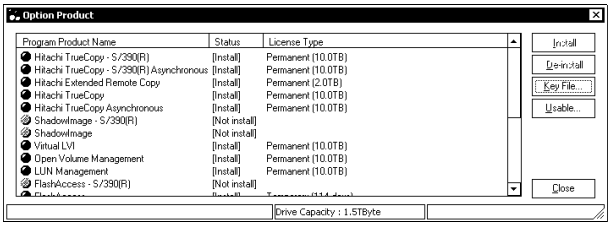
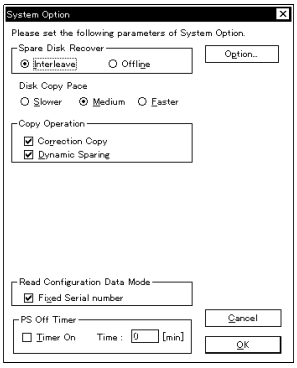
(7) Confirm option
Confirm option detail and select (CL) [Install].



(8) Changing finish
Select (CL) [Close].



(9) Close System Option
Select (CL) [OK].



(10) “Loading configuration...” is displayed.

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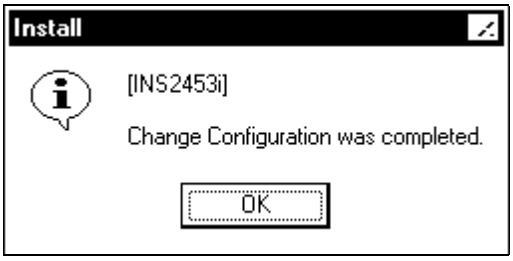
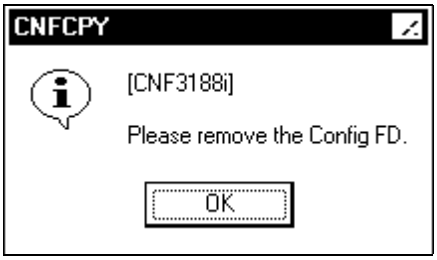
(11) “Change configuration was completed.” is displayed.
Select (CL) [OK].



(12) “Reading subsystem configuration data...” is displayed.
“Please insert the Config FD in the FDD.” is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

(13) When this procedure is completed, the message “Please remove the Config FD.” is displayed.
Remove the FD, select (CL) [OK].



(14) Close the ‘Install’ window.

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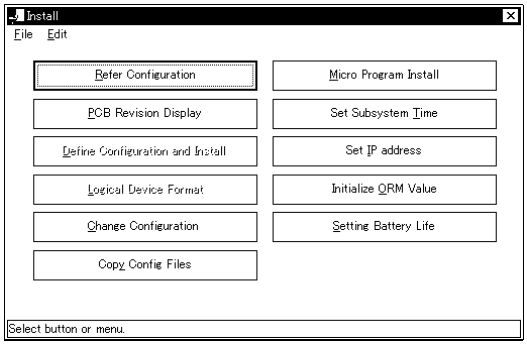
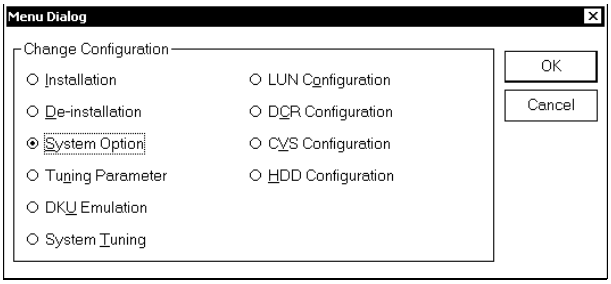
4.2 Option install with together

(1) Select Install
Select (CL) [Install].

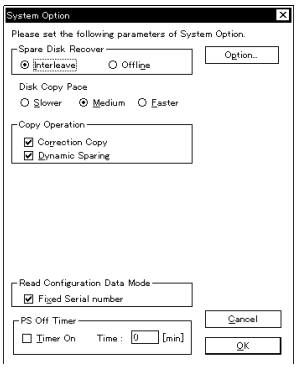
(2) Select Change Configuration
Select (CL) the [Change Configuration] menu in the 'Install' window.



(3) Select System Option
Select (CL) the [System Option] menu in the 'Menu Dialog' window and select (CL) [OK].



(4) Select Option
Select (CL) the [Option...] menu in the 'System Option' window.



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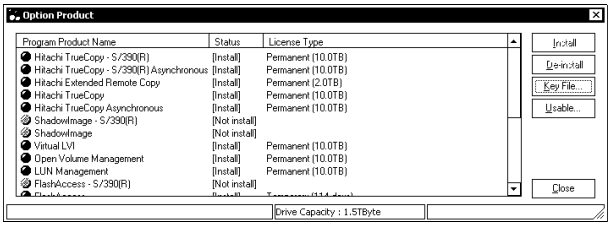
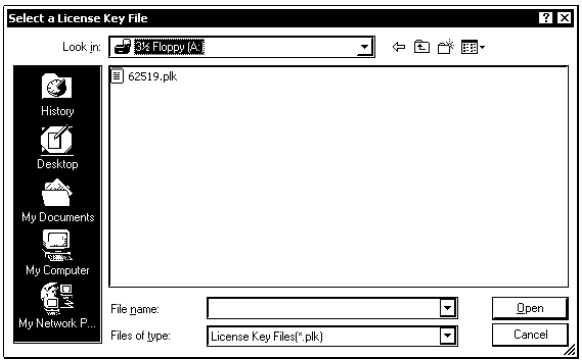
(5) Select Key File
Select (CL) [Key File].

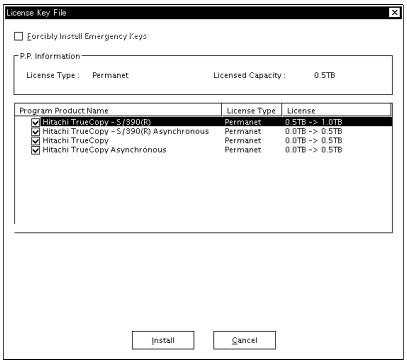


(6) Select a license Key File
Select the license key file, and select (CL) [OK].

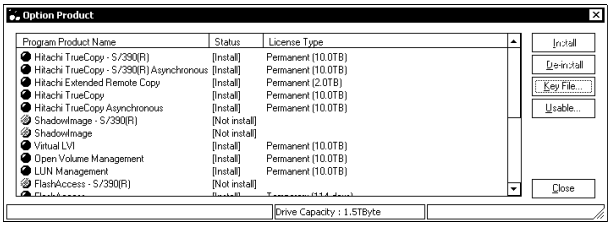


(7) Select Option
Check the option you want to install, and select (CL) [Install].

(Note) P.P. information displays key information has already been installed.
Program Product Name, License Type, and License show information on license key files.



(8) Changing finish
Select (CL) [Close].



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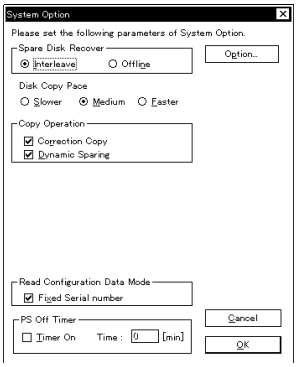
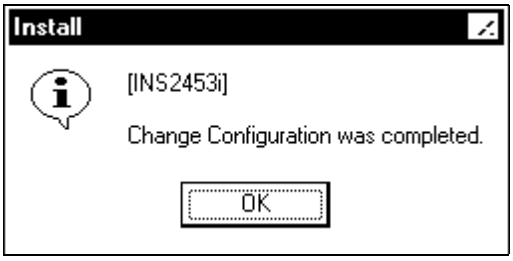
(9) Close System Option
Select (CL) [OK].



(10) "Loading configuration..." is displayed.

(11) "Change configuration was completed." is displayed.
Select (CL) [OK].



(12) "Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

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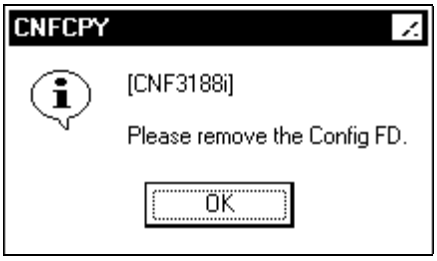
(13) When this procedure is completed, the message “Please remove the Config FD.” is displayed.
Remove the FD, select (CL) [OK].



(14) Close the ‘Install’ window.

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4.3 Details for Screen

[1] The Option Product Panel

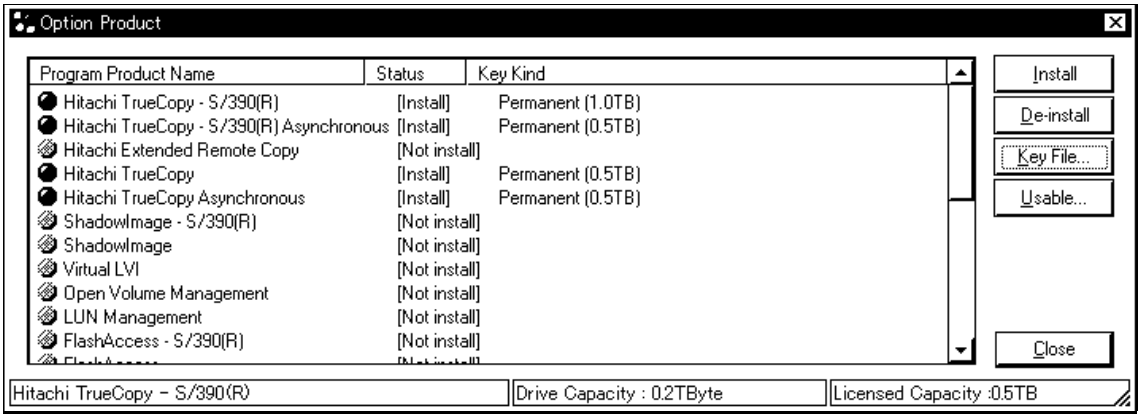

Figure 4.3.1 Option Product Panel

The Option Product panel has the following features:

- The **Option List** displays the available DKCMAIN options.
- The **Status** list shows the current status of each option (**Install** or **Not Install**).
- The **Key Kind** list displays the license type (**Temporary**, **Permanent**, or **Emergency**) and the maximum licensed capacity of the PDEVs (physical devices). If **[Frame Unlimited]** is displayed, this indicates that the licensed capacity for that option is unlimited.
- The **Install…** button allows you to install the selected option.
- The **De-install…** button deinstalls the selected option.
- The **Key File...** button opens the Select a License Key File panel, which allows you to select one or more license key file(s) for the connected 9900 subsystem.
- The **Usable...** button opens the Option Product Capacity panel (see Figure 4.3.4), which displays the total capacity already used and the capacity licensed by specific options such as TrueCopy, ShadowImage, and Extended Remote Copy options.
- The **Close** button closes the Option Product panel.
- Status Bar displays the following items.
  - Drive Capacity : The lowest license capacity needed it the disksubsystem is displayed.
  - Licensed Capacity : The license capacity of the DKC option installed in the disksubsystem is displayed.
  - Term of validity : The date when the License key (Temporary key, Emergency key) lapses is displayed.

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Note1: If you forcibly install an emergency key to an option that has already the permanent key, the license of that option will expire in 10 days.
DKC holds the licensed capacity of the previously installed permanent key.
After the Emergency key is installed, license capacity (Already Capacity) of the Permanent key is displayed in the Status Bar.

Note2: Note on installation of the license key whose installed capacity is larger than the licensed capacity.
- DKC accepts the license key input.
- Through Status is [Not install], the license capacity is held.
- Install the license key for [Existing Capacity (Base Capacity) + added capacity].
- Optional functions(*1) are excluded.
  (*1) Hitachi TrueCopy - S/390®, Hitachi TrueCopy - S/390® Asynchronous, Hitachi TrueCopy, Hitachi TrueCopy Asynchronous, ShadowImage - S/390®, ShadowImage, and Hitachi Extended Remote Copy.

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[2] The License Key File Panel

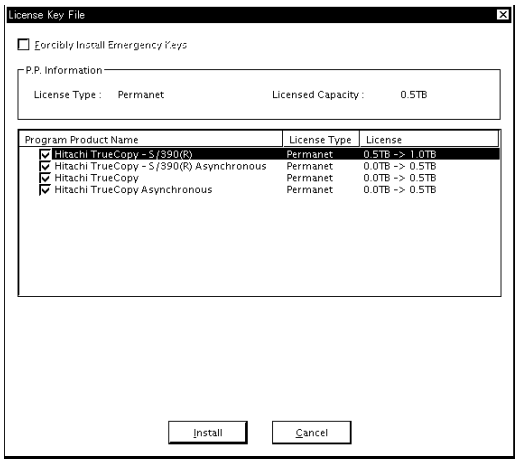

Figure 4.3.2 DKCMAIN License Key Panel

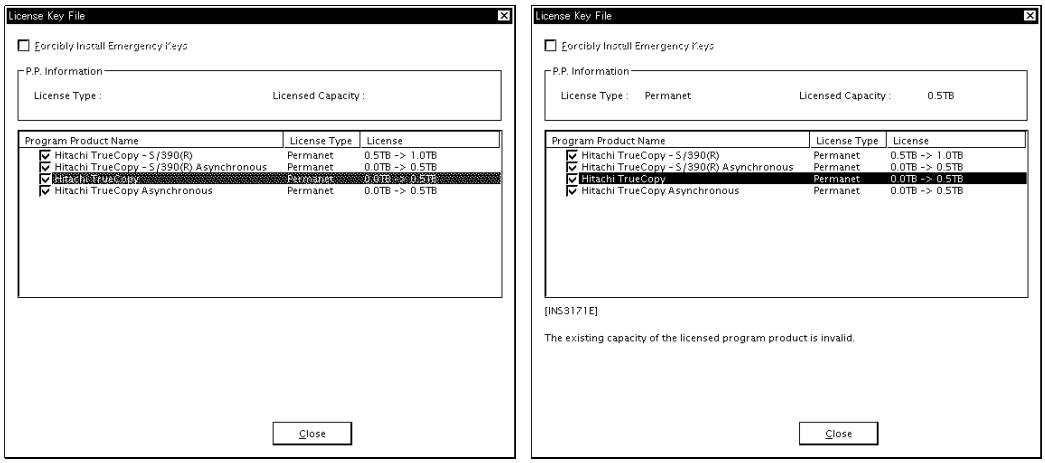

Figure 4.3.3 Examples of DKCMAIN License Key Installations

The License Key File panel has the following features:

(1) On the License Key File panel, check the box(es) for the desired option(s).

(2) Select **Install** to continue installation, or select **Cancel** to exit the License Key File panel.

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(3) If an installation fails, the failed option(s) will be displayed in red. Select a failed option if you want to review the contents of the error message. Once you have reviewed the contents of the error message, select **Close** to exit the License Key File panel, and then retry the installation.

(4) If the installation is complete successfully, the License Key File panel closes and you are returned to the Option Product panel. The displayed status of the selected options changes from **Not install** to **Install**.

Note1: You can install an emergency key to an option that has already been installed with the permanent key, by selecting the **Forcibly Install Emergency Keys** check box. However, the license of the forcibly installed option will expire in 10 days.
DKC holds the licensed capacity of the previously installed permanent key.

Note2: Note on installation of the license key whose installed capacity is larger than the licensed capacity.
- DKC accepts the license key input.
- Through Status is [Not install], the licensed capacity is held.
- Install the license key for [Existing Capacity (Base Capacity) + added capacity].
- Optional functions(*1) are excluded.
  (*1) Hitachi TrueCopy - S/390®, Hitachi TrueCopy - S/390® Asynchronous, Hitachi TrueCopy, Hitachi TrueCopy Asynchronous, ShadowImage - S/390®, ShadowImage, and Hitachi Extended Remote Copy.

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[3] The Option Product Usable Capacity Panel

The Option Product Capacity panel (see Figure 4.3.4) displays the capacity already used and capacity licensed by each of the available options***1**. To access the Option Product Capacity panel, select the **Usable…** button on the Option Product panel (see Figure 4.3.1).

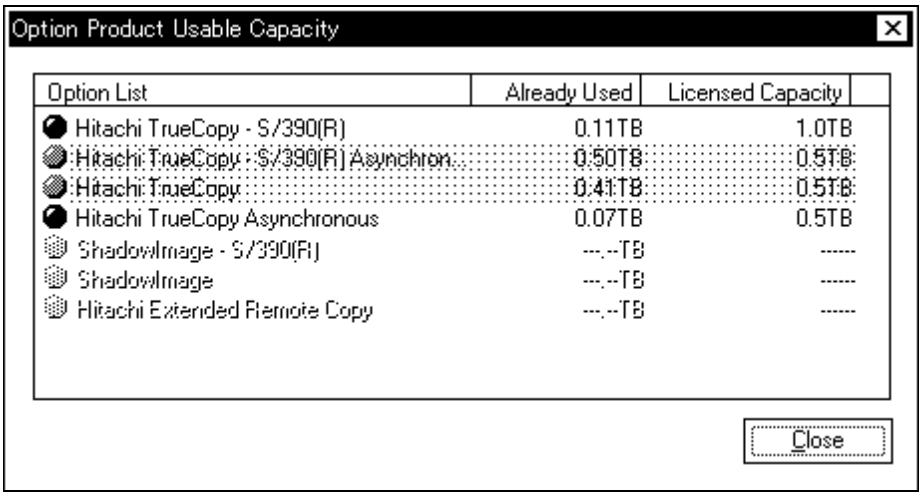

Figure 4.3.4 Option Product Capacity Panel

The Option Product Capacity panel has the following features:

- The **Option List** displays the available DKCMAIN options***1**.
- The **Already Used** displays the total disk capacity that each option has already used.
- The **Licensed** displays the total disk capacity that the user is licensed to use.
- The **Close** button exits the Option Product Usable Capacity panel

Note: If the capacity already used has reached 80% of the capacity licensed, the option is highlighted in yellow. It is recommended that you add your licensed capacity for the options that are highlighted in yellow on the Option Product Capacity panel.

Note *1: Hitachi TrueCopy - S/390®, Hitachi TrueCopy - S/390® Asynchronous, Hitachi TrueCopy, Hitachi TrueCopy Asynchronous, ShadowImage - S/390®, ShadowImage, and Hitachi Extended Remote Copy.

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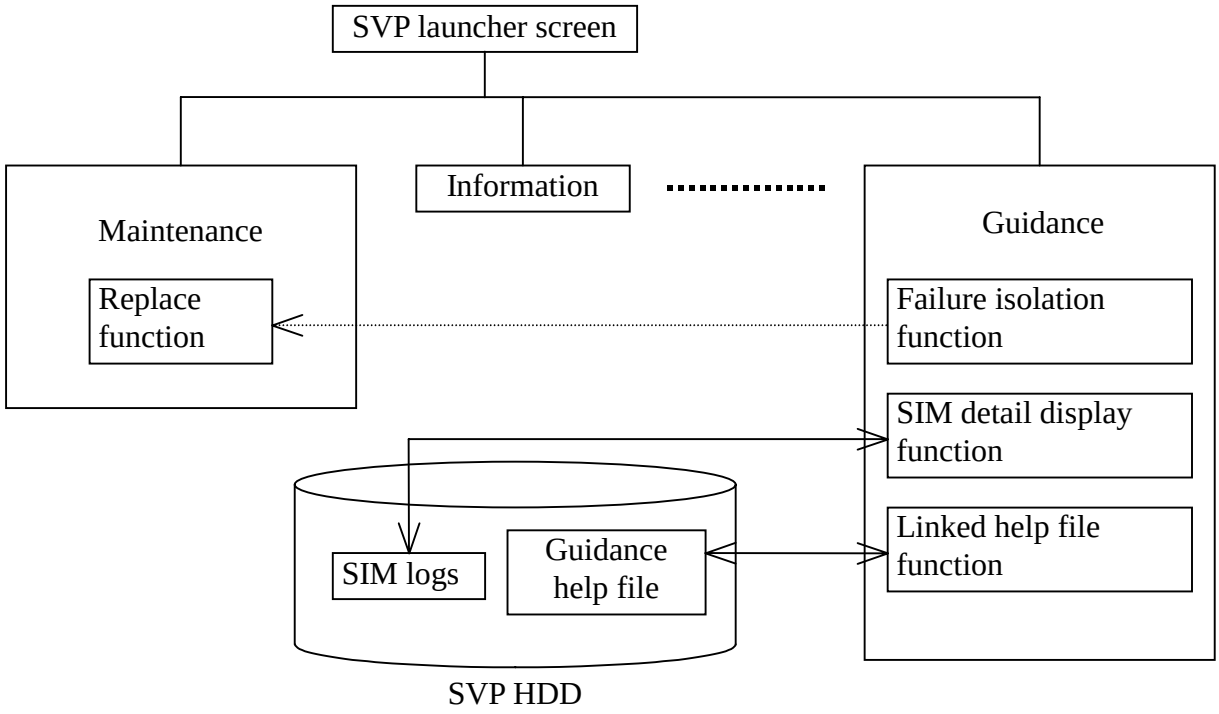
5 Guidance Operation Screen

5.1 Operation Manual of Guidance Function

Similar to Maintenance and Information, Guidance Function runs under the SVP launcher screen.



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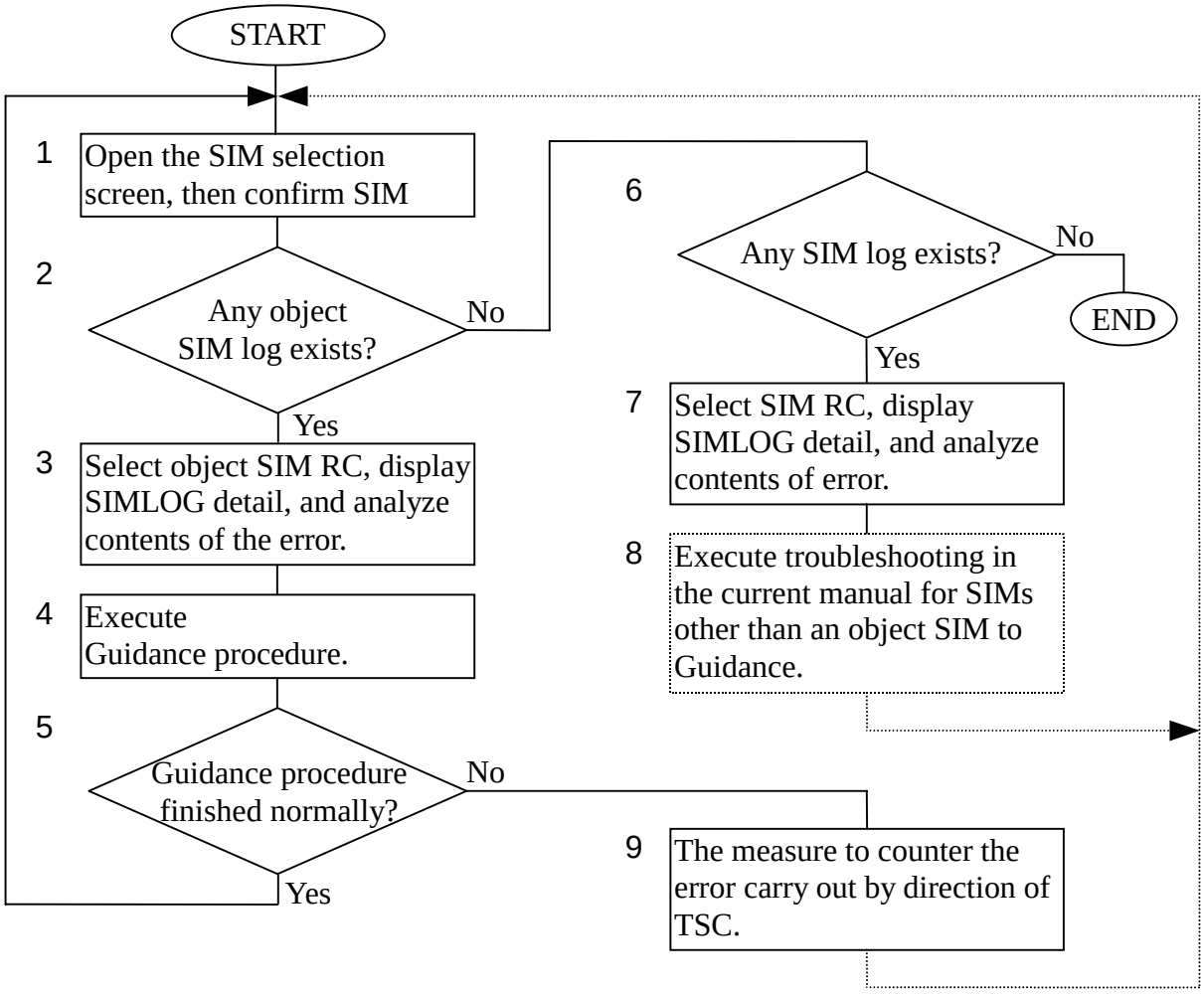
5.2 Outline Of Countermeasure By Guidance



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5.3 Object SIM RC for Guidance Function

When the following SIM RC occurred, Guidance function can be execute.

List of object SIM RC for Guidance function (1/2)

SIM RC	Name of failure	trouble ID	Guidance function
BF4XXX	P/S warning error	01	Guidance function can be measured to counter these failure as well as Troubleshoot in the maintenance manual.
BF2XXX	Voltage alarm	02	
BFA1XX	Environment disagreement error	03	
DF6XXX	Recovery procedure for common Fibre loop error	04	If a specific drive can be identified as a cause of failure, it is isolated and the location is displayed. If a cause of failure cannot be specified, the troubleshooting in the maintenance manual is referred to. In case of replacement, you can use the Replace function in the Maintenance Window.
DF7XXX			
DF8XXX			
DF9XXX			
CF90XX	Recovery procedure for LDEV blocking	05	Guidance function can not cope with these failure situation. Refer to the troubleshooting and finish Guidance.
EF9XXX			
DFAXXX			
DFBXXX			
XXXXXX	Replace	06	In this case, troubleshooting depends on Replace procedure by maintenance screen.
2180XX	RIO PATH closed	07	Guidance function can not cope with these failure situation. Refer to the troubleshooting and finish Guidance.
2190XX	AL_PA value conflict	08	
3993XX	Replace failure	09	
3D93XX			
399FXX	CHT PCB type inconsistency	0a	
FFE3XX	Shared memory failure	0b	TSC CALL message will be displayed to finish Guidance.
FFD3XX		0c	
FFDEXX		0d	Refer to the troubleshooting and finish Guidance.

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List of object SIM RC for Guidance function (2/2)

SIM RC	Name of failure	trouble ID	Guidance function
D40XXX ~ D45XXX, D48XXX, D4DXXX ~ D4FXXX, DB0XXX ~ DB5XXX, DBDXXX ~ DBFXXX	HRC/HODM/HORC failure	0e	Guidance function can not cope with these failure situation. Refer to the troubleshooting in the maintenance manual.
47DXXX	HMRCF/HOMRCF failure	0f	Guidance function can not cope with these failure situation. Refer to the troubleshooting in the maintenance manual.
47FXXX	HIHSM failure	10	Guidance function can not cope with these failure situation. Refer to the troubleshooting in the maintenance manual.

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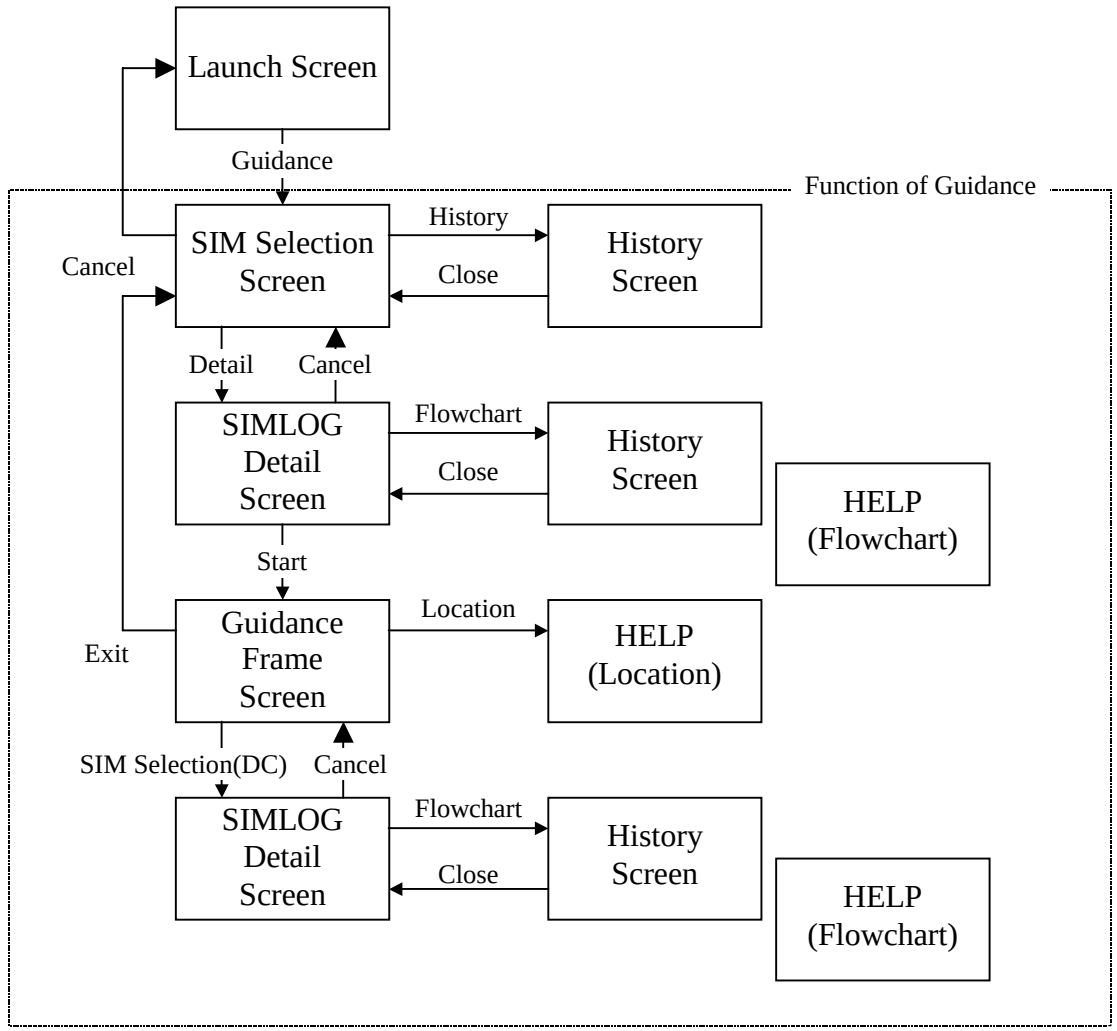
5.4 Guidance Change of Screen



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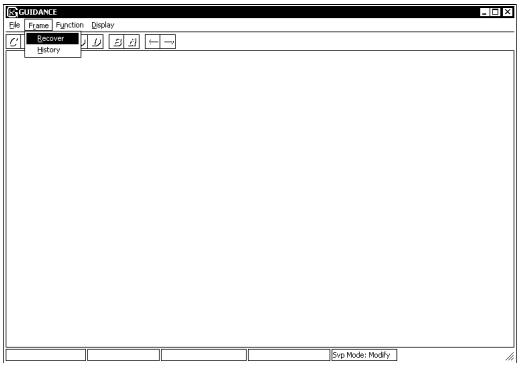
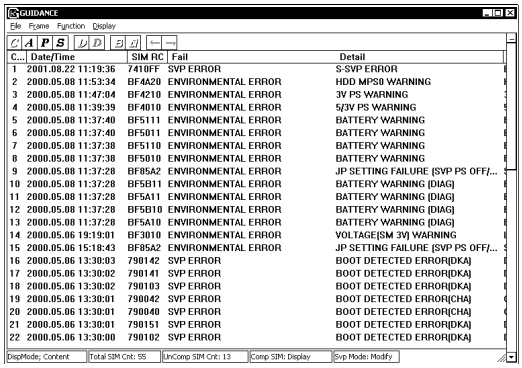
5.5 Operation of Guidance

[1] Start of Guidance

(1) Select (CL) [Guidance] menu.



(2) SIM selection screen is displayed.
(Initial screen of Guidance function)



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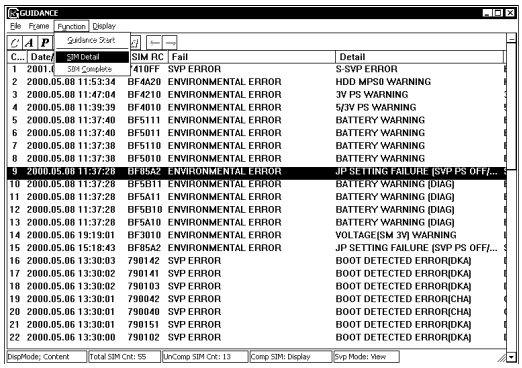
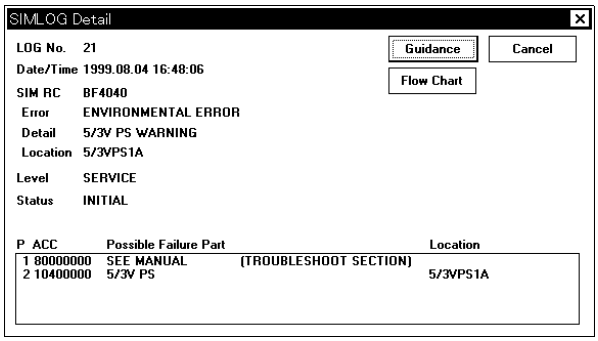
[2] SIMLOG Detail Screen

(1) When the SIM RC (SIM status is available) is selected
When the Guidance function can be execute, the [Detail & Go] button is displayed.
Select (CL) the [Guidance] button.

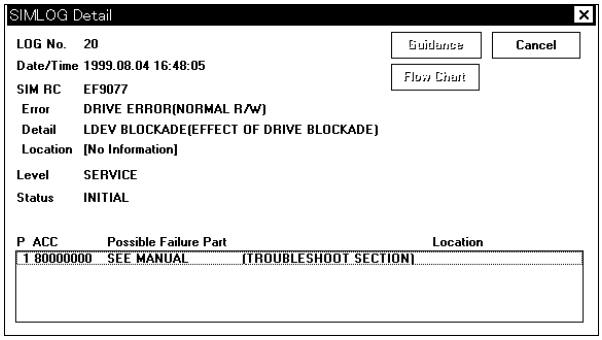
The SIMLOG detail dialog box is displayed.



(2) When the SIM RC (SIM status is not available) is selected
When the Guidance function is cannot be executed, (when the Guidance status is not available on the screen) the [Detail] button is displayed.



Since the Guidance function is disable, [Guidance] button is not displayed.



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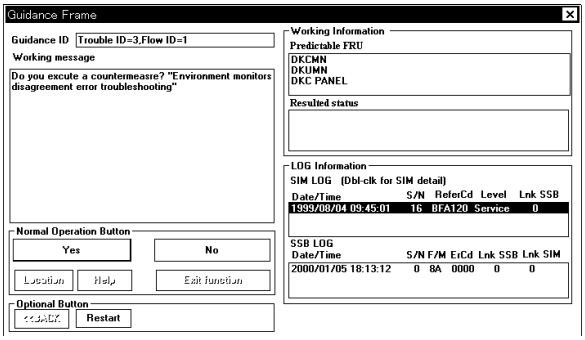
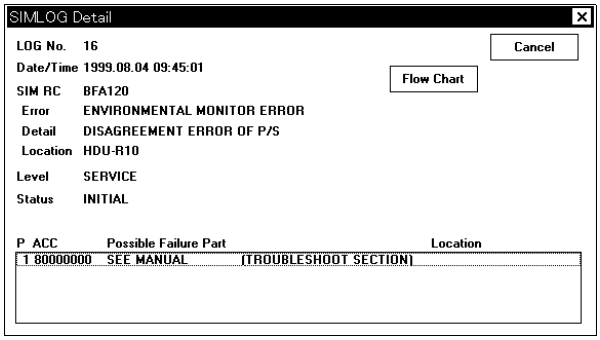
(3) When the Guidance function is running Select (DC) SIMLOG in the list box.



Since the Guidance function is running, [Guidance] button is not displayed.



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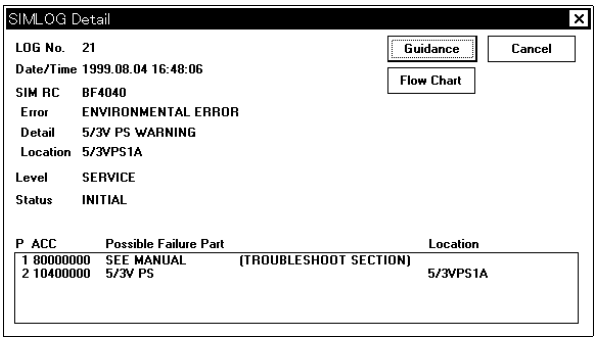
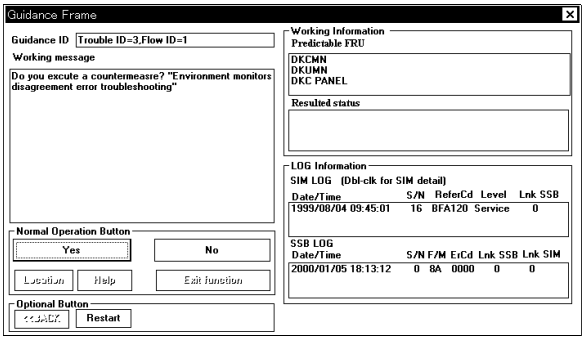
[3] Start troubleshooting

(1) Select (CL) the [Guidance] button.



The Guidance frame screen is displayed.



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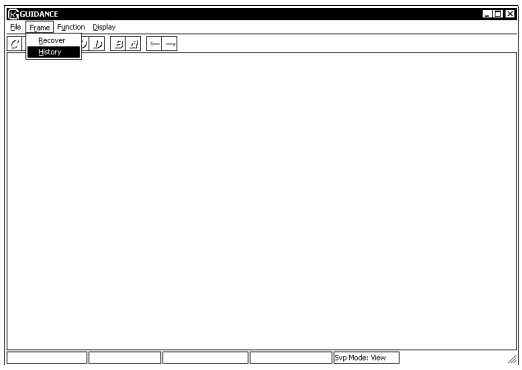
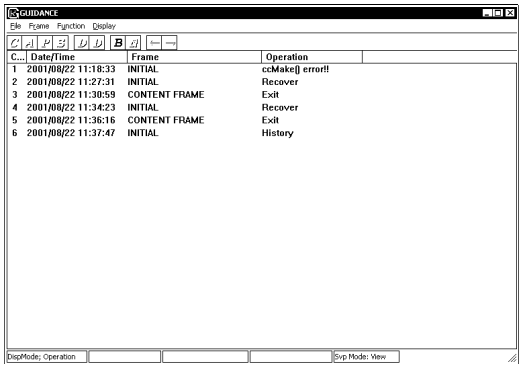
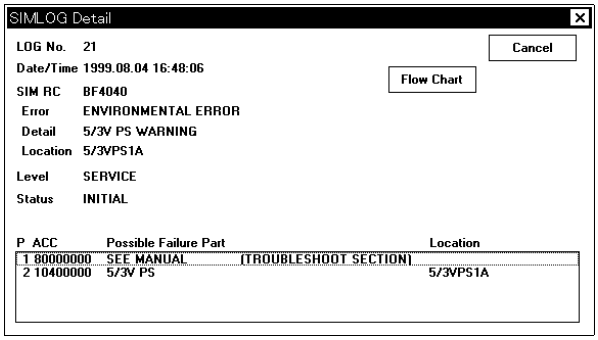
[4] History screen

(1) Start from initial screen.
Select (CL) the [HISTORY] menu.





(2) Start from the SIMLOG detail screen.
Select (CL) the [Flow Chart] button.



The [Up], [Down] and [Log Delete] buttons are not displayed.

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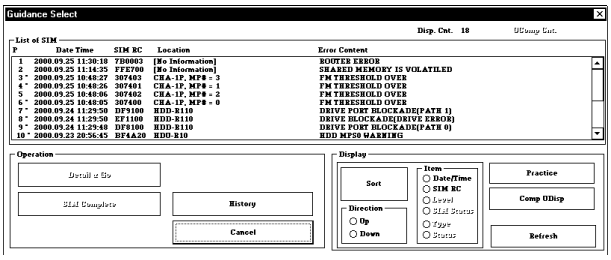
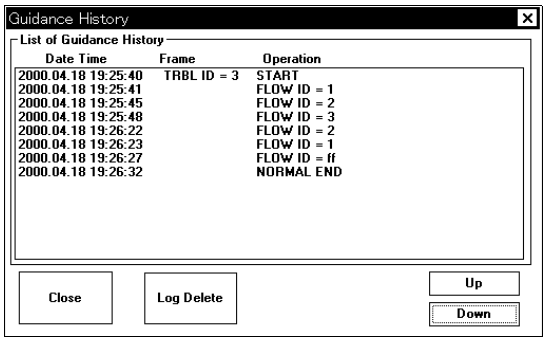
[5] Delete history

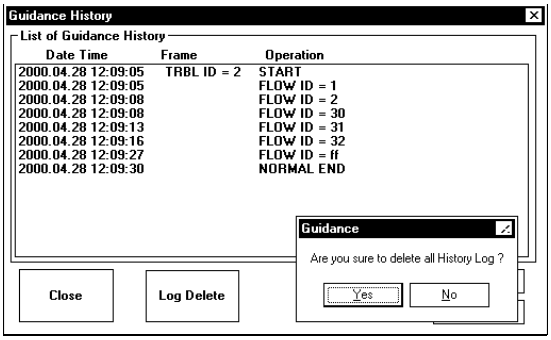
(1) Select (CL) the [HISTORY] button.



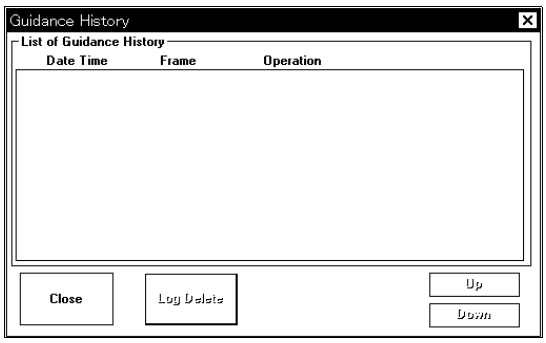
(2) Select (CL) the [Log Delete] button.



(3) When the confirmation message is displayed, select (CL) the [Yes] button.



(4) All the logs are cleared.



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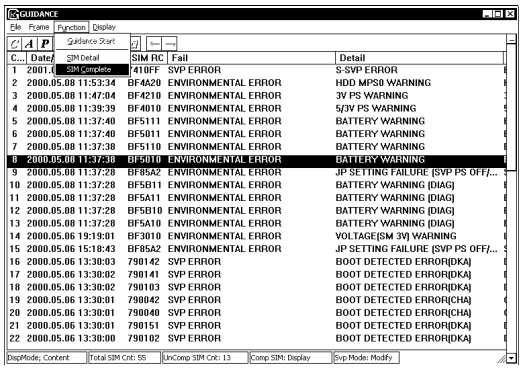
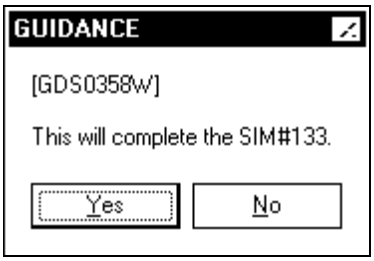
[6] SIM Complete

(1) Select (CL) SIM RC in the list box,
Select (CL) the [SIM Complete] menu.



(2) Select (CL) the [Yes] button.



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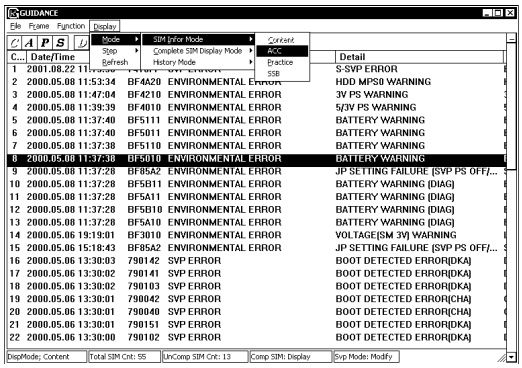
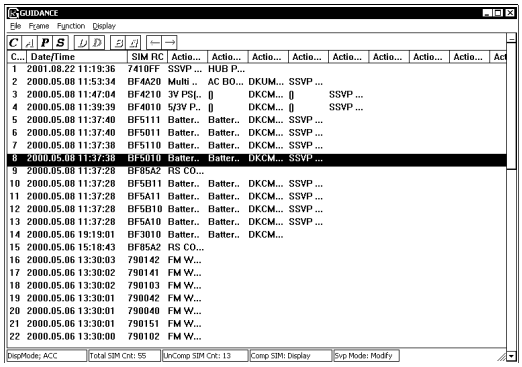
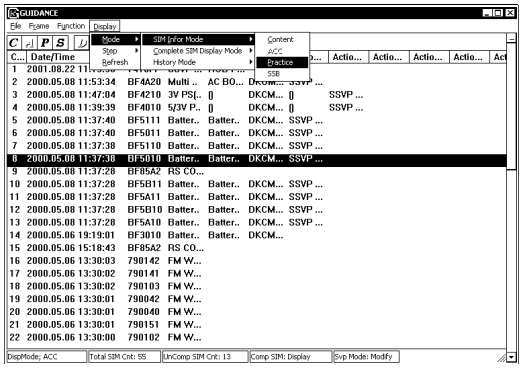
[7] Change of SIM selection screen

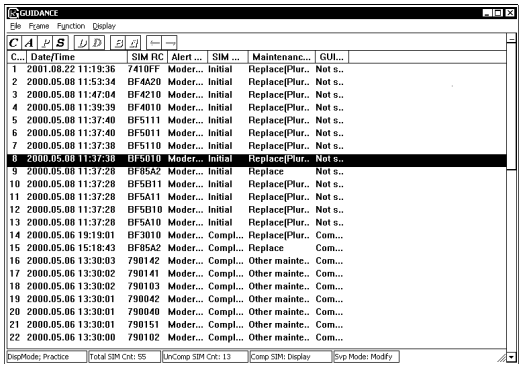
(1) ‘ACC’ screen displayed when select (DR) [ACC] menu or icon.





(2) ‘PRACTICE’ screen displayed when select (DR) [Practice] menu or icon.





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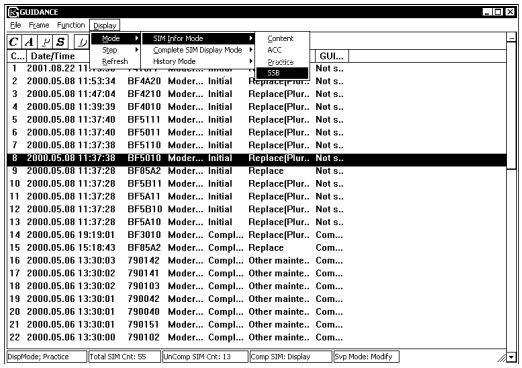
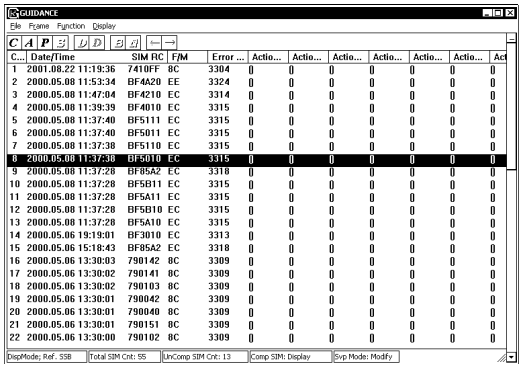
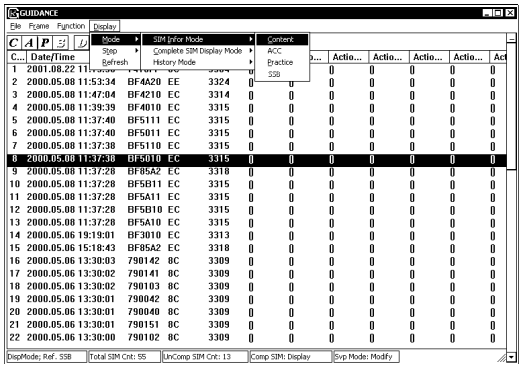
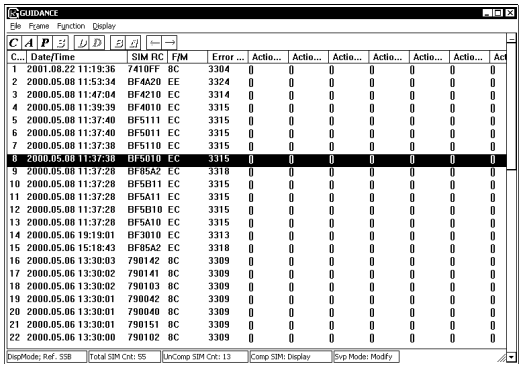
(3) ‘Reference SSB’ screen displayed when select (DR) [SSB] menu or icon.





(4) ‘CONTENT’ screen displayed when select (DR) [Content] menu or icon.





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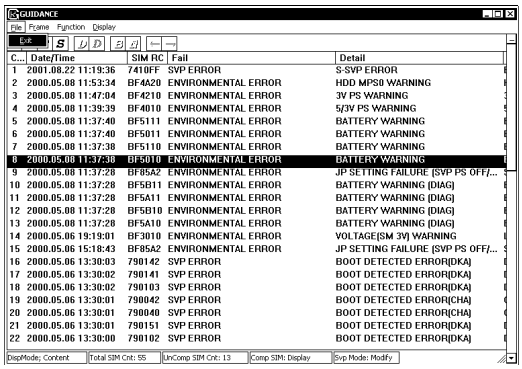
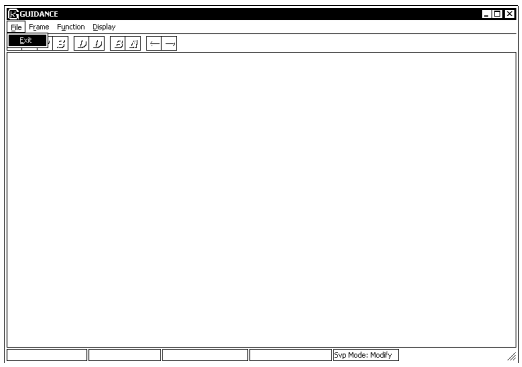
[8] End of Guidance

(1) Select (DR) [Exit] menu at display frame when you want to close screen.



(2) Select (DR) [Exit] menu at initial frame when you want to finish application.



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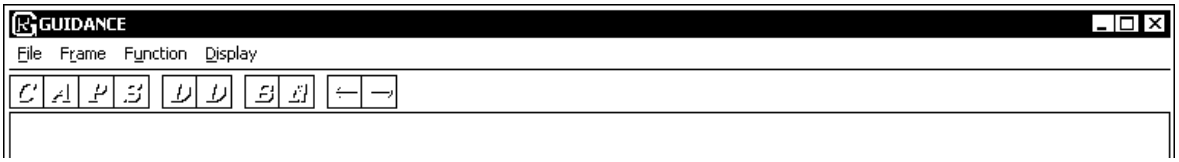
5.6 Detail of Screen

[1] Initial Frame

(1) ICON



C : Display content frame

A : Display ACC frame

P : Display practice frame

S : Display reference frame

D : Change display mode of complete SIM to display

D̄ : Change display mode of complete SIM to not display

B : Display before data

N : Display next data

← : Scroll ACC data to left

→ : Scroll ACC data to right

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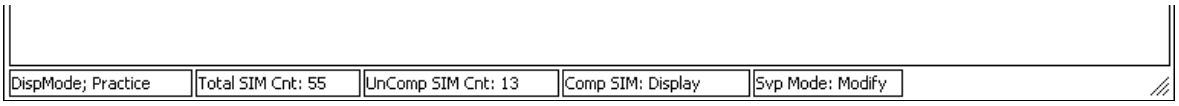
(2) Status Bar



Disp Mode : Frame kind of SIM list display or guidance history display
Total SIM Cnt : SIM count
UnComp SIM Cnt : Un completed SIM count
Comp SIM : Display mode of complete SIM
Svp Mode : SVP mode

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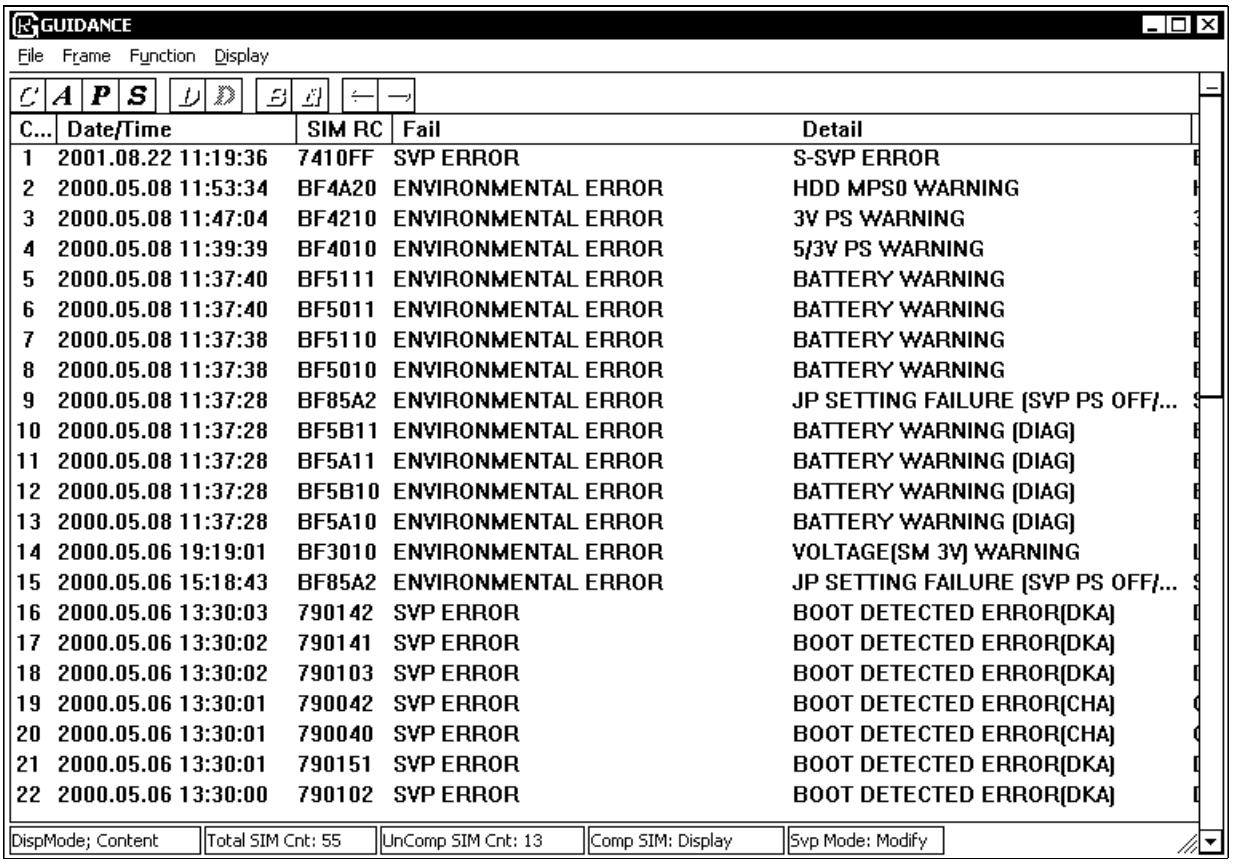
(3) Display Data

(a) SIM selection screen 1(SIM Contents Information)



C	: item number
Date/Time	: Time stamp of SIMLOG generated.
SIM RC	: SIM RC (SSB22, 23, 13)
Fail	: Display location Information by edited SIM RC.
Detail	: Display contents of error by edited SIM RC.
Location	: Display location Information by edited SIM RC. (These contents are the same as Information screen.)

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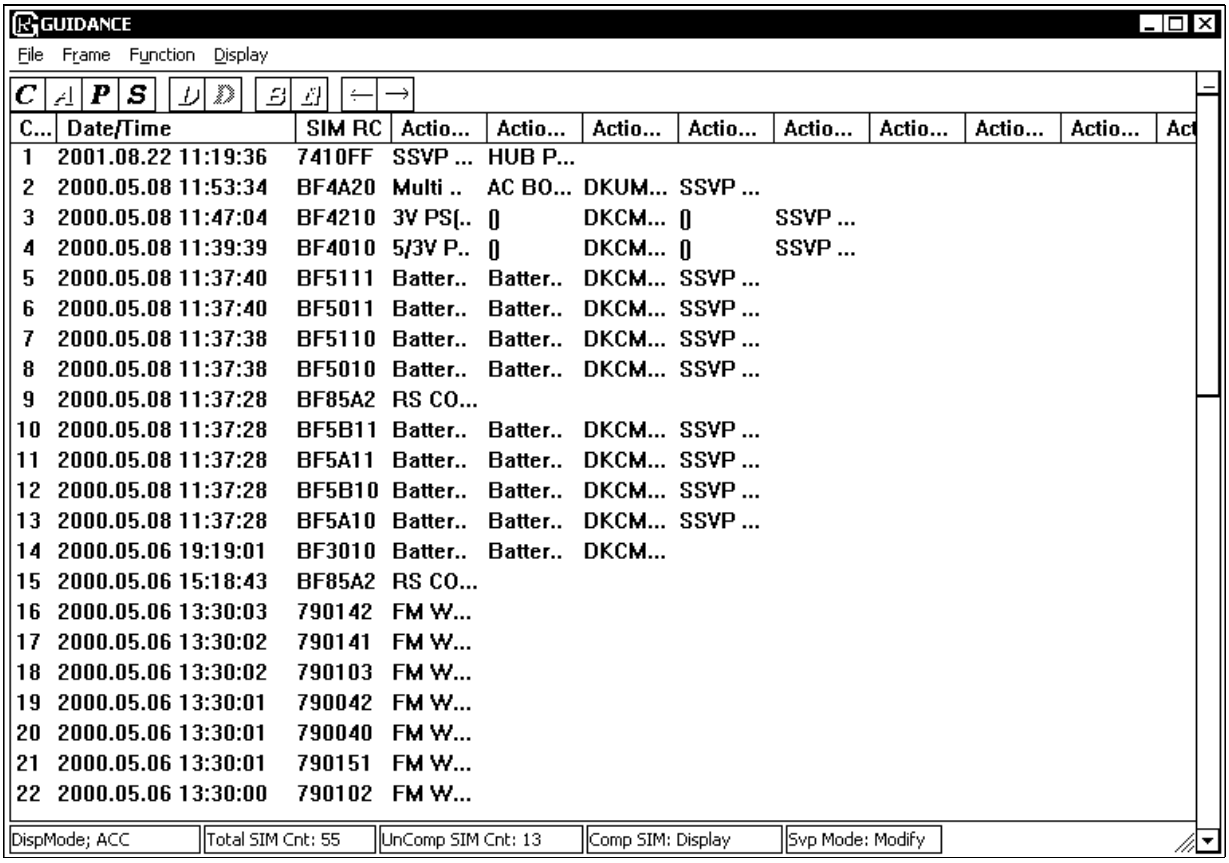
(b) SIM selection screen 2(SIM ACC Information)



P : item number
Date Time : Time stamp of generated SIMLOG.
SIM RC : SIM RC (SSB22, 23, 13)
Action Code : Action Code in SIMLOG

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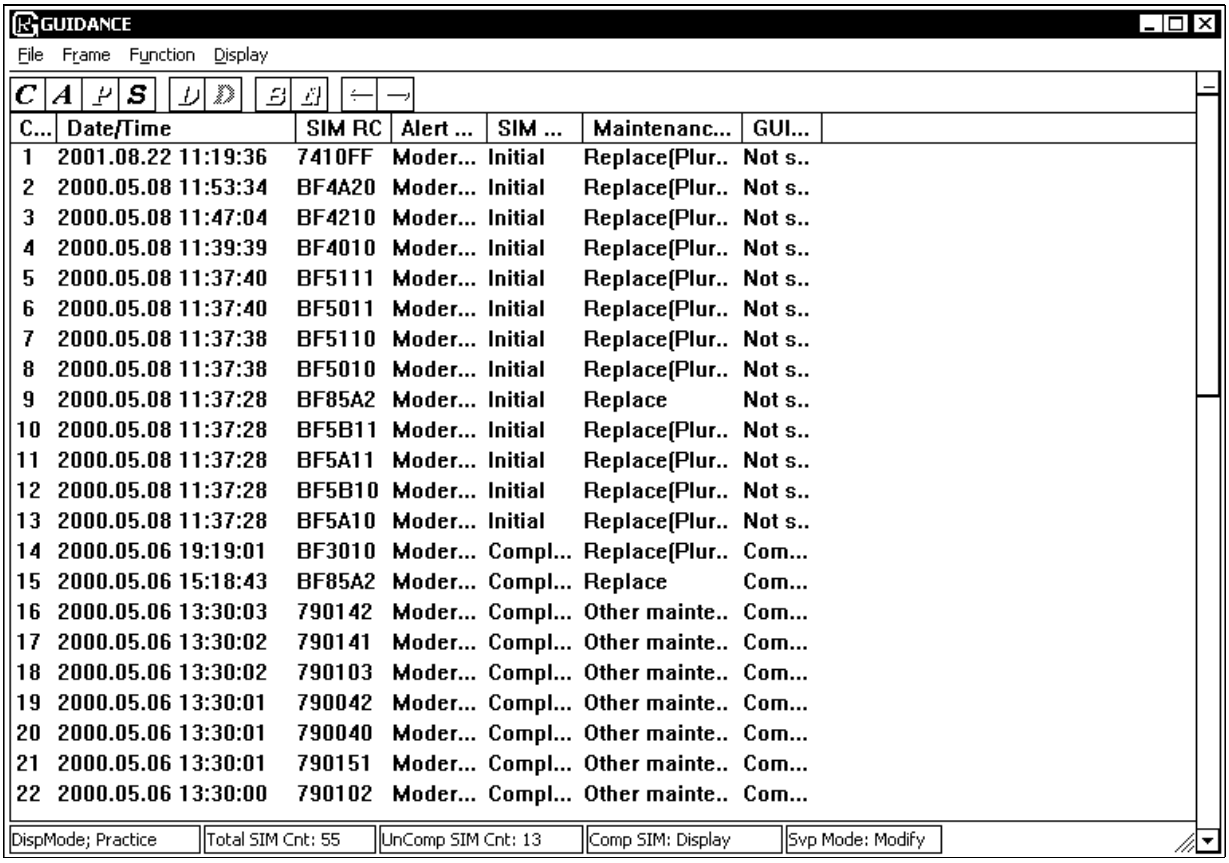
(c) SIM selection screen 3(SIM Practice Information)



P	: item number
Date Time	: Time stamp of generated SIMLOG.
SIM RC	: SIM RC (SSB22, 23, 13)
Alert Level	: SIM alert level (Acute, Serious, Moderate, Service)
SIM Status	: SIM condition (Initial, Complete, Pending)
Maintenance Type	: Kind of Maintenance (Guidance, Replace, Others, Nothing)
Guidance Status	: Guidance condition (Available, Not Available, Not Supported, Completed)

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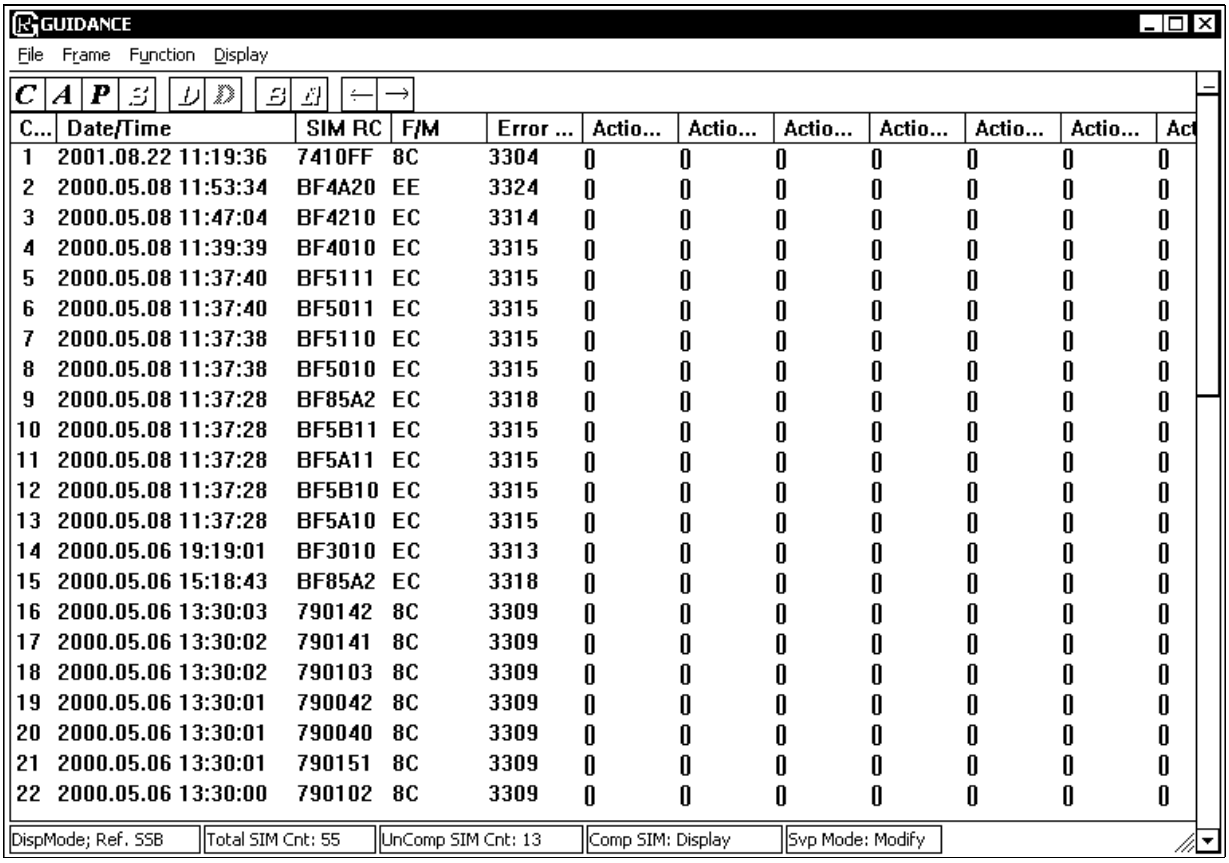
(d) SIM selection screen 4 (Reference SSB Information)



C...	Date/Time	SIM RC	F/M	Error ...	Actio...	Actio...	Actio...	Actio...	Actio...	Actio...	Act
1	2001.08.22 11:19:36	7410FF	8C	3304	0	0	0	0	0	0	0
2	2000.05.08 11:53:34	BF4A20	EE	3324	0	0	0	0	0	0	0
3	2000.05.08 11:47:04	BF4210	EC	3314	0	0	0	0	0	0	0
4	2000.05.08 11:39:39	BF4010	EC	3315	0	0	0	0	0	0	0
5	2000.05.08 11:37:40	BF5111	EC	3315	0	0	0	0	0	0	0
6	2000.05.08 11:37:40	BF5011	EC	3315	0	0	0	0	0	0	0
7	2000.05.08 11:37:38	BF5110	EC	3315	0	0	0	0	0	0	0
8	2000.05.08 11:37:38	BF5010	EC	3315	0	0	0	0	0	0	0
9	2000.05.08 11:37:28	BF85A2	EC	3318	0	0	0	0	0	0	0
10	2000.05.08 11:37:28	BF5B11	EC	3315	0	0	0	0	0	0	0
11	2000.05.08 11:37:28	BF5A11	EC	3315	0	0	0	0	0	0	0
12	2000.05.08 11:37:28	BF5B10	EC	3315	0	0	0	0	0	0	0
13	2000.05.08 11:37:28	BF5A10	EC	3315	0	0	0	0	0	0	0
14	2000.05.06 19:19:01	BF3010	EC	3313	0	0	0	0	0	0	0
15	2000.05.06 15:18:43	BF85A2	EC	3318	0	0	0	0	0	0	0
16	2000.05.06 13:30:03	790142	8C	3309	0	0	0	0	0	0	0
17	2000.05.06 13:30:02	790141	8C	3309	0	0	0	0	0	0	0
18	2000.05.06 13:30:02	790103	8C	3309	0	0	0	0	0	0	0
19	2000.05.06 13:30:01	790042	8C	3309	0	0	0	0	0	0	0
20	2000.05.06 13:30:01	790040	8C	3309	0	0	0	0	0	0	0
21	2000.05.06 13:30:01	790151	8C	3309	0	0	0	0	0	0	0
22	2000.05.06 13:30:00	790102	8C	3309	0	0	0	0	0	0	0

P : item number
Date Time : Time stamp of generated SIMLOG.
SIM RC : SIM RC (SSB22, 23, 13)
F/M : Format / Message of SSB related to SIM
Error Code : Error Code of SSB related to SIM
Action Code : Action Code of SSB related to SIM

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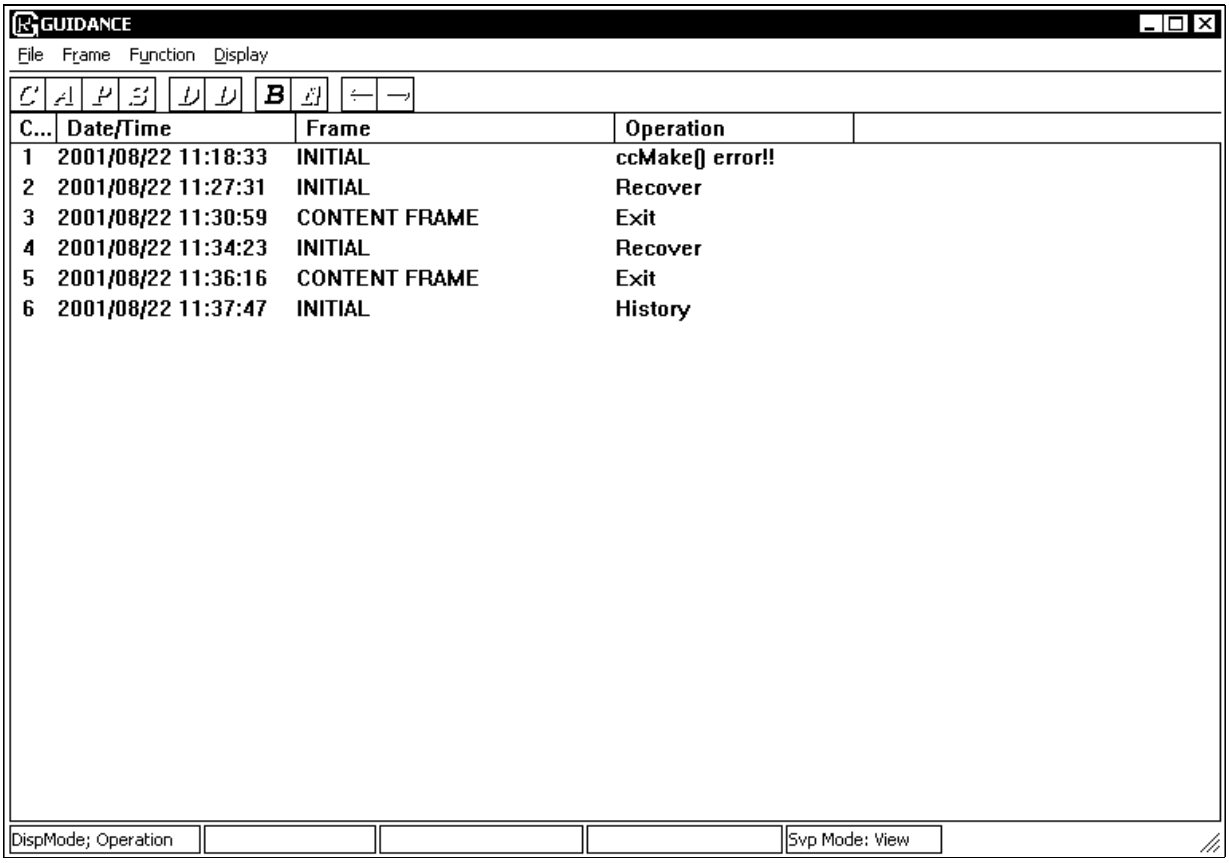
(e) History screen1(Operation History)



Date/Time : Time stamp of executed guidance function.
Frame : Display troubleshoot ID.
Operation : Display result execution.

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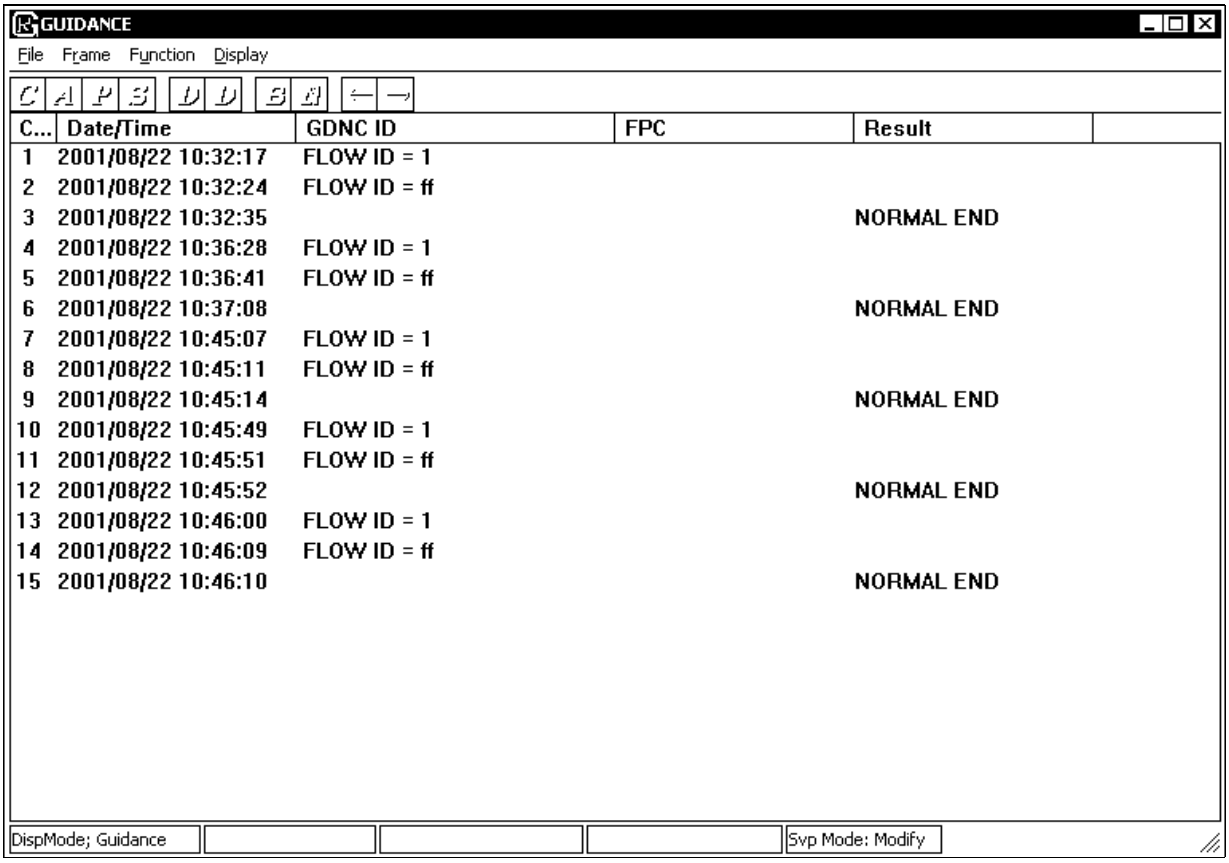
(f) History screen2(Guidance Information)



Date/Time : Time stamp of executed guidance function.
Gdnc id : Display troubleshoot ID.
FPC : Display ACC of Replace Part
Result : Display result execution.

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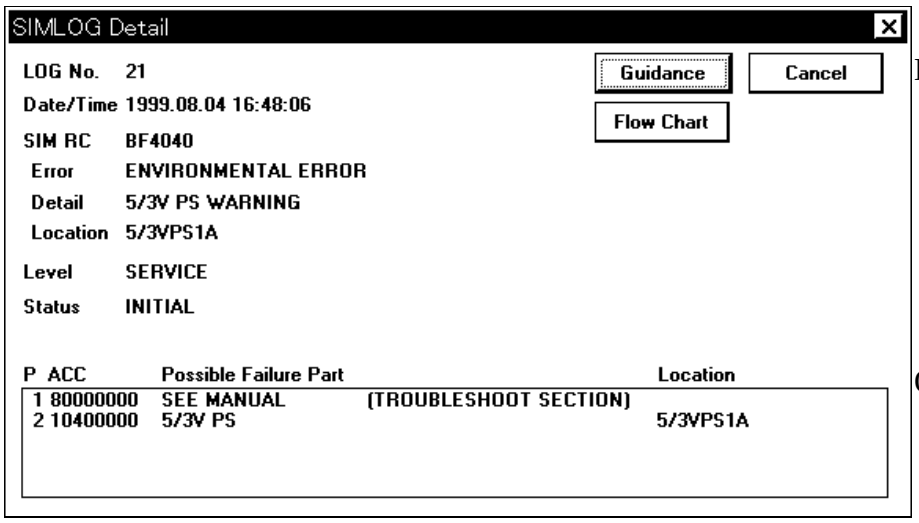
[2] SIMLOG detail screen



(1) Display part

This part is the same as the Information screen.

(2) Operation part

Guidance : Executes a Guidance function.

Cancel : Returns to the previous screen.

Flow Chart : Displays flow chart for Guidance function.

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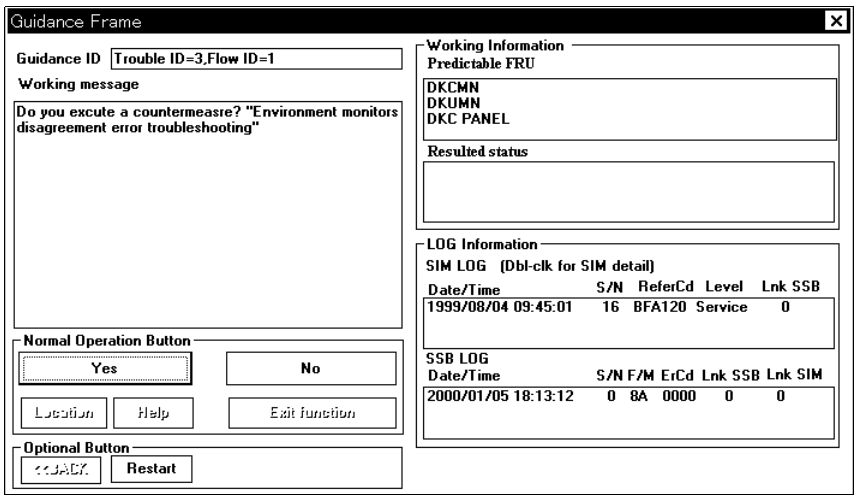
[3] Guidance frame screen



Guidance ID	: Displays trouble ID, flow ID on the current procedure.
Working Message	: Displays contents of next procedure (or current procedure).
Yes/No button	: Refers to Working Message for you to choose (CL) the [Yes]/[No] button.
Location button	: Displays replace part, location on the help screen linked to the Working Message.
Help button	: Displays additional information on the help screen.
Exit function button	: When a Guidance function is finished, select (CL) the [Exit function] button according to the Working Message.
BACK button	: Back to the previous condition ID.
Restart/Force Exit button	: Restart : Quits the procedure and restarts with initial procedure. Force Exit : Forced end of guidance function.
Predictable FRU	: Displays predicted FRU when the Guidance is executed.
Resulted status	: Displays replaced part or Guidance resulted status.
SIM LOG	: Displays object SIM LOG (Select (DC) SIM LOG so that you can display the SIM detail screen). : If the content of SIM LOG is abnormal, “SIM LOG is invalid.” is displayed. When the Lnk SSB is invalid, Lnk SSB number is not displayed. (Space)
SSB LOG	: Displays SSB LOG linked SIM LOG. When the linked SSB or the linked SIM is invalid, each number is not displayed. (Space) Depending on the first SSB LOG, the following messages are displayed. (The second or later SSB LOGs are not displayed.)

① Related SSB do not exist. : Linked SSB in the SIM LOG is invalid.
② Related SSB can not read. : In case of the related SSB can not read.
(Retry Restart Guidance) (Guidance can be continued. If you obtain the same result when you make another attempt, it means that the related SSB does not exist.)
③ Related SSB is invalid. : SSB LOG content is abnormal.

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5.7 Message of T.S.C CALL

MSG NO	ID NO	TRBL NO	Message
01	0x0101	1	The ACC in the SIM “BF4XXX” has data other than 3VPS, 5/3VPS, SUBPS, MPS.
02	0x0102	2	The wrong data exists on Byte13 of the SIM “BF2XYY”.
03	0x0103	2	The wrong data exists on Byte23 of the SIM “BF2XYY”.
04	0x0104	2	You can’t measure error because of the failed cluster is now active.
05	0x0105	2	Measured the failed cluster, but the voltage alarm is still detected.
06	0x0106	2	You can’t measure error because of the failed cluster is now active.
07	0x0107	2	You can’t measure error because of the failed HDU is now active.
08	0x0108	2	Measured the failed HDU, but the voltage alarm is still detected. Pin5 and pin6 of Pxx-1 are short-circuit. Passed Flow-ID = 3E
09	0x0109	2	Measured the failed HDU, but the voltage alarm is still detected. pin7 and pin8 of Pxx-1 are short-circuit. Passed Flow-ID = 5A
0A	0x010A	2	Measured the failed HDD, but the voltage alarm is still detected.
0B	0x010B	2	Measured the failed DKUMN, but the voltage alarm is still detected.
0C	0x010C	2	Checked the PCB short-circuit of the failed cluster, but can’t identify the cause of the failure. SIMRC byte13 $\neq$ 10 Passed Flow-ID = 87
0D	0x010D	2	Checked the PCB short-circuit of the failed cluster, but can’t identify the cause of the failure. SIMRC byte13 =10 Passed Flow-ID = 8E
0E	0x010E	3	Replaced PCB of the failed cluster, but the voltage alarm is still detected.
0F	0x010F	3	Replaced the failed DKCMN, but the environment monitors mismatch error is still detected.
10	0x0110	3	Replaced the failed DKCMN, DKC PANEL, but the environment monitors mismatch error is still detected.
11	0x0111	3	Can’t identify the cause of the environment monitors mismatch error. DKCMN and DKUMN are not blinking. Passed Flow-ID = 41
12	0x0112	3	Can’t identify the cause of the environment monitors mismatch error. Replaced DKUMN, but DKUMN is blinking. Passed Flow-ID = 47
13	0x0113	3	Can’t identify the cause of the environment monitors mismatch error. Can’t execute PSOFF. Passed Flow-ID = 5A
14	0x0114	3	Can’t identify the cause of the environment monitors mismatch error. DKUMN is not blinking. Passed Flow-ID = 60
15	0x0115	3	Replaced the failed DKUMN, but the environment monitors mismatch error is still detected.
16	0x0116	3	Can’t identify the cause of the environment monitors mismatch error. Blinking either DKCMN or DKUMN. Passed Flow-ID = 76
17	0x0117	3	Can’t identify the cause of the environment monitors mismatch error. Blinking either DKCMN or DKUMN. Passed Flow-ID = 7C
18	0x0118	3	Replaced the failed DKC PANEL, but the environment monitors mismatch error is still detected.
19	0x0119	3	Can’t identify the cause of the environment monitors mismatch error. Blinking DKCMN. Passed Flow-ID = 90

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MSG NO	ID NO	TRBL NO	Message
1A	0x011A	3	Replaced the failed DKCPANEL, DKUMN, but the environment monitors mismatch error is still detected.
1B	0x011B	5	LDEV Blocking (SIM = CF90XX, DFAXXX, DFBXXX, EF9XXX) can't execute for Guidance.
1C	0x011C	4	Common Fiber Error (SIM = DF6XXX, DF7XXX, DF8XXX, DF9XXX) can't execute for Guidance.
1D	0x011D	7	RIO PATH Closed (SIM = 2180XX) can't execute for Guidance.
1E	0x011E	8	AL_PA value conflict (SIM = 2190XX) can't execute for Guidance.
1F	0x011F	9	Replace failure (SIM = 3993XX, 3D93XX) can't execute for Guidance.
20	0x0120	0a	CHT PCB type inconsistency (SIM = 399FX0) can't execute for Guidance.
21	0x0121	0b	Shared Memory (Real memory size inconsistent) failure (SIM = FFE3XX) can't execute for Guidance.
22	0x0122	0c	Shared Memory failure (SIM = FFD3XX) can't execute for Guidance.
23	0x0123	0d	Shared Memory (Loss of duplicated information) failure (SIM = FFDEXX) can't execute for Guidance.
24	0x0124	0e	HRC/HODM/HORC failure can't execute for Guidance.
25	0x0125	0f	HMRCF/HOMRCF failure (SIM = 47DXXX) can't execute for Guidance.
26	0x0126	—	The Guidance function was force finished for the FORCEEND button, after performed replace etc.
27	0x0127	10	HIHSM failure (SIM = 47FXXX) can't execute for Guidance.

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