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[LAN Board REPLACEMENT PROCESSING - RLAB]

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1. Replacing a LAN Board

NOTE: The Controller Board is blocked by this maintenance work. Check that the alternate path of the path that uses the Channel Board in the target Controller Board is set for the Channel Board in the Controller Boards other than the target Controller Board. If the alternate path is not set, it is necessary to set the alternate path or stop host I/O. Consult with the customer and then perform the work.

1. Connecting the Maintenance PC
   Connect the Maintenance PC to the SSVP, and then log in to the SVP.
   - "Attachment/Removal Procedure of Maintenance PC" (INST(IN)13-02-10)
   - "Connection to the SVP" (SVP01-30)

2. Starting the SVP window
   From the menu of Web Console, click [Maintenance Components] - [Maintenance Other Components].

3. Changing the operation mode
   Change the mode to [View Mode].

4. Starting Maintenance Utility
   See Table 1-1 to check the Controller Board to which Maintenance Utility is connected.
   Specify an appropriate CTL number, and then start Maintenance Utility. (See "Starting Maintenance Utility by Specifying CTL" (MU01-50).)

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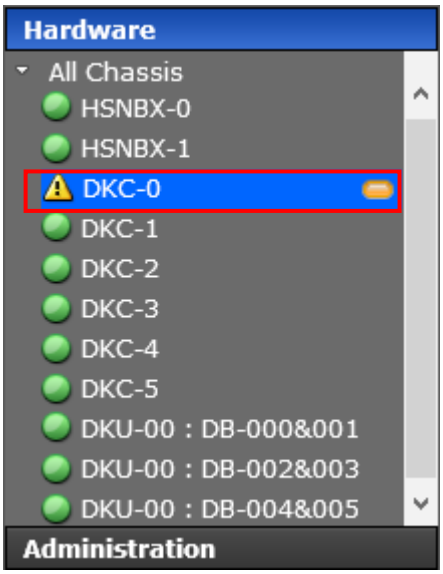
Table 1-1 Correspondence between Controller Board in which LAN Board is replaced and Controller Board to which Maintenance Utility Is Connected.

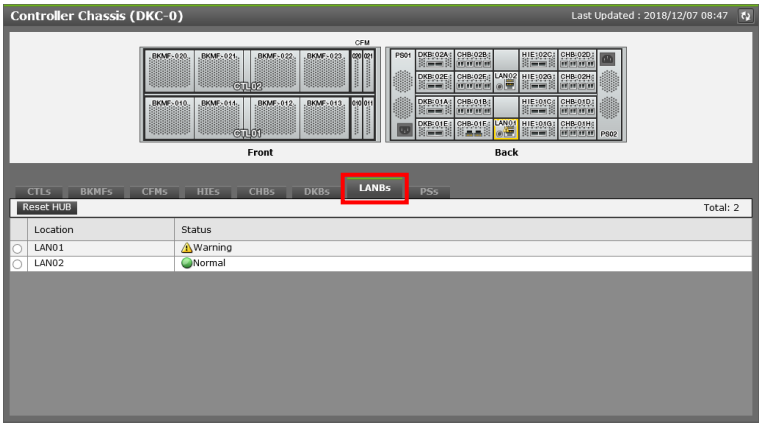
Controller Board in which LAN Board is replaced	LAN Board to which Maintenance Utility is connected	
	Single SVP configuration	Dual SVP configuration
CTL01	Other than CTL01 or CTL02	Other than CTL01
CTL02	Other than CTL01 or CTL02	Other than CTL02
CTL11	Other than CTL11 or CTL12	Other than CTL11
CTL12	Other than CTL11 or CTL12	Other than CTL12
CTL21	Other than CTL21 or CTL22	Other than CTL21
CTL22	Other than CTL21 or CTL22	Other than CTL22
CTL31	Other than CTL31 or CTL32	Other than CTL31
CTL32	Other than CTL31 or CTL32	Other than CTL32
CTL41	Other than CTL41 or CTL42	Other than CTL41
CTL42	Other than CTL41 or CTL42	Other than CTL42
CTL51	Other than CTL51 or CTL52	Other than CTL51
CTL52	Other than CTL51 or CTL52	Other than CTL52

NOTE : For example, when replacing LAN Board in CTL01, connect to the following CTL.
- Single SVP configuration: Other than CTL01 or CTL02
- Dual SVP configuration: Other than CTL01

5. Selecting replacement parts by Maintenance Utility.
   (1) <Main window>
   Select [DKC-X] in the main window.



   (2) <Controller Chassis window>
   Click the [LANBs] tab in the Controller Chassis window to display a LAN Board status.
   See "Alert Display Related to FRU (Field Replacement Unit)" (MU02-10) for [Status].

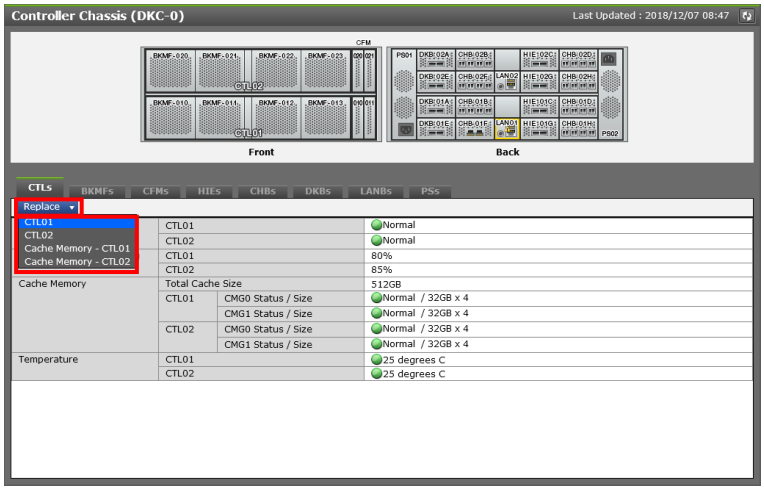


   NOTE: Do not reset the HUB except when directed by the Technical Support Division.

(3) <Select Controller Board>

(a) Click the [CTLs] tab.

(b) Click [Replace], and select the Controller Board in which the LAN Board to be replaced is installed.



(4) <Block Controller Board>

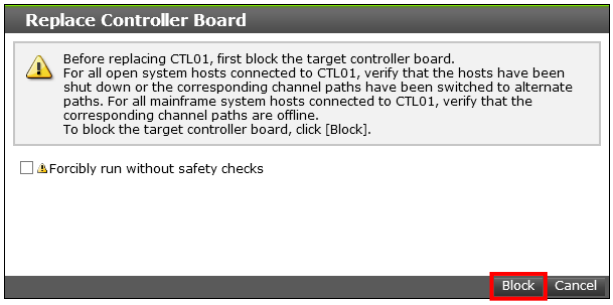
⚠ CAUTION

About "Forcibly run without safety checks":

If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the message, the manual or the contact described in the manual.
When the remote copy (True Copy, Universal Replicator, and global-active device) is used in the target storage system, see "Note on Deleting Remote Paths" (REP(GE)01-60).
When Universal Volume Manager is used for the target storage system, see "Notes on Maintenance Work for the Storage System for which External Paths Are Configured" (REP(GE)01-61).

Check that the Controller Board has the LAN Board to be replaced, and then click [Block].
If a message other than the described is displayed, refer to Message Section (MSG00-00).

NOTE: The error list window is displayed if multiple errors are detected by the prior check. If it is displayed, click the text of "Error Code" and recover the failures or the blockade in accordance with the details of the displayed errors.



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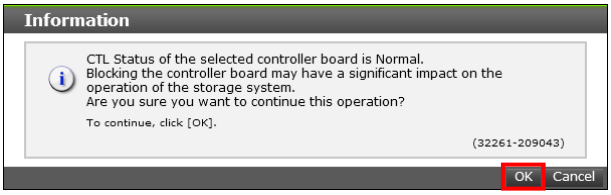
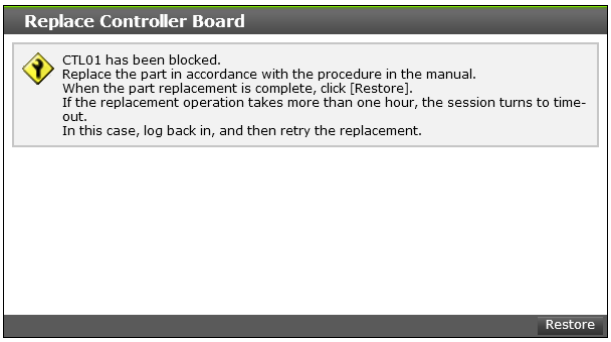
(5) <Check Controller Board>
Check that the Controller Board to replace the LAN Board is correct again and click [OK].



(6) <Check the beginning of LAN Board replacement>
Check that the Controller Board is blocked and becomes ready for replacing.

NOTE : Do not click [Restore] at this time.
Click [Restore] after completing the replacement work.



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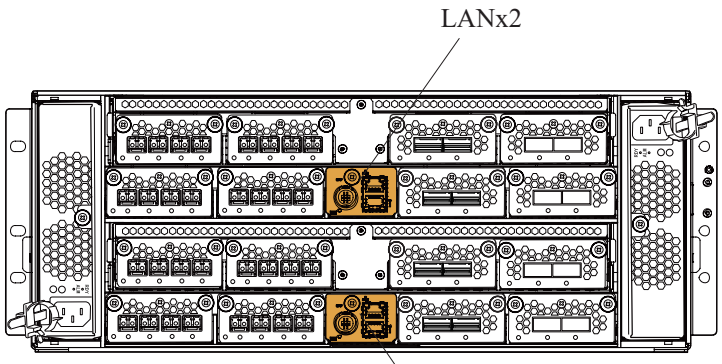
6. DKC LAN Board Replacement Processing

Location	Function Name of Component		Part Name
Rear of DKC	1	LAN Board	LAN Board



Rear view of DKC -x

*1: DKC-x
└→DKC No. (0, 1, 2, ... , 5)

NOTICE: To prevent part failures caused by static electrical charge built up on your own body, be sure to wear a wrist strap connected to the Storage System before starting and do not take it off until you finish. Refer to "Note on Installing and Removing Parts" (REP(GE)01-30).

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(1) Check that the ALM LED (red) on the Controller Board to be replaced in the DKC is lit.

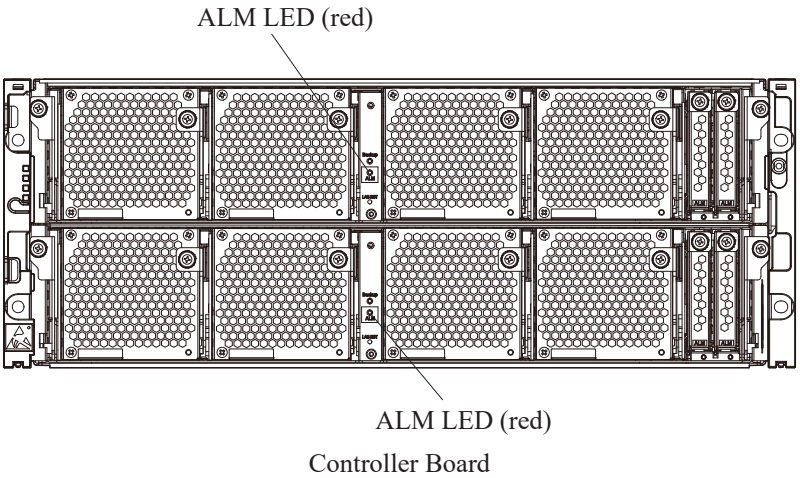
NOTE: The ALM LED (red) on the Controller Board might not light up depending on the failure. In such a case, perform the following steps in order from ① to ③ to locate the Controller Board to be replaced.

Step ① :
For VSP 5100 and VSP5100H, when either of the ALARM LED ((LOC03-70), No. 5-4) on DKC-0 or that on DKC-1 is lit, perform the procedure from Step (2) on the Controller Board in the DKC on which the ALARM LED ((LOC03-70), No. 5-4) is lit. When both of the ALARM LED ((LOC03-70), No. 5-4) on DKC-0 and that on DKC-1 are lit, go to Step ② .
For VSP 5500 and VSP 5500H, go to Step ② .

Step ② :
Turn on the Locate LED (see "Turn on/off Locate LEDs" (MU02-40)) to locate the Controller Board to be replaced, and then perform the procedure from Step (2). If the Locate LED does not light up, go to Step ③ .

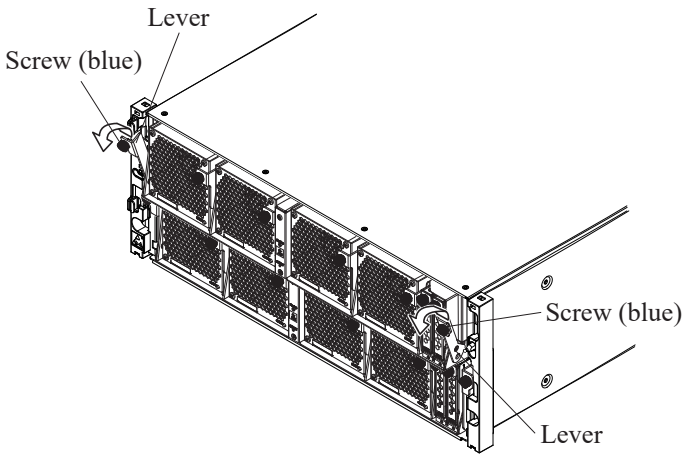
Step ③ :
Confirm the location (LOC02-40) of the Controller Board in which the LAN Board to be maintained is installed so as not to remove a different Controller Board, and then perform the procedure from Step (2).

Figure 1-1 ALM LED Position



(2) Loosen the right and left screws (blue) on the lever of the Controller Board to be replaced in the front of the DKC and open the lever.

Figure 1-2 Removing Controller Board (DKC)



NOTICE: After removing the Controller Board, the LEDs (POWER/READY/ALARM) might go out.
If the LED on the front goes out, check that anything other than the Controller Board is normal in the Maintenance Utility window and continue the replacement.
The READY LED (green) on the front of DKC lights up after performing "7. Restoring replacement parts by Maintenance Utility".

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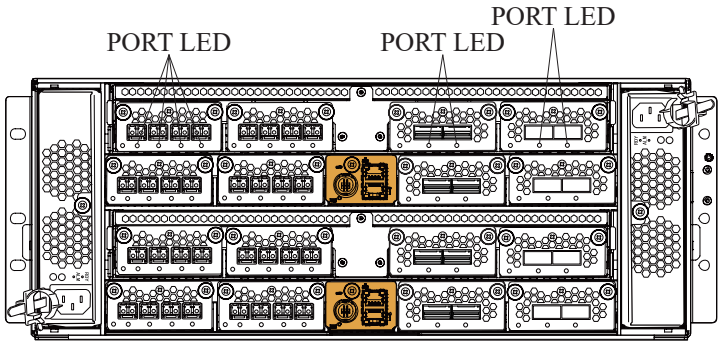
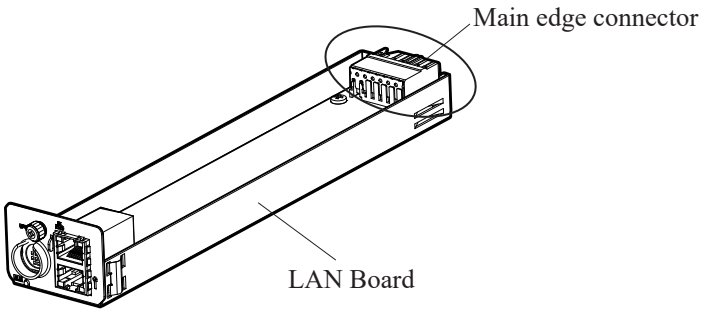
(3) Replace the LAN Board.

NOTICE: The LAN ALARM LED on the LAN Board to be replaced does not light up. The LAN Board installed in the removed Controller Board is the target for replacement. The PORT LEDs on all CHBs/DKBs/HIEs installed in the removed Controller Board go off. Identify the LAN Board to be replaced by checking the statuses of those LEDs.



Rear view of DKC -x

NOTICE: When removing the LAN Board, hold it with both hands and remove it straight not to apply a shock to with any components.



NOTICE: If LAN Boards are inserted randomly, malfunction may occur. Therefore, insert the LAN Boards in two steps, Step (d) and Step (e) shown below.

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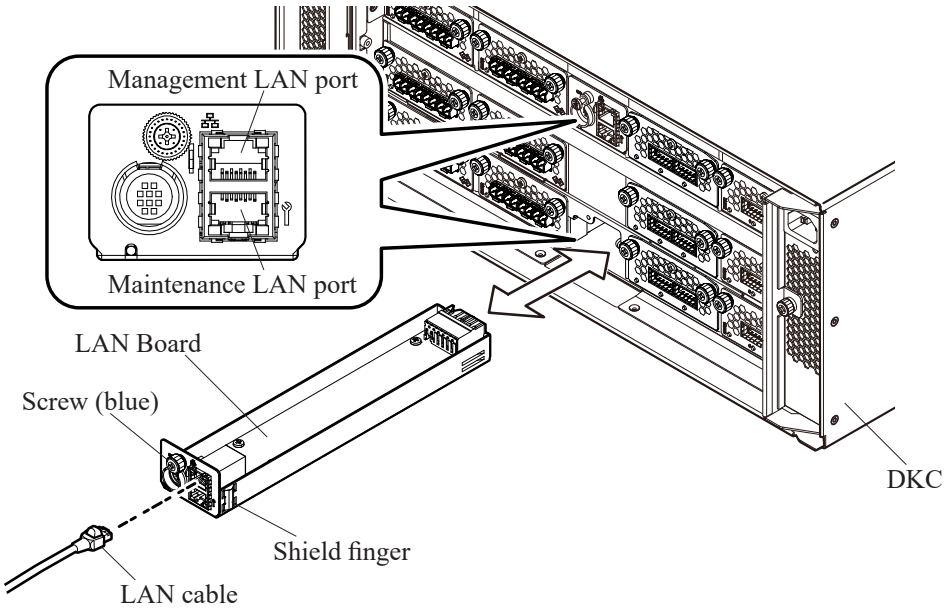
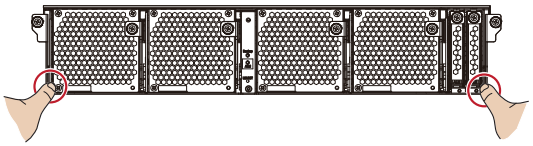
(a) When LAN cables are connected to the connectors on the LAN Boards, remove the LAN cables.
(b) Loosen the one screw (blue) which fixed the LAN Board.
(c) Pull out and remove the LAN Board while holding its screw.
(d) Insert the LAN Boards to be added into the slots just before the shield finger.
(e) Push the LAN Boards gently all the way in.
(f) Tighten the one screw (blue) to fix the LAN Board.
(g) Connect the LAN cables removed in Step (a) to the connectors.
If the LAN cables have been connected to the management LAN port and the maintenance LAN port, be careful not to connect the LAN cables to wrong ports.

Figure 1-3 Replacement of LAN Board



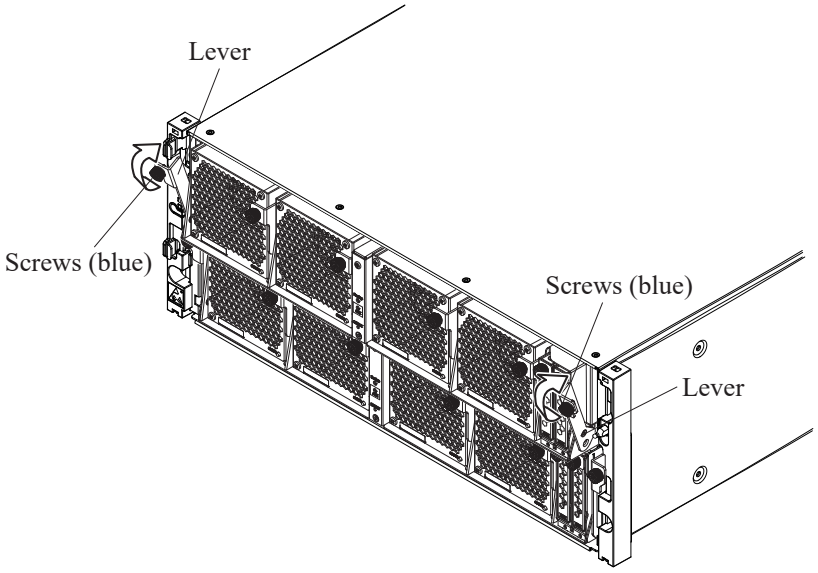
(4) Push the Controller Board all the way in and close the right and left levers completely.

NOTICE: Push the bottom of the front side of the Controller Board all the way to insert it to the end.



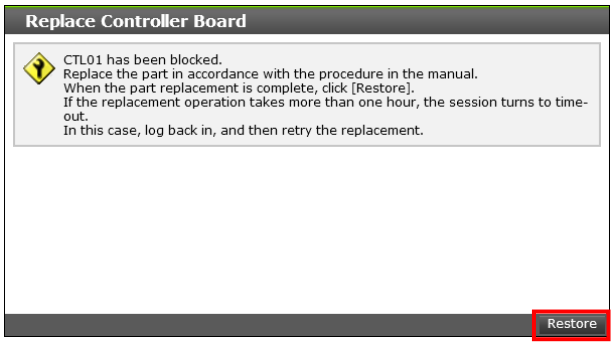
(5) Tighten the screws (blue) and fix the Controller Board.

Figure 1-4 Fixing the Controller Board

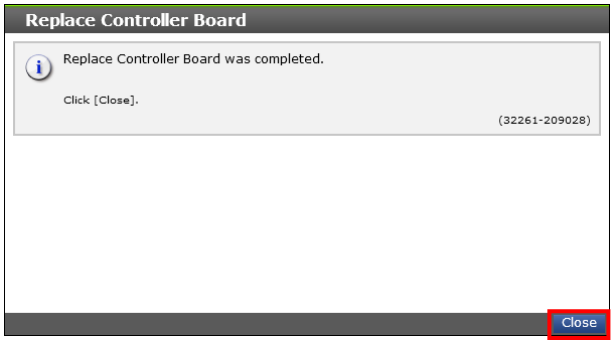


7. Restoring replacement parts by Maintenance Utility

(1) <Restore replacement parts>
Click [Restore].



(2) <Check replacement parts restoration>
Check that the following message is displayed and click [Close].
If a message other than the described is displayed, refer to Message Section (MSG00-00).



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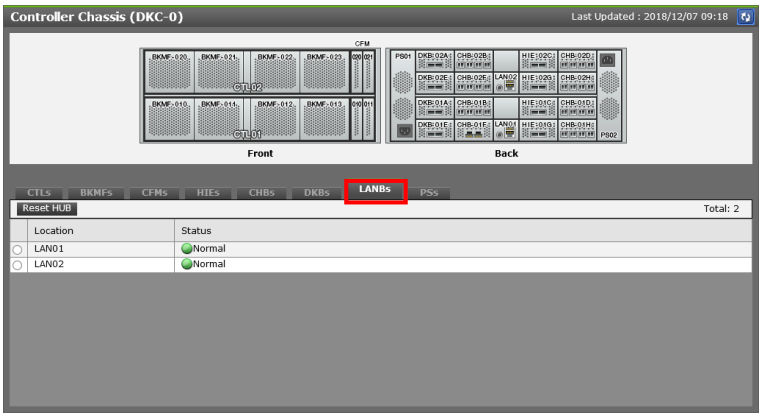
(3) <Check LAN Board restoration>
Click the [LANBs] tab in the Controller Chassis window and check that a Status of the replaced LAN Board is “Normal”.



8. Closing Maintenance Utility
(1) Click [Logout] to close the window.

(2) <Get the error information>
Get dumps with “Dump Type: Rapid” by referring to “Dump/Auto Dump” (SVP02-09-10).

(3) Refer to the “Use of OnlineDumpTool” (SVP02-21-10), please upload the error information.

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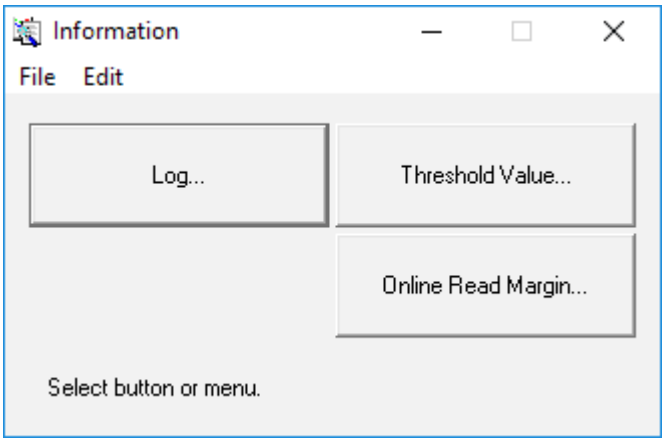
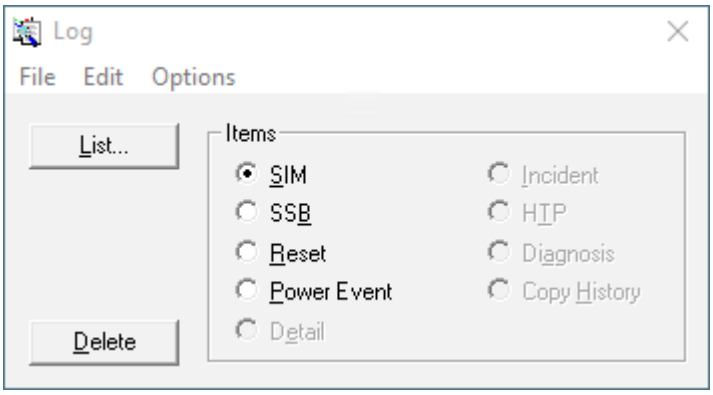
9. Completing the SIM log
   (1) Change the mode to [Modify Mode], and then select [Information].

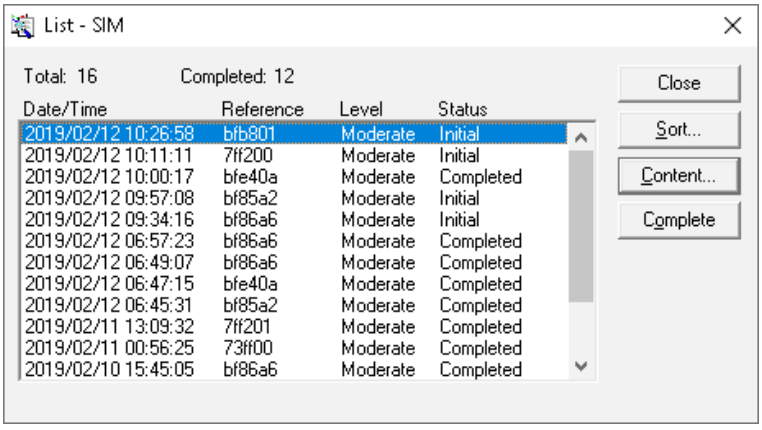
   (2) In the Information window, click [Log...].



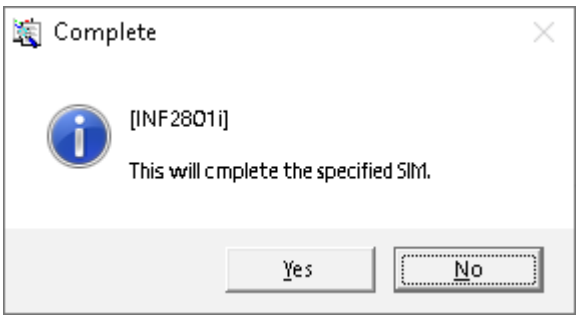
   (3) In the Log window, select [SIM] and then [List...].



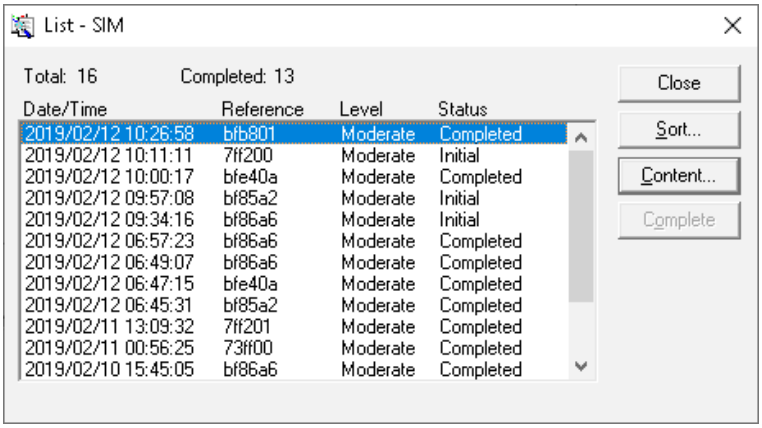
   (4) In the List-SIM window, select the data for which you end the process, and then click [Complete].



(5) In the Complete window, click [Yes].



(6) In the List-SIM window, confirm that the "Status" of the data has become "Completed".



(7) In the List-SIM window, click [Close].
Close the Log window, then the Information window.
Change the mode from [Modify Mode] to [View Mode].

NOTE: If the MESSAGE LED is lit on the HSNPANEL after you complete all SIMs, display SIMs to check that SIM statuses are "Completed". If SIM statuses are not "Completed", wait for five minutes, and then perform the procedure for completing the SIM log again.

10. Checking Normality
Perform the normality check according to "Checking Normality (TRBL02-06-10)".

11. Executing LAN Check
Perform a diagnosis of LAN Check (DIAG03-10).
When there is an error, perform "Recovery Procedure for Error Parts Detected by LAN Check" (TRBL02-04-440).