

DIAGNOSIS SECTION

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1. Types of Diagnosis

This storage system's diagnostics consist of the six types of test routines listed below. They are selected according to the purpose and the part to be tested.

Table 1-1 Diagnostics Test Routines

Item No.	Type	Diagnosis	Part	Timing
1	CUDG3/ FCDG3	Initial diagnoses	CHA, DKA, CACHE MEMORY, MP, MSW, BKM	When DKC is powered on or CHA or DKA or MP is replaced or installed (automatic).
2	CUDG4	Functional diagnoses executed when the unit is offline	CHA, DKA, CACHE MEMORY, MP, MSW, BKM	During installation (as specified by service personnel).
3	INLINE CUDG	Functional diagnoses executed when the unit is online	CACHE MEMORY, BKM	When Cache is replaced or installed (automatic).
4	DKU INLINE	DKA-HDU functional (connection) check	DKA, SSW, HDD	When an HDD is replaced (automatic) or during installation (as specified by service personnel).
5	DKU PATH INLINE	↑	DKA, SSW, HDDFAN	↑
6	LAN	LAN check between DKC and SVP	SVP, SSVP, DKA, CHA	When LAN communication error or communication time-out error is occurred.
7	DKA	Encryption chip status check	DKA	When checking whether the encryption function of DKA is normal.

2. DIAG Details

2.1 CUDG3 (Control Unit Diagnosis 3) / FCDG3 (Fibre Channel module Diagnosis 3)

CUDG3/FCDG3 is a collection of test routines that are started at system start time (when the unit power is turned on), prior to the execution of the main program and automatically checks the basic functions of the unit to ensure the normal hardware operation of the system. The CUDG3/FCDG3 routines are listed in Table 2.1-1.

Table 2.1-1 CUDG3/FCDG3 Test Routines

Item No.	Routine Name	Function
1	CUDG3B	Local memory/Processor diagnosis
2	CUDG3C1	Processor diagnosis
3	CUDG3C6E	MSW occupation part diagnosis by a delegated processor in MPPK
4	CUDG3C6	Shared resource diagnosis by a delegated processor (CACHE)
5	CHA/DKA Test	CHA/DKA diagnosis by a delegated processor
6	FCDG3	For Serial/Parallel port, read/write test, internal diagnostic test, communication diagnostic test

2.2 CUDG4 (Control Unit Diagnosis 4)

CUDG4 supports Cache memory read after full write tests and other tests that cannot be covered by CUDG3/FCDG3. It is executed by the service personnel when the unit is offline. After CUDG4, the storage system PS OFF/ON is mandatory in order to return to ONLINE status of the storage system.

2.2.1 CUDG4

⚠ CAUTION

If CUDG4 is executed, it may become impossible to guarantee the data on Cache Memory.

- ① Execute PS OFF and ON before CUDG Test. The data on CACHE is stored to HDD.
- ② Be sure to check the validity of CUDG Test to Technical Support Division before CUDG Test.

The CUDG4 test routines are listed in Table 2.2.1-1.

The CUDG4 run option are listed in Table 2.2.1-2.

Table 2.2.1-1 CUDG4 Test Routines

Item No.	Test Item (*2)	Function	Module extending
1	One_LSI_Init_Own_Group (*1)	The hard initialization of the own- module is executed by specified MP.	None
2	One_MPPK_Test	Specified MP PK is diagnosed.	None
3	One_CMPK_Test	CM PK in own-module are diagnosed by specified MP.	None
4	All_CM_PK_Test	CM PK and CACHE MEMORY in own-module are diagnosed by specified MP.	None
5	All_FEBE_PK_Test	Specified CHA/DKA PK is diagnosed by specified MP.	Done
6	All_Diag1_Test	The data transfer diagnosis between each PK is executed by specified MP.	Done
7	All_Cache_Mem_Test1	CACHE MEMORY in own-module are diagnosed by specified MP. (Diagnosis by micro function)	None
8	All_Cache_Mem_Test2	CACHE MEMORY in own-module are diagnosed by specified MP. (Diagnosis by hard function)	None

*1: It is necessary to execute “One_LSI_Init_Own_Group” in advance of other diagnostic routines.

In the execution of “One_LSI_Init_Own_Group”, select all MP.

Execute other diagnostic routines after confirming the normal termination of “One_LSI_Init_Own_Group”.

*2: Test Item that starts by “One” is sequentially executed when two or more MP is selected, and Test Item that starts by “All” is executed in parallel.

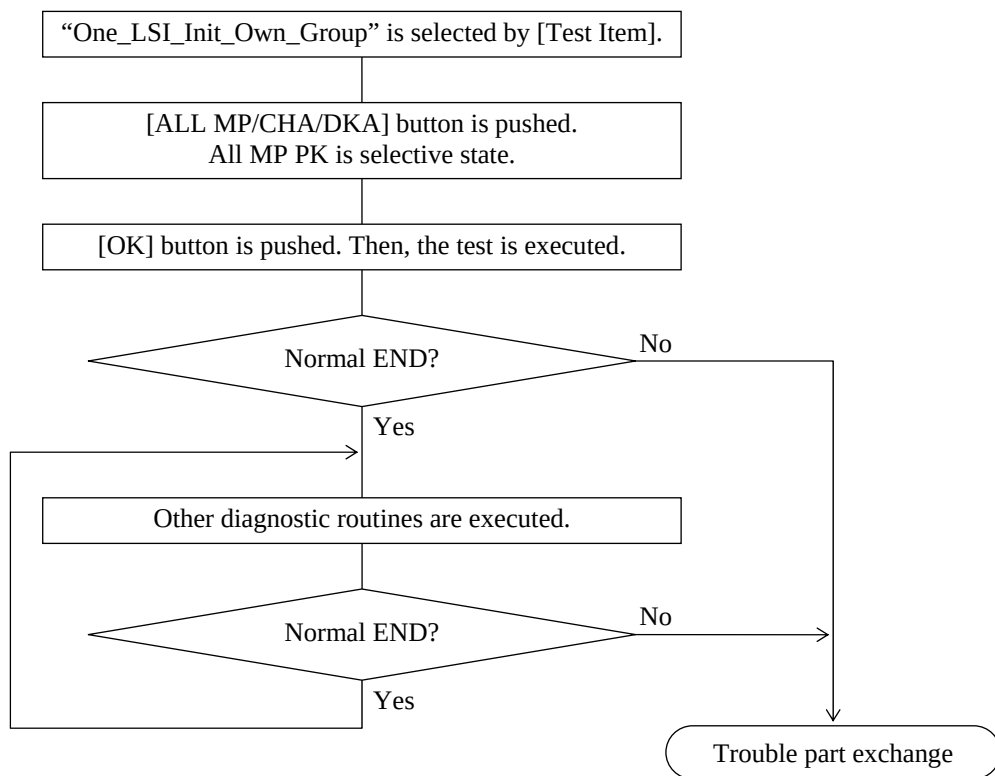
DIAG02-40**[CUDG4 Set Parameter Screen]**

Table 2.2.1-2 CUDG4 Run Option

Item No.	Run Option	If an error is not detected	If an error is detected
1	Normal	CUDG test will be executed only once.	CUDG test will be terminated when an error is detected. And the error detail will be displayed on the SVP screen. After finishing the CUDG function, please refer to Diag log.
2	Loop (Limit less) (*1) (*2)	CUDG test will be executed continuously.	CUDG test will be terminated when an error is detected. And the error detail will be displayed on the SVP screen. After finishing the CUDG function, please refer to Diag log.
3	Loop ___times (*2)	The CUDG test will be executed up to the specified frequency. (2 ~ 999)	
4	Error Loop (Limit less) (*1) (*2)	CUDG test will be executed continuously.	CUDG test continues. And an error detail is displayed on the SVP screen when CUDG test ends. But the CUDG will continues testing.
5	Error Loop ___times (*2)	The CUDG test will be executed up to the specified frequency. (2 ~ 999)	
6	Error Log (Limit less) (*1) (*2)	CUDG test will be executed continuously.	CUDG test continuous. And an error detail will be displayed on the SVP screen when CUDG test ends. After finishing the CUDG function, refer to Diag log.
7	Error Log ___times (*2)	The CUDG test will be executed up to the specified frequency. (2 ~ 999)	

*1: When “Limit less” is selected, Test Item that starts by “One” is executed only by head MP# in selected MP. Please specify the test frequency when you operate Test Item that starts by “One” with two or more MP.

*2: Please push [STOP] button when you stop the test continuously executed. [STOP] button might not be accepted unusually. At that time, please push [STOP] button again. It is likely to hang for a few minutes until stopping though the diagnosis time is different according to Test Item.

2.3 INLINE CUDG (INLINE Control Unit Diagnosis)

INLINE CUDG checks the validity of Cache memory when the entire storage system is running normally. The INLINE CUDG test routines are listed in Table 2.3-1.

Table 2.3-1 INLINE CUDG Test Routines

Item No.	Routine Name	Function
1	Cache memory system	CACHE PCB diagnosis
2	CFM, Battery test	BKM PCB diagnosis

2.4 DKU INLINE

The DKU INLINE of test routines are used to ensure that the HDD is accessible to the Disk Controller when one is installed (a new or as an additional unit). This INLINE facility is also executed when a HDD is replaced during online processing as part of the recovery procedure to ensure that the HDD is normal. In this case, this INLINE facility runs automatically (with no SVP manipulation). The test routines are listed in Table 2.4-1.

Table 2.4-1 DKU INLINE Test Routines

Routine ID	Test Name	Function
C1	TEST UNIT READY& REQ.SENSE	Issues the TEST UNIT READY to the HDD and verifies that the status is GOOD or CHECK.
C2	INQUIRY	Checks the HDU-specific information.
C4	HDU SELF TEST	Issues the SEND DIAG (Self Test) command to the HDD and verifies that the terminates normally.

- NOTE:
- All logical devices must be in the “BLOCKED” state. If not, the test routine will error-terminate. Refer to from [SVP02-10-50](#) of SVP SECTION for all logical devices blocked.
 - The previous test routines must have been terminated normally before the pertinent test routine is started.
 - The Disk Controller should have been powered on normally.

2.5 DKU PATH INLINE

The DKU Path Inline is used to check that the connection between the DKA and the HDU is correct. The DKU path inline test routines are shown in Table 2.5-1.

Moreover, the thing for which only the diagnostic routine shown in diagnostic order at the time of introduction is performed at the time of equipment introduction. It is not performing manually, since diagnosis is automatically performed in extension processing when extending DKU to an established storage system. (It will become a serious error if it performs manually.)

Table 2.5-1 DKU PATH INLINE Test Routine

Introduction diagnostic order	Routine ID	Execution propriety under ONLINE	Test Name	Function	Maximum execution time (*4)			
					1HDD	16HDD	32HDD	256HDD
1	A0	○ (*5)	Path Address TEST1	Checks whether the selected DKA and HDU are correctly connected.	About 1 min.	About 1 min.	About 1 min.	About 1 min.
—	A2	×	Failed HDD detection test	Detects the failed HDD and recovers it by using the reset function when an A0 10 or A0 20 error occurs. (*2)	About 10 sec.	About 2 min.	About 3 min.	About 13 min.
2 (*1)	A3	×	HDD READ TEST	Executes the Read Test of the mounted HDD is executed. (*3)	About 10 sec. (*6)	About 3 min. (*6)	About 5 min. (*6)	About 13 min. (*6)
					About 15 sec. (*7)	About 4 min. (*7)	About 10 min. (*7)	About 35 min. (*7)

NOTE:

- *1: Do not perform when the storage system is online, or when HDD installation or when DKU installation are performed. Only run this routine during a new Install, and before customer data is present.
- *2: The routine A2 forcibly blocks the port of the HDD by using the individual SCSI RESET function for the HDD connected to the designated port of the selected DKA. Therefore, you must not do this operation expect for finding the factor of A010/A020 error.
- *3: The routine A3 executes Read Test to all equipped HDD. Therefore, you must not execute this operation during ONLINE.
- *4: The maximum execution times here is the time when communication is normal. Communication time-out, is 3 minutes plus the above time.
- *5: Do not perform it manually, since diagnosis is automatically performed in the storage system maintenance processing.
- *6: The execution time in Standard model.
- *7: The execution time in High performance model.

2.6 LAN Checker

LAN checker analyses the LAN connection between DKC and SVP to determine whether the LAN error is caused by the physical connection or the communication software.

Table 2.6-1 LAN Checker Test

#	Test Name	Function	Maximum execution time
1	Hardware check	Checker executes “Ping” to all MPs. If the result is “no-response”, for an MP, the physical connection error has occurred between the MP and SVP.	2 min. (1 MP)
2	Software check	Checker executes the communication between SVP and MPs whose result of #1 is “responded”.	

2.7 Encryption chip status Checker

Encryption chip status Checker enables reference of the state of DKA (Encryption state/Error state) via SVP.

Table 2.7-1 Encryption chip status Check

#	Test Name	Function	Purpose	Maximum execution time
1	Encryption chip status Check	Checker transmits and executes a state reference command to SPCve. And a result is displayed on SSB.	Checks the state of DKA (Encryption state/Error state).	About 2 min.

3. DIAG Parts

The parts that are diagnosed by the DIAG test routines are shown in Figs. 3-1 through 3-6.

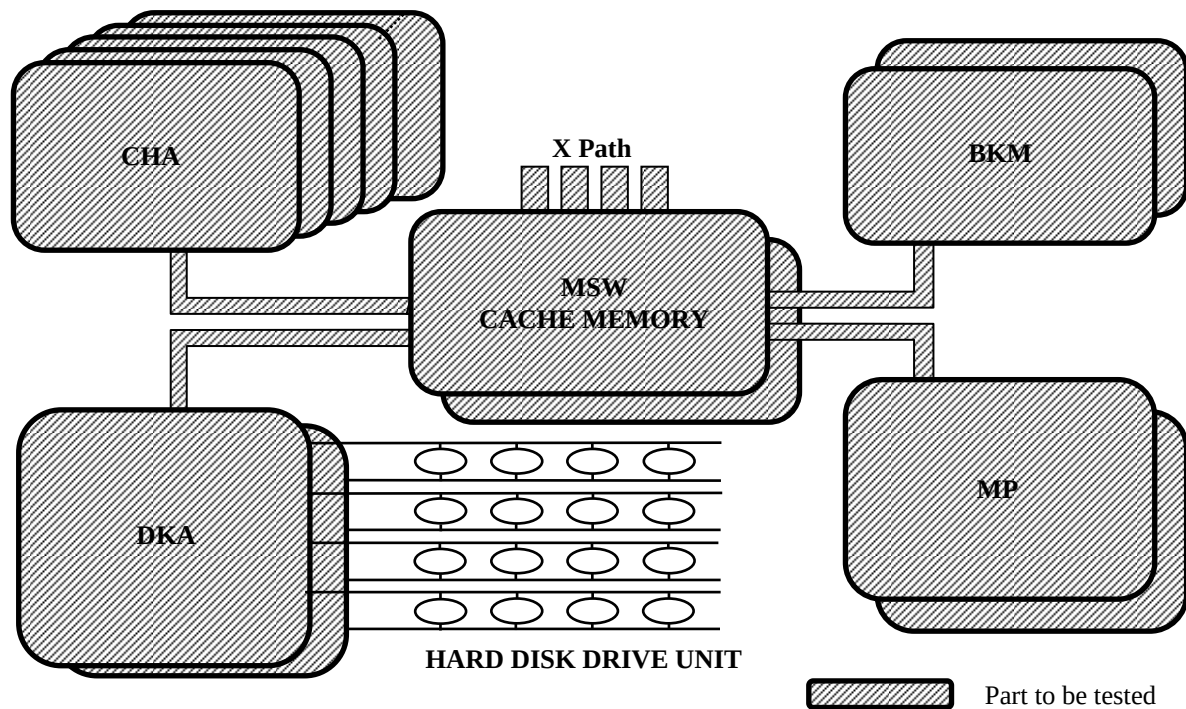


Fig. 3-1 Parts Subject to CUDG3/CUDG4 Tests

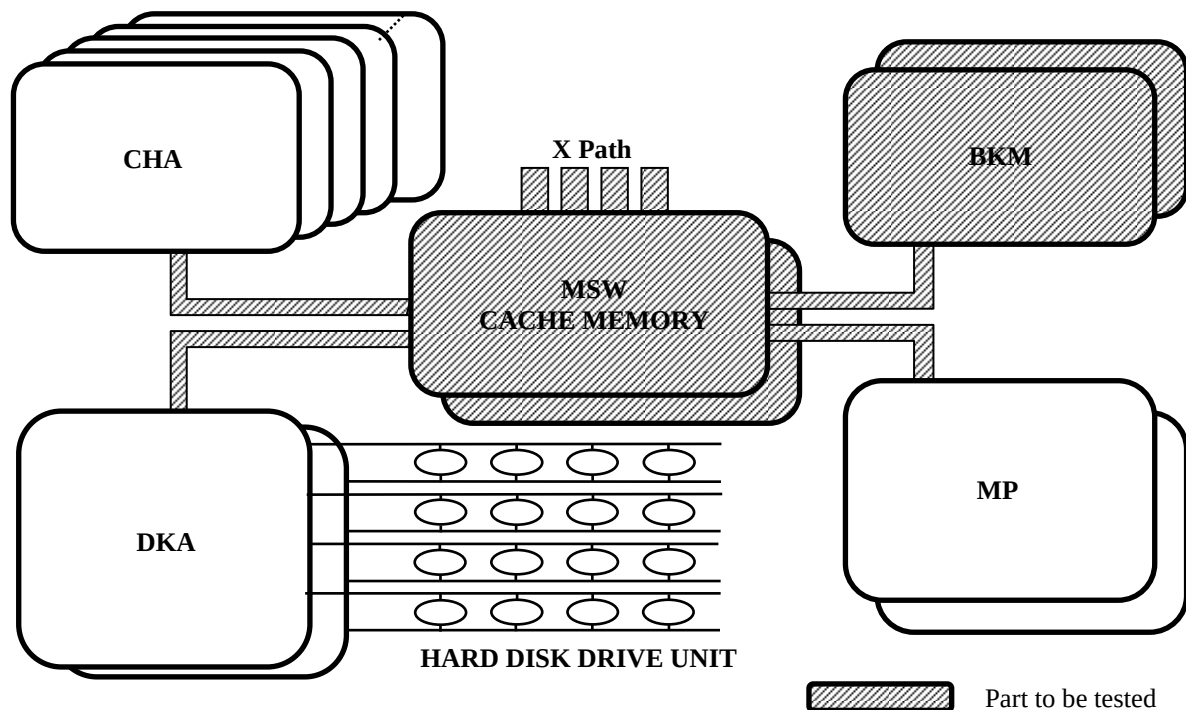


Fig. 3-2 Parts Subject to INLINE CUDG Tests

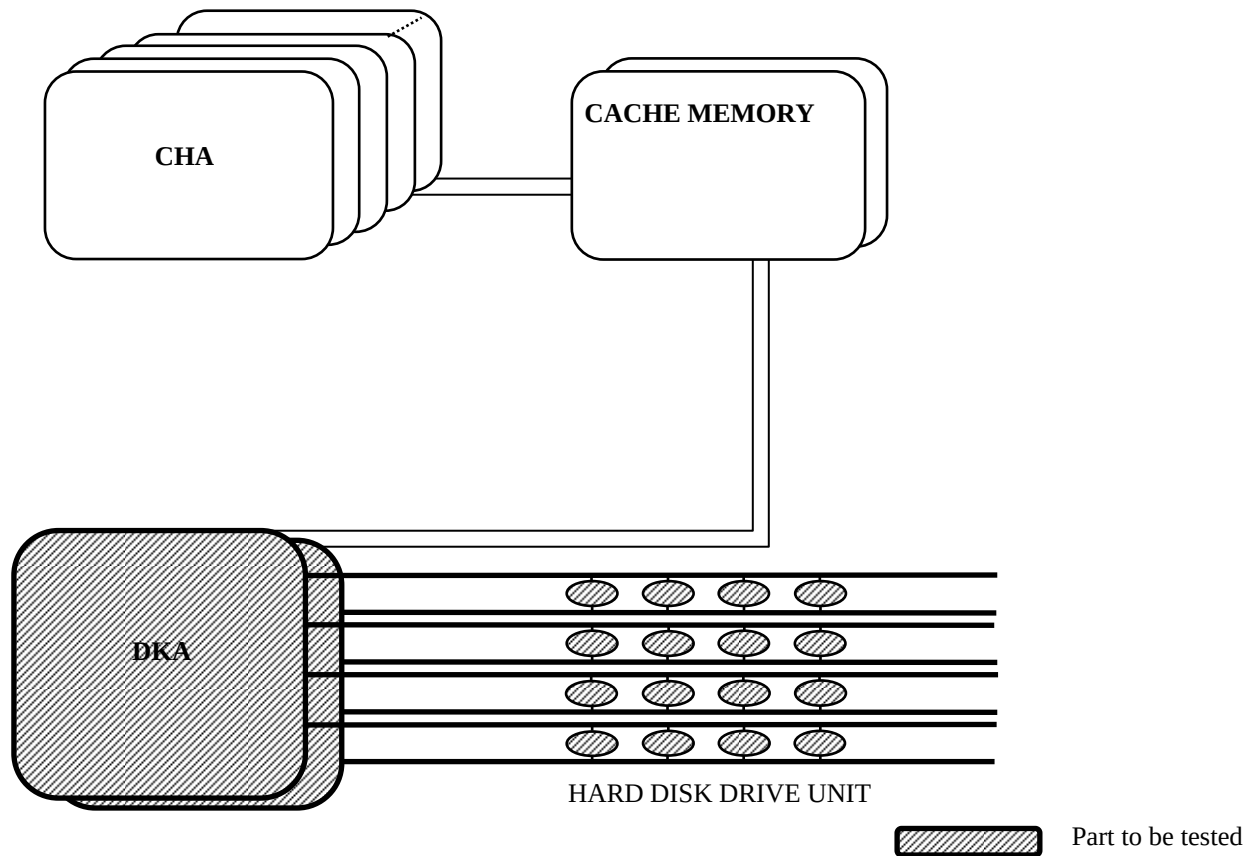
DIAG03-20

Fig. 3-3 Parts Subject to DKU INLINE Tests

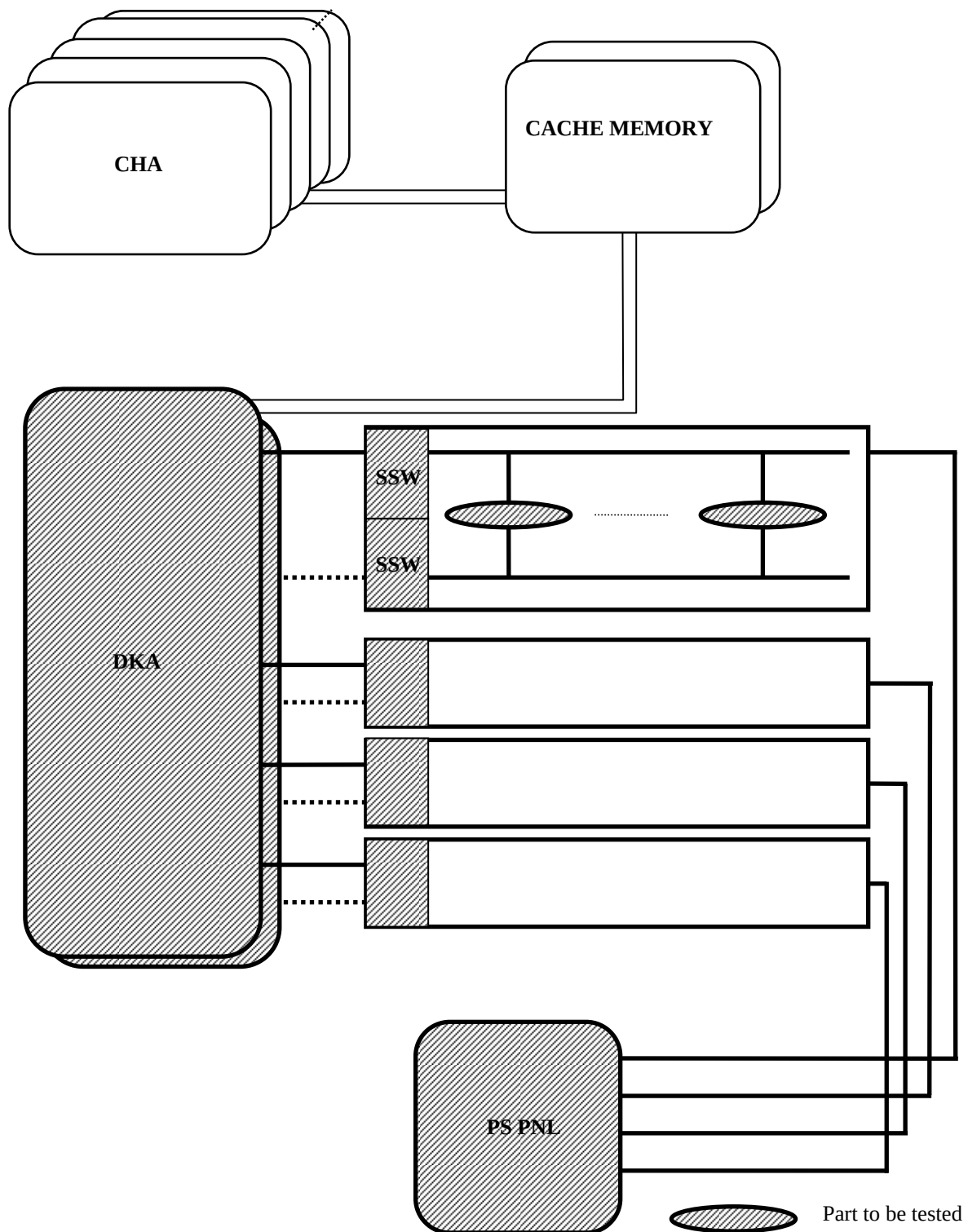


Fig. 3-4 Parts Subject to DKU PATH INLINE Tests

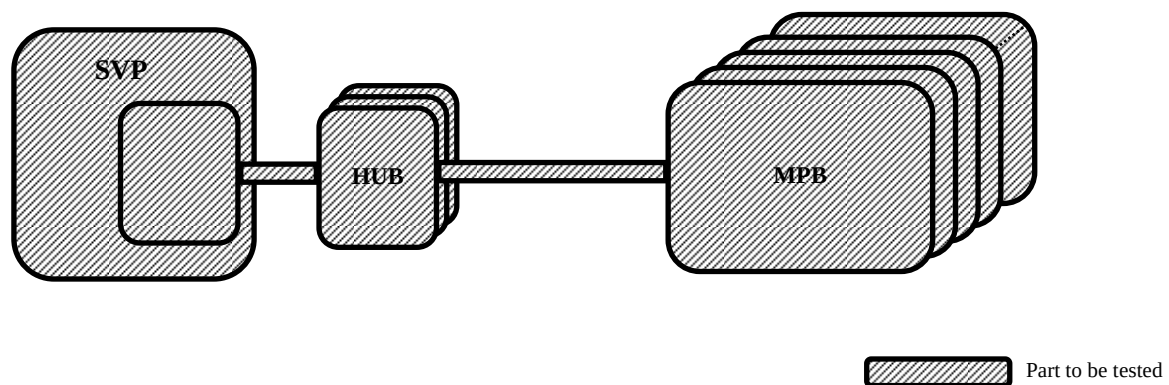


Fig. 3-5 Parts Subjects to LAN check

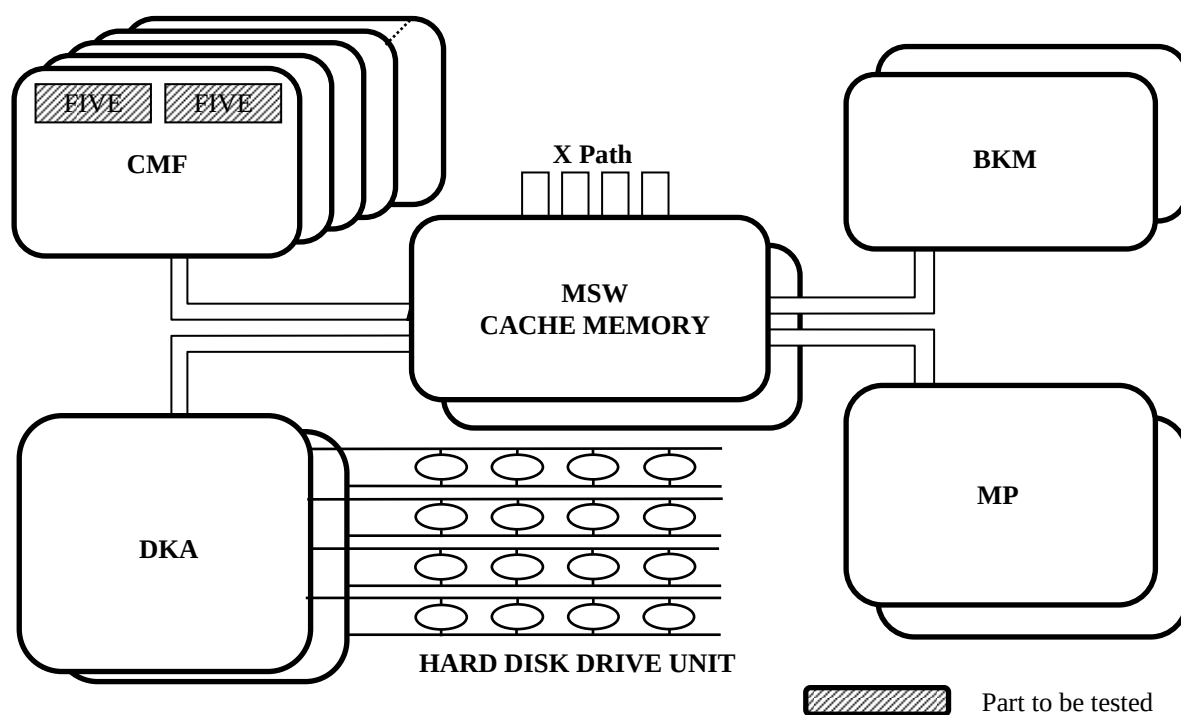


Fig. 3-6 Parts Subject to FCDG3 Tests

DIAG04-10

4. DIAG Test Procedures (SVP Operations)

4.1 CUDG4 Test Procedures

⚠ CAUTION

- ① If CUDG4 is executed, it may become impossible to guarantee the data on Cache Memory.
 - Execute PS OFF and ON before CUDG Test. The data on CACHE is stored to HDD.
 - Be sure to check the validity of CUDG Test to Technical Support Division before CUDG Test.
- ② Powering off/on is required owing to the performance of this operation.

1. <Execute PS OFF>

Turn off the DKC storage system by performing the PS OFF operation.

2. <PS ON with CE-Mode>

Set the Maintenance Jumpers to CE Mode connectors, then execute PS ON.

3. <SVP Initial screen>

Refer to [SVP01-120](#).

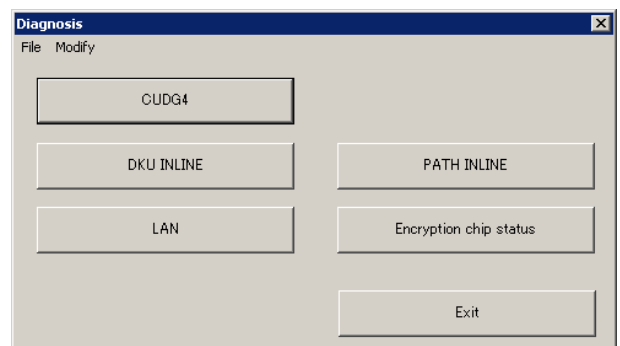
4. <Operation mode change>

Change the mode to [Modify Mode].

Select (CL) [Diagnosis].

5. <Activating CUDG>

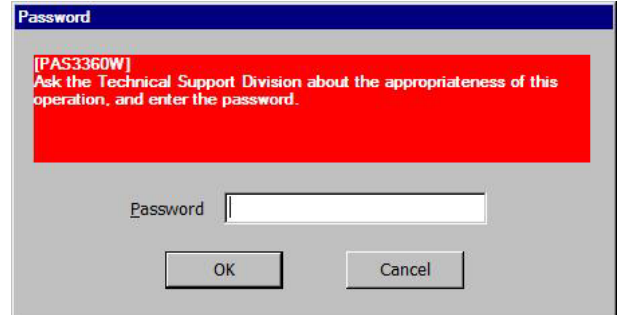
Select (CL) [CUDG4].



6. <Password>

NOTICE: Ask the technical support division about the appropriateness of the operation, and input a password after getting an approval of executing the operation.

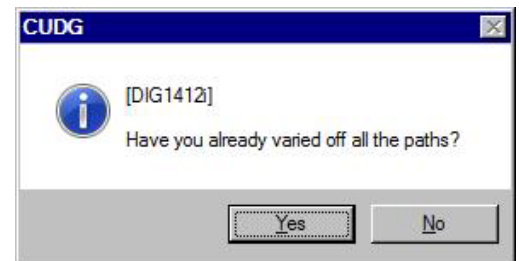
If you want to continue this process, enter the password, and select (CL) [OK].



7. <Confirming that the channel path has been varied off>

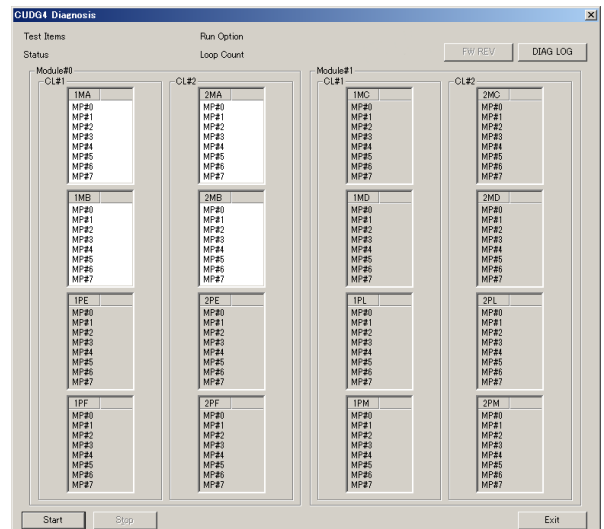
An inquiry “Have you already varied off all the paths?” is displayed.

Vary off the channel path, then select (CL) the [Yes] button.



8. <Start of CUDG4 test>

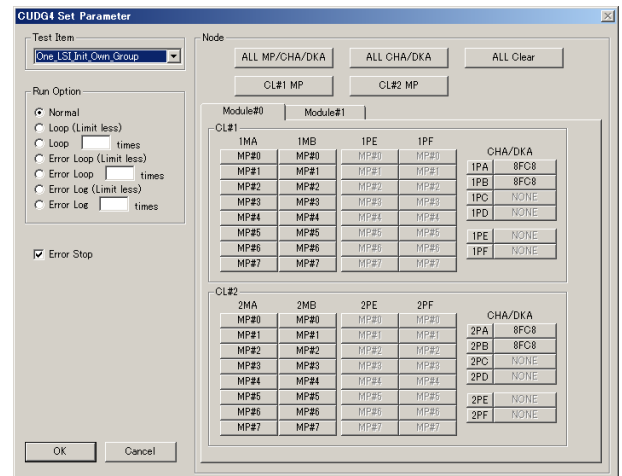
Select (CL) [Start].



9. <Setting test parameters>

Select a Test Item, Run Option, test object CHA/DKA and a test object processor from Test Item.

Select (CL) the [OK] button after all the above selections are made.



[Test Item]

Refer to [DIAG02-30](#).

[Run Option]

Refer to [DIAG02-50](#).

[Error Stop]

When the error is detected when two or more MP (processor) is selected and Test Item that starts by "One" is executed, the execution of the following MP is stopped.

[Test object processors]

- ALL MP/CHA/DKA : The test is executed on all the processors and all the CHA/DKA in the configuration.
- ALL CHA/DKA : The test is executed on all the CHA/DKA in the configuration.
- ALL Clear : Release of all selection.
- CL#1 MP : The test is executed on all the processors in CL#1.
- CL#2 MP : The test is executed on all the processors in CL#2.
- Module#0 tab : Selection of PK of Module#0 is enabled.
- Module#1 tab : Selection of PK of Module#1 is enabled.

The mounted processor and CHA/DKA is displayed on Equip. Selected processor or CHA/DKA is displayed in reverse video. When you want to select a specified processor or CHA/DKA in the configuration, Select a processor or CHA/DKA directly.

10. <Confirmation of execution>

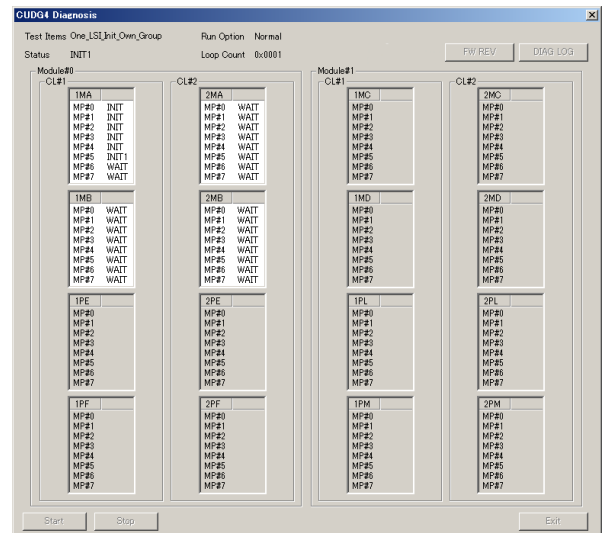
The execution confirmation message is displayed.
Select (CL) [Yes].



11. <Displaying CUDG4 loading>

Statuses of INIT1, INIT2, INIT3 and WAIT are displayed on the 'CUDG4' screen.

If Load is done once, it is not executed until returning to the Diagnosis screen of Step 5.



12. <Displaying Run>

State of the run is displayed on the 'CUDG4' screen.

Normal end state:

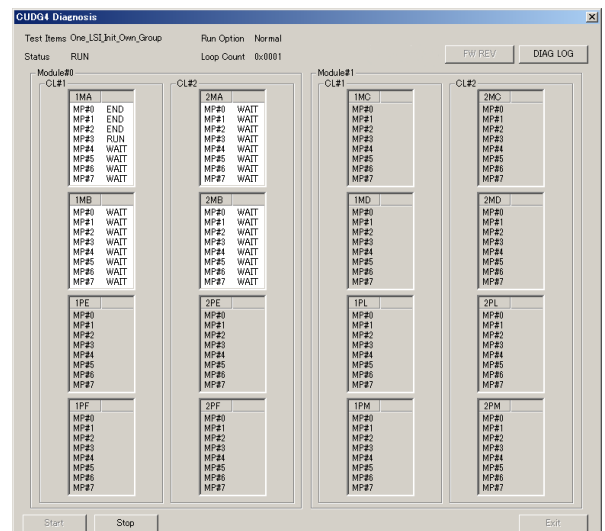
'WAIT' -> 'RUN' -> 'END'

Abnormal end state:

'WAIT' -> 'RUN' -> 'ERR'

Normal end----- Go to Step 14.

Abnormal end----- Go to Step 13.



13. <Displaying error>

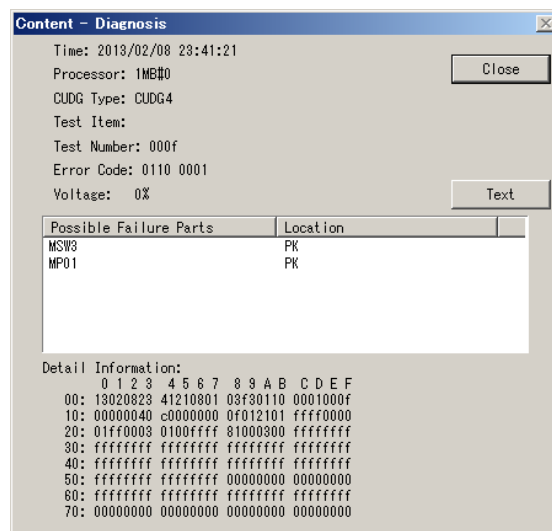
If an error occurs in CUDG4 test, the CUDG Error window is displayed.

To execute CUDG4 again, go to Step 15 -> Step 16 -> Step 5.

To terminate CUDG4, go to Step 15 -> Step 16 -> Step 17.



The error screen accumulated by selecting the [DIAG LOG] button on the CUDG4 Diagnosis screen is displayed.

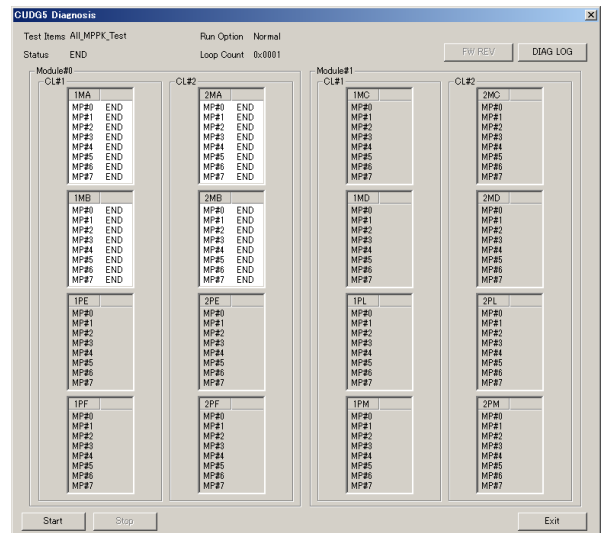


14. <Displaying End>

Status “END” is displayed for the processor that CUDG4 test ends.

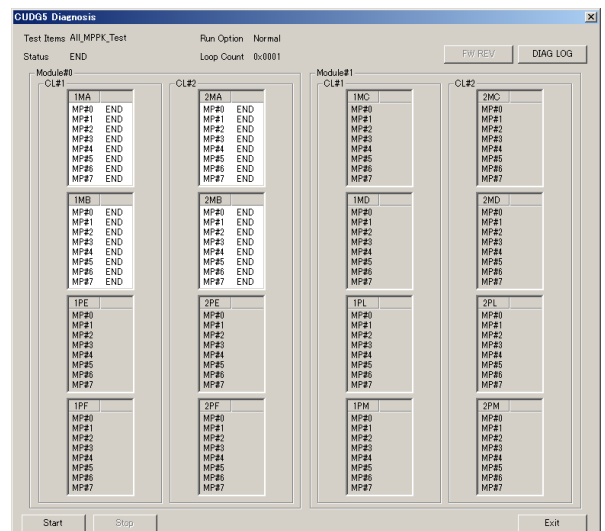
To continue CUDG4, go back to Step 8.

To terminate CUDG4, go to Step 15.



15. <Displaying Exit>

Select (CL) [Exit].

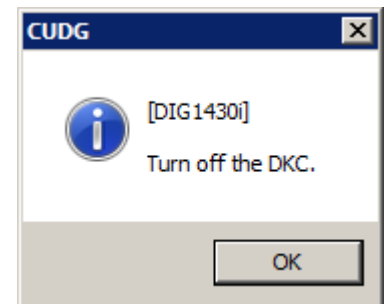


16. <PS OFF>

Turn off the DKC storage system by performing the PS-OFF operation following the displayed instruction “Turn off the DKC.”, then select (CL) the [OK] button.

To continue CUDG4, PS ON operation and return to Step 5.

To terminate CUDG4, go to Step 17.



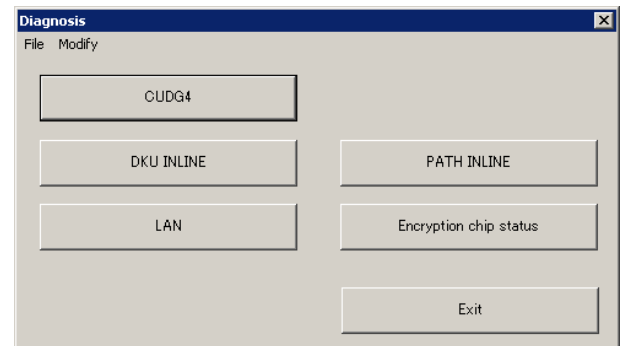
17. <Detaching of Maintenance Jumper>

The Maintenance Jumper is detached from the CE-Mode connector.

DIAG04-70**18.** <Reboot the PC and PS ON>

‘Diagnosis’ window is displayed.

- Close the window
- Reboot the PC
 - Power Off SVP (See [SVP01-170.](#))
 - Power On SVP (See [SVP01-160.](#))
- PS ON



End of CUDG4 operation.

4.2 DKU INLINE Test Procedures

1. <Initial screen>

2. <Operation mode change>

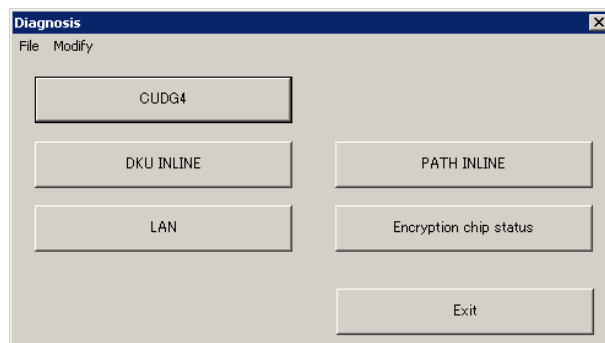
Change the mode to [Modify Mode].

Select (CL) [Diagnosis].

3. <Select 'DKU INLINE'>

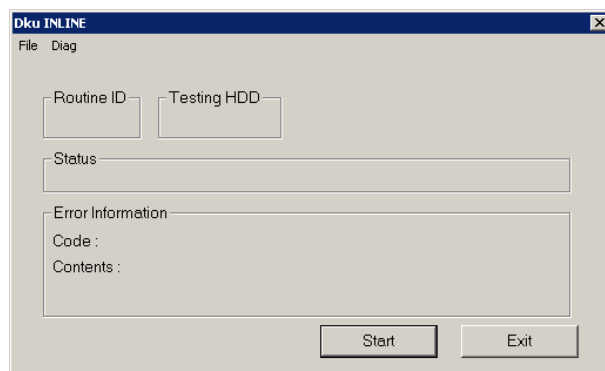
The 'Diagnosis' window is displayed.

And select (CL) [DKU INLINE].



4. <Select [Start]>

Select (CL) [Start].



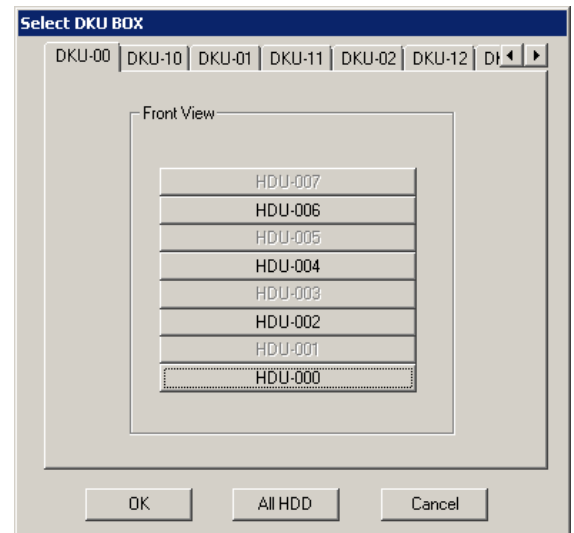
5. <Select HDU to be tested>

Select (CL) HDU button in which HDDs of test routine to be executed is installed.

When selecting each 'HDU', go to Step 6.

Select (CL) [All HDD] when performing a test routine to all the HDDs installed in equipment.
Go to Step 9.

When displaying other DKU(s), select (CL) [DKU-nn] tab on the upper part of a screen.



6. <Select HDD to be tested>

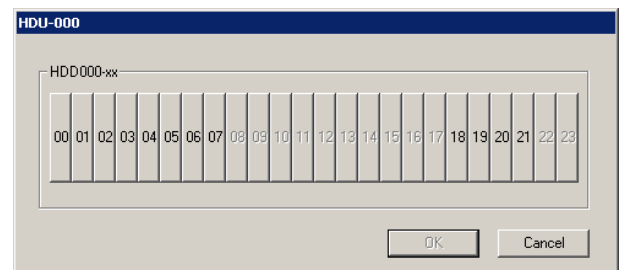
Select (CL) HDDs for which the test routine is to be executed from selected HDU Group.
Then select (CL) the [OK] button.

HDD button switches selected (button is pushed) and not selected (the button is not pushed) state each time the button is clicked.

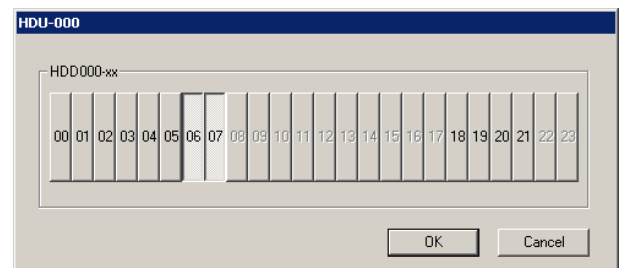
[OK] button is disabled when no HDDs are selected. It is activated when one or more HDDs are selected.

When HDDs and [OK] are selected, go to Step 7.

When [Cancel] is selected, go back to Step 5.



e.g. The HDD selection screen in 2.5-inch HDU.
(HDD not selected)

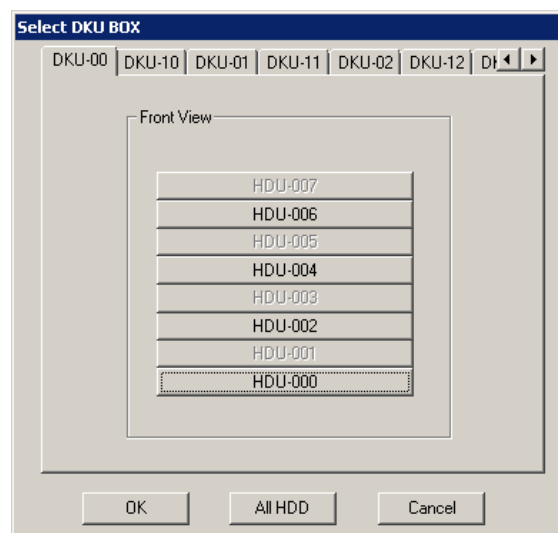


e.g. HDD [06], [07] selected.

7. <Select [OK]>

Select (CL) the [OK] button.

Go to Step 8.

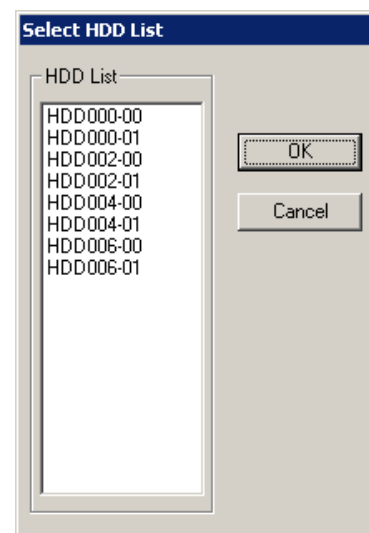
**8. <Confirm HDD to be tested>**

Confirm HDDs to be tested in the 'Select HDD List'.

Select (CL) [OK] button to perform diagnosis processing.

Go to Step 9.

When [Cancel] is selected, go back to Step 7.



9. <Status Window>

The Status Window is displayed.

Normal end : Go to Step 10.

Abnormal end : Go to Step 12.

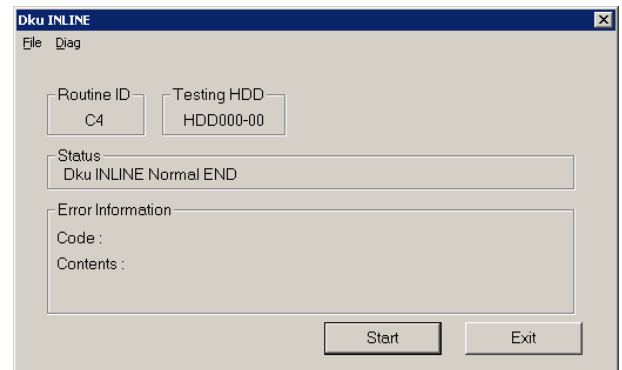
In case you abort the diagnosis, select (CL) the [Stop] button.



10. <DKU INLINE end>

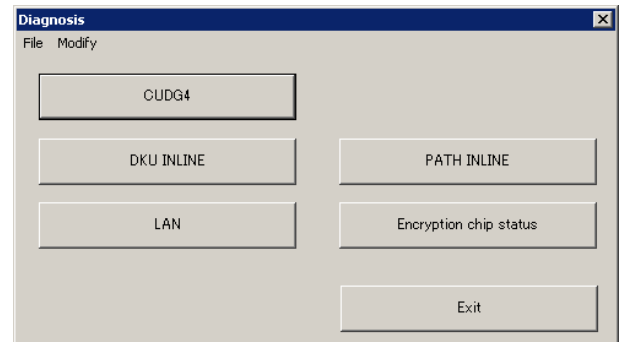
After “Dku INLINE Normal END” is displayed in the Status field, select (CL) [Exit].

Go to Step 11.



11. <Diagnosis end>

Select (CL) [Exit].

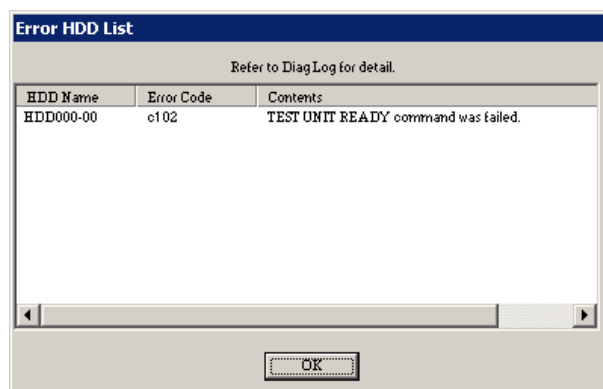


12. <Displaying 'Error HDD'>

Error HDD List is displayed.

After a check, select (CL) [OK].

Go to Step 13.



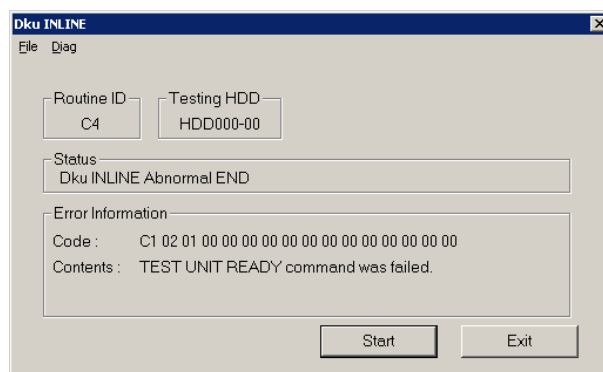
13. <Error End>

“Dku INLINE Abnormal END” is displayed in the Status field.

Refer to “2.2 Log indication” ([SVP02-02-10](#)).

Select (CL) [Exit].

Go back to Step 11.



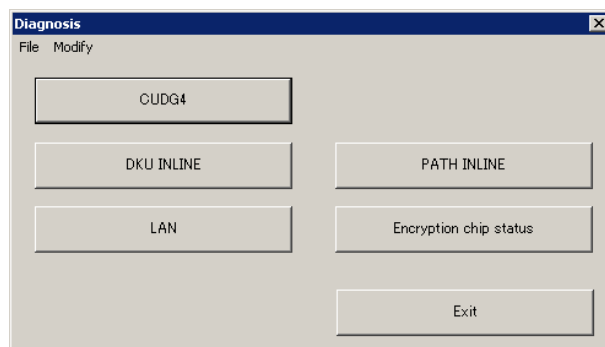
4.3 DKU PATH INLINE Test Procedures

4.3.1 A0 routine Test Procedures

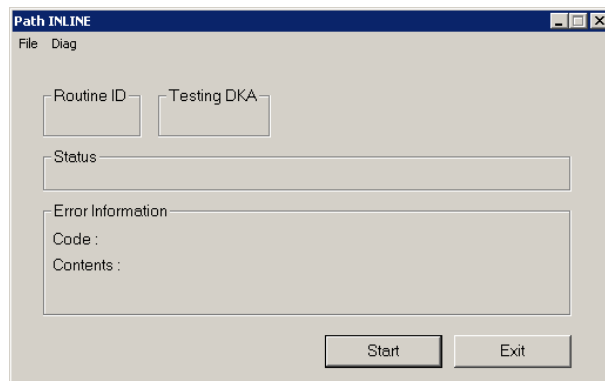
1. <Initial screen>

2. <Operation mode change>
Change the mode to [Modify Mode].
Select (CL) [Diagnosis].

3. <Select 'PATH INLINE'>
The 'Diagnosis' window is displayed.
And select (CL) [PATH INLINE].
Go to Step 4.



4. <Selecting [Start]>
Select (CL) [Start].
Go to Step 5.

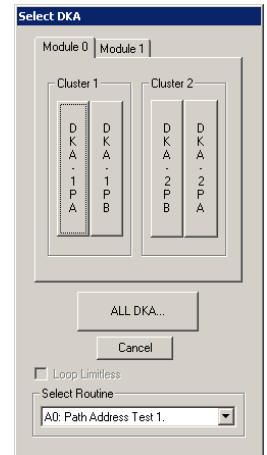


5. <Selecting Routine and the DKA>

Select the routine (A0) which is to be tested from “Select Routine”, select (CL) the DKA for which the test routine is to be executed.

Go to Step 6.

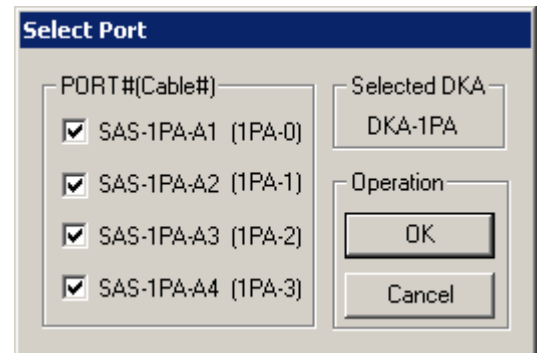
If the [ALL DKA...] button is selected: Go to Step 7.



6. <Selecting the PORT to be diagnosed>

Select (CL) the PORT for which the test routine is to be executed. And select (CL) the [OK] button.

Go to Step 7.



7. <Status Window>

The Status Window is displayed.

Normal end : Go to Step 8

Abnormal end : Go to Step 9

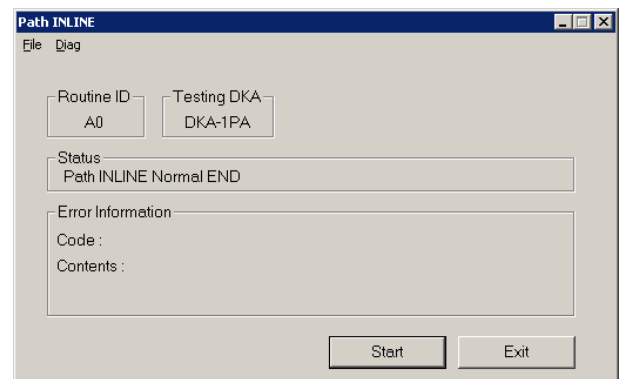
In case you abort the diagnosis, select (CL) the [Stop] button.



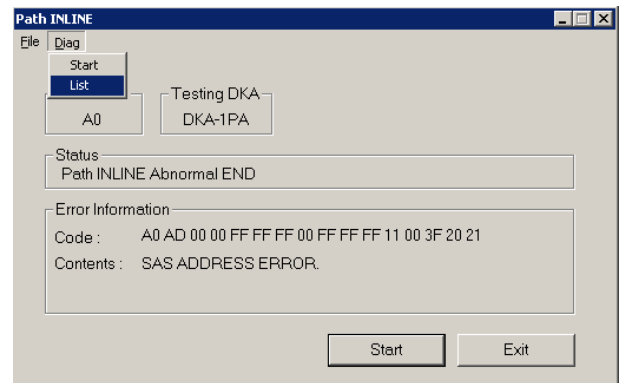
8. <Completing diagnosis>

After “Path INLINE Normal END” is displayed in the Status field, select (CL) [Exit].

Go to Step 13.

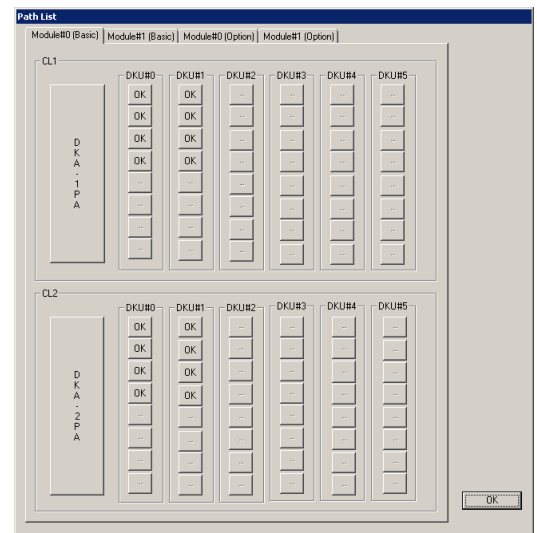


9. <Displaying the error detail>
 Select (DR) [List] from [Diag].
 Go to Step 10.



10. <Verification the incorrect part>
 Select (CL) of the SSW button in the item [DKU#n]
 to display the detail of diagnostic result screen.

- Each status in the SSW button represents following meaning:
 [OK] ...SSW installed, Normal END.
 [NG] ...SSW installed, Abnormal END.
 [EQ] ...SSW installed, Diagnosis unperformed.
 [--] ...SSW not installed. (SSW button disabled)
- A course of connection for SSW being shown within the [DKU#n] is as follows:
 - High 4 rows: SSW connected directly from DKA port.
 - Low 4 rows: SSW connected from OUT0 port in high 4 rows SSW. (Connected only in Standard mode)
 For the method of cable connection, see LOCATION SECTION “5.1 Cable Diagram” (LOC05-10).



When SSW button in the item [DKU#n] is selected, go to Step 11.
 When [OK] is selected, go to Step 12.

When displaying other Module, select (CL) [Module#n] tab on the upper area of the window.

11. <Displaying 'Result'>

'Result' is selected.

The diagnostic check part of each item becomes as follows.

- [IN] · A connection check result with DKA or SSW connected before.
- [OUT] · A connection check result with SSW connected back.
- [OUT(Brunch)] · A connection check result with SSW linked to OUT0 port (at the time of Standard mode connection).

Check the diagnostic result in each cable connection parts of SSW from the status currently displayed on the SAS-Port status item in each above-mentioned item,

“OK” · Normal END.

“NG” · Abnormal END.

“ -- ” · Diagnosis unperformed.

Select (CL) the [OK] button.

Go back to Step 10.

12. <DKU PATH INLINE end>

After “Path INLINE Abnormal END” is displayed in the Status field, select (CL) [Exit].

Go to Step 13.

13. <End of [Diagnosis]>

Select (CL) [Exit].

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4.3.2 A3 routine Test Procedures

1. <Initial screen>

2. <Operation mode change>

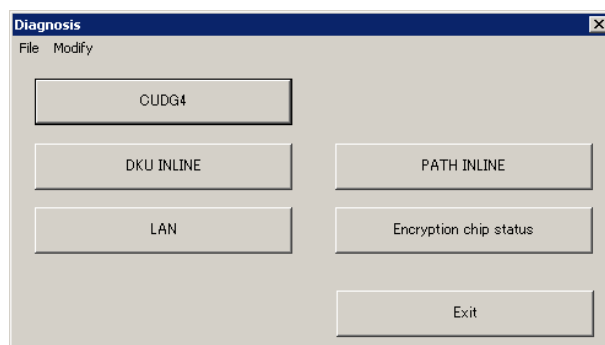
Change the mode to [Modify Mode].

Select (CL) [Diagnosis].

3. <Select 'PATH INLINE'>

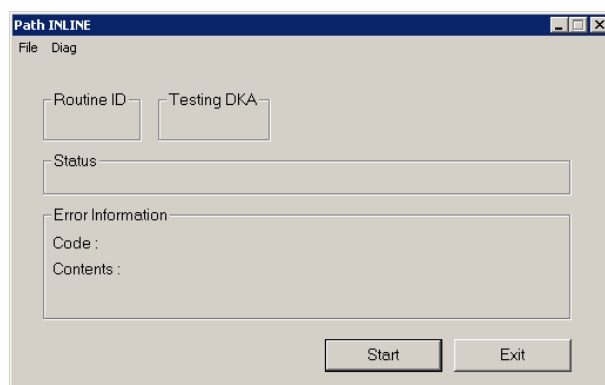
The 'Diagnosis' window is displayed.

And select (CL) [PATH INLINE].



4. <Selecting [Start]>

Select (CL) [Start].

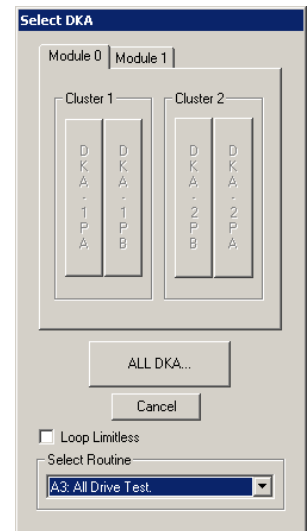


5. <Selecting the DKA >

Select the routine (A3) which is to be tested from “Select Routine”, select (CL) the [ALL DKA...].

In case you loop the diagnosis, check the “Loop Limitless” Check-Box.

Go to Step 6.



6. <I/O check>

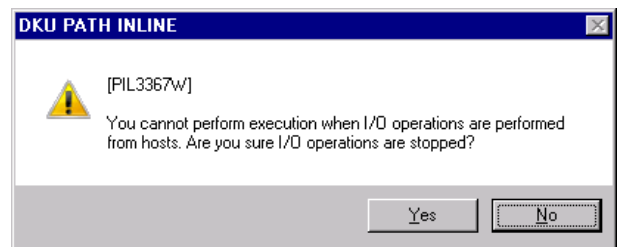
An inquiry “You cannot perform execution when I/O operations are performed from hosts. Are you sure I/O operations are stopped?” is displayed.

It checks that I/O has stopped, then select (CL) the [Yes] button.

Go to Step 7.

When I/O has not stopped, select (CL) [No] to cancel diagnostic processing.

Go to Step 10.

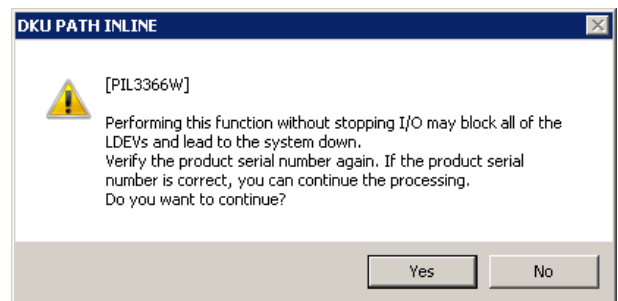


7. <Execution check>

An inquiry “Performing this function without stopping I/O may block all of the LDEVs and lead to the system down.

Verify the product serial number again. If the product serial number is correct, you can continue the processing.

Do you want to continue?” is displayed.



Check the device manufacturer’s serial number to continue by selecting (CL) [Yes] if it is correct.

Go to Step 8.

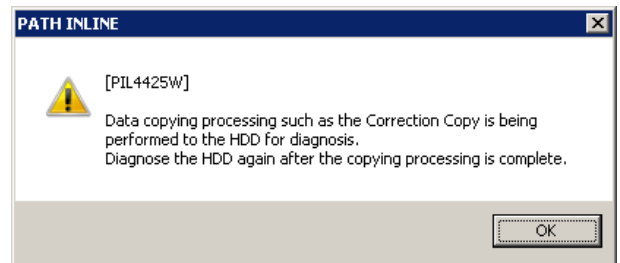
If not correct, the process is terminated by selecting (CL) [No].

Go to Step 10.

8. <When detecting data copy on drive>

Check whether the data copying processing is performed to the HDDs for diagnosis.

When applicable HDDs are detected, a message “Data copying processing such as the Correction Copy is being performed to the HDD for diagnosis. Diagnose the HDD again after the copying processing is complete.” is displayed.



Select (CL) the [OK] button to terminate the diagnosis processing.

Go to Step 10.

When HDDs to which data copy processing is performed are not detected, go back to Step 9.

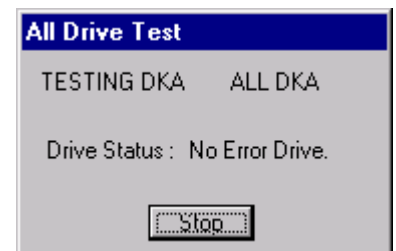
9. <Status Window>

The Status Window is displayed.

Normal end ----- Go to Step 10

Abnormal end ----- Go to Step 11

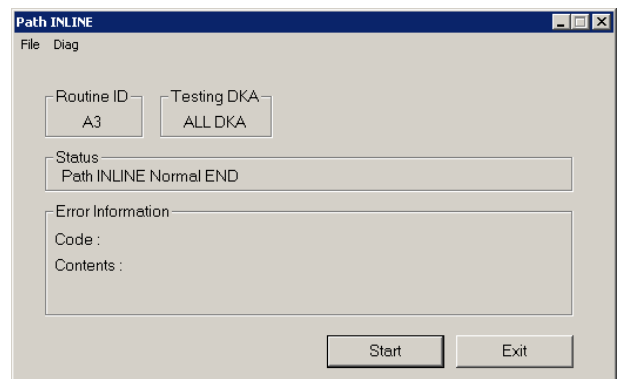
In case you abort the diagnosis, select (CL) the [Stop] button.



10. <DKU PATH INLINE Normal end>

After “Path INLINE Normal END” is displayed in the Status field, select (CL) [Exit].

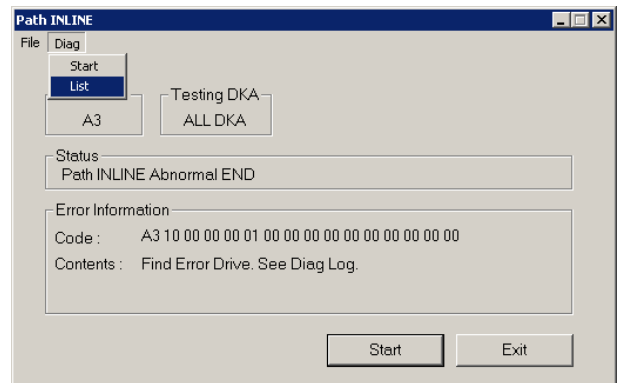
Go to Step 16.



11. <Displaying the error detail>

Select (DR) [List] from [Diag] on the upper area of window.

Go to Step 12.



12. <Displaying Select Result HDU>

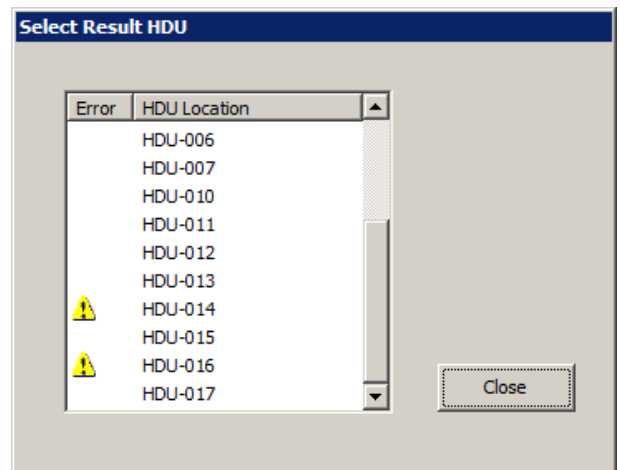
If any failure PDEVs are included in the diagnosed HDU, an error icon (⚠) is displayed in the [Error] item of the HDU.

Select (CL) an HDU from [HDU Location]

Go to Step 13.

Select (CL) [Close] to return to the previous window.

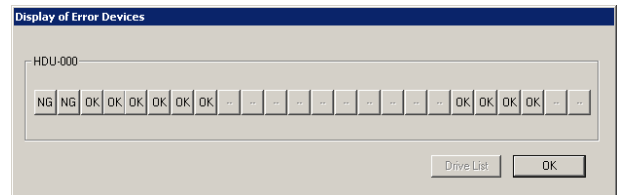
Go to Step 15.



13. <Displaying the Error Devices>

“NG” is displayed in the PDEV installing position viewed in the HDU.

- The following represents each status currently displayed on each PDEV button.
- [OK] ..PDEV installed, Normal END.
 [NG] ..PDEV installed, Abnormal END.
 [EQ]...PDEV installed, Diagnosis unperformed.
 [--] ...PDEV not installed. (PDEV button non-activity)



e.g. The PDEV(HDD) selection screen in 2.5-inch HDU.

When displaying detailed information, Select (CL) the PDEV button of a PDEV equipped position.

Go to Step 14.

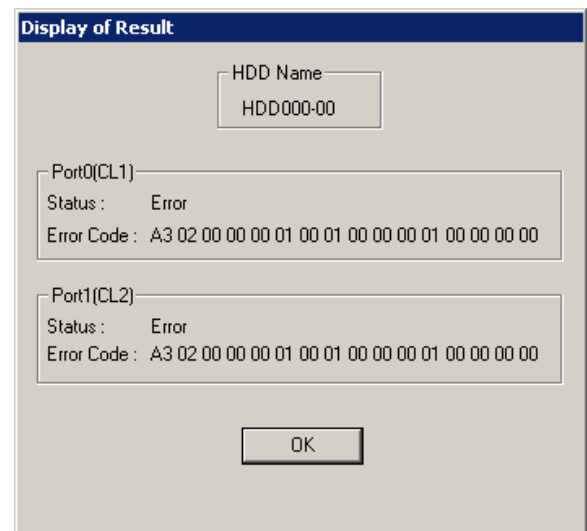
Select (CL) [Close] to return to the previous window.

Go back to Step 12.

DIAG04-210**14. <Displaying the Error detail>**

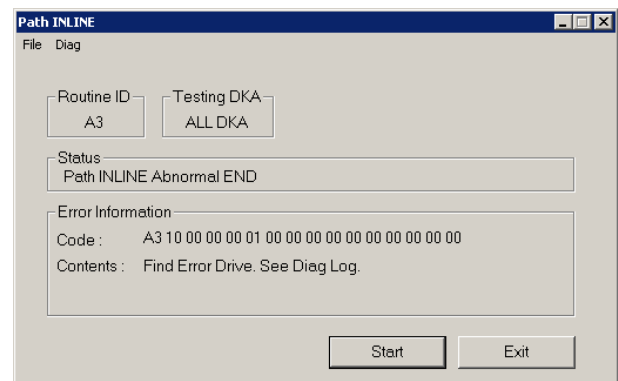
Select (CL) [OK] to return to the previous window.

Go back to Step 13.

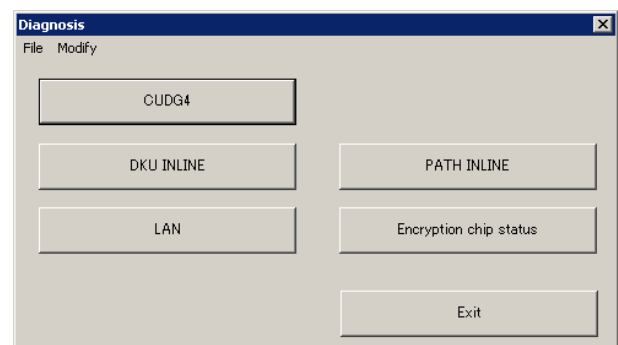
**15. <DKU PATH INLINE end>**

Select (CL) [Exit].

Refer to “2.2 Log indication” ([SVP02-02-10](#)).

**16. <End of [Diagnosis]>**

Select (CL) [Exit].



4.3.3 A2 routine Test Procedures

1. <Initial screen>

2. <Operation mode change>

Change the mode to [Test Mode].

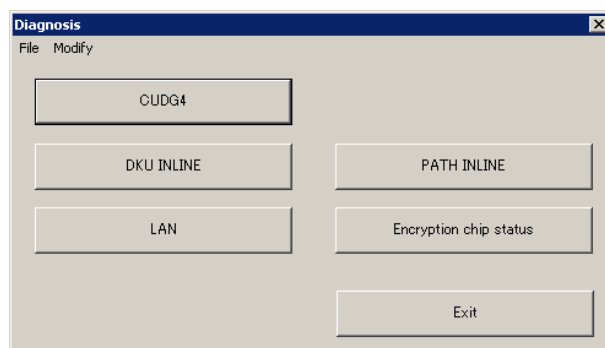
Select (CL) [Diagnosis].

NOTE: Please call Technical Support Division for asking how to change the mode to Test Mode.

3. <Select 'PATH INLINE'>

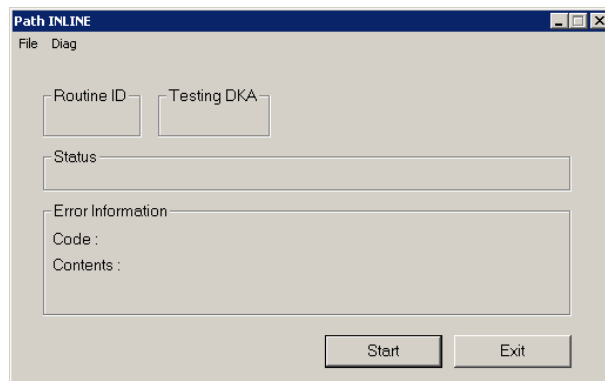
The 'Diagnosis' window is displayed.

And select (CL) [PATH INLINE].



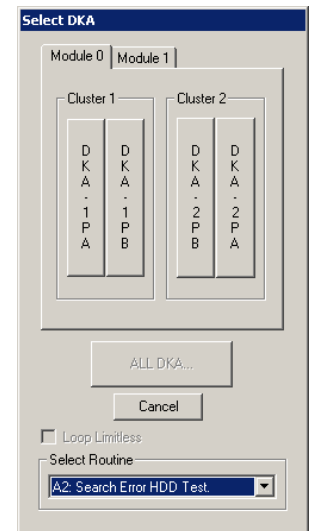
4. <Selecting [Start]>

Select (CL) [Start].



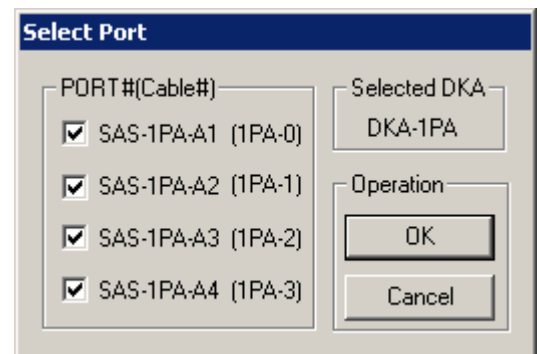
5. <Selecting Routine and the DKA>

Select the routine (A2) which is to be tested from “Select Routine”, select (CL) the DKA for which the test routine is to be executed. Go to Step 6.



6. <Selecting the PORT to be diagnosed>

Selecting the PORT and the routine to be executed. Select (CL) the PORT for which the test routine is to be executed. And select (CL) the [OK] button. Go to Step 7.

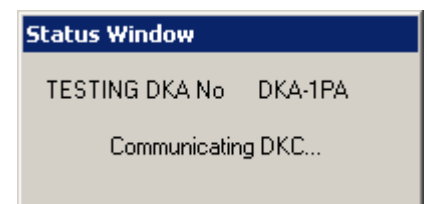


7. <Status Window>

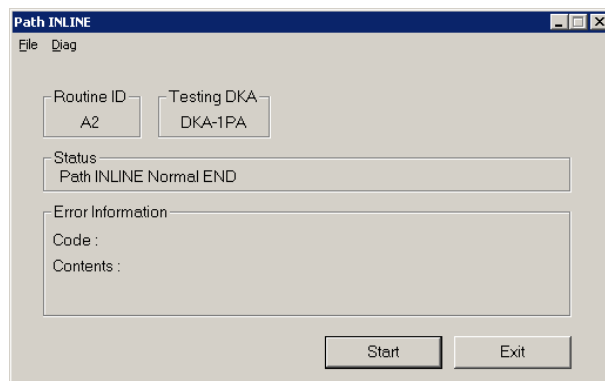
The 'Status Window' is displayed.

Normal end ----- Go to Step 8

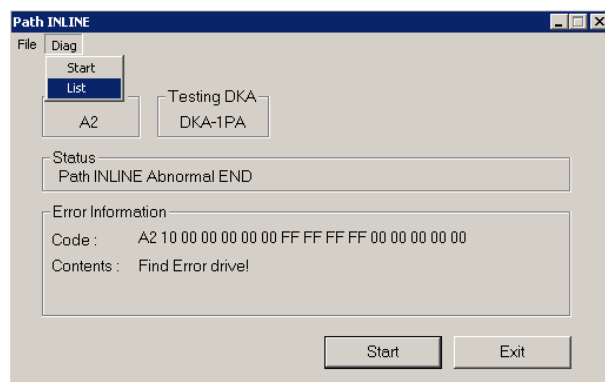
Abnormal end ----- Go to Step 9



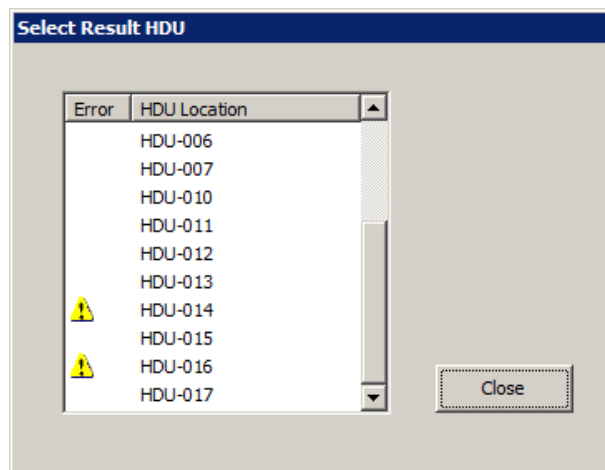
8. <DKU Path INLINE normal end>
 After “Path INLINE Normal END” is displayed in the Status field, select (CL) [Exit].
 Go to Step 14.



9. <Displaying the error detail>
 Select (DR) [List] from [Diag].
 Go to Step 10.



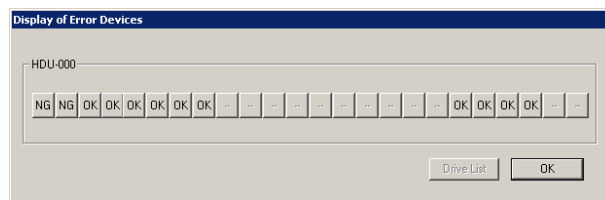
10. <Select Result HDU>
 If there are any error PDEVs on the diagnosed HDU, an error icon (⚠) is displayed in the [Error] item of the HDU.
 Select (CL) a HDU from [HDU Location.]
 Go to Step 11.
 If you want to return to the previous window, select (CL) [Close.]
 Go to Step 13.



11. <Displaying the Error Devices>

“NG” is displayed in the PDEV installing position viewed in the HDU.

- The following represents each status currently displayed on each PDEV button.
[OK] ...PDEV installed, Normal END.
[NG] ...PDEV installed, Abnormal END.
[EQ] ...PDEV installed, Diagnosis unperformed.
[--] ...PDEV not installed. (PDEV button non-activity)



e.g. The PDEV(HDD) selection screen in 2.5-inch HDU.

When displaying detailed information, Select (CL) the PDEV button of a PDEV equipped position.

Go to Step 12.

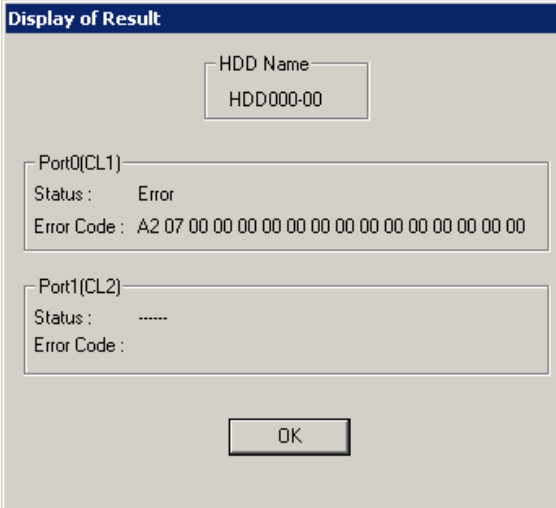
Select (CL) [Close] to return to the previous window.

Go back to Step 10.

12. <Displaying the Error detail>

Select (CL) [OK] to return to the previous window.

Go back to Step 11.



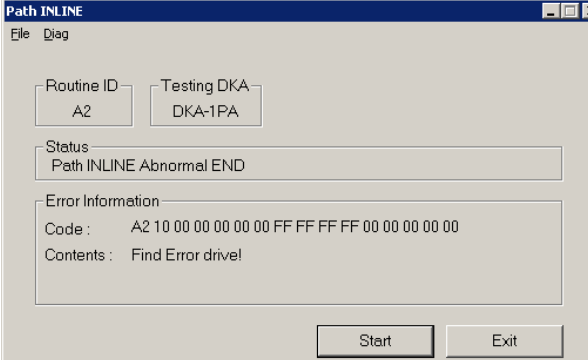
The 'Display of Result' window displays the following information:

- HDD Name: HDD000-00
- Port0(CL1)
 - Status: Error
 - Error Code: A2 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00
- Port1(CL2)
 - Status: -----
 - Error Code:

An OK button is located at the bottom center.

13. <DKU PATH INLINE end>

Select (CL) [Exit].



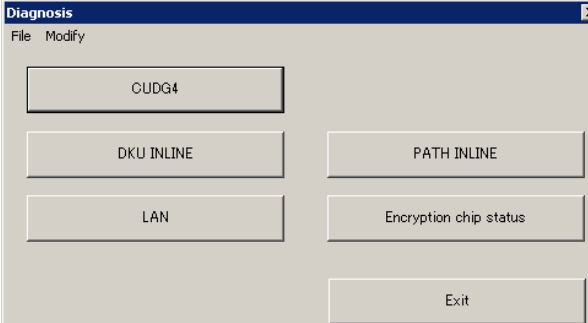
The 'Path INLINE' window displays the following information:

- Routine ID: A2
- Testing DKA: DKA-1PA
- Status: Path INLINE Abnormal END
- Error Information
 - Code: A2 10 00 00 00 00 00 FF FF FF FF 00 00 00 00
 - Contents: Find Error drive!

Start and Exit buttons are located at the bottom right.

14. <End of [Diagnosis]>

Select (CL) [Exit].

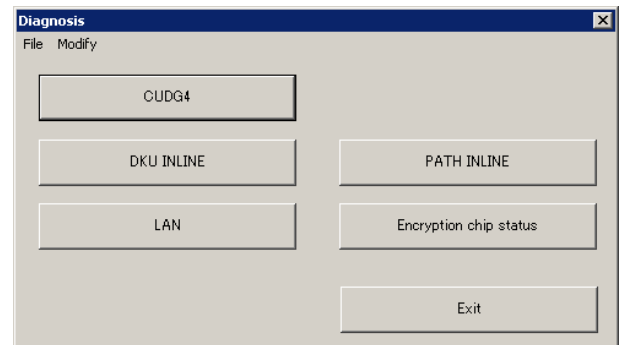


The 'Diagnosis' window displays the following options:

- CUDG4
- DKU INLINE
- LAN
- PATH INLINE
- Encryption chip status
- Exit

DIAG04-270**4.4 LAN Check Procedure**

1. <Initial screen>
2. <Operation mode change>
Change the mode to [Modify mode].
Select (CL) [Diagnosis].
3. <Activating LAN>
Select (CL) [LAN].
(The screen is changed to the LAN Check menu screen.)



4. <Starting LAN Check>
Select (CL) [Start] in the 'LAN Check' window.

<Supplementary explanation>

Although an installed processor is set to be default to execute a hardware diagnosis, all processors can be selected.

Installed processor : Select (CL) [Target MP] on the upper area of window and then select (DR) [Equipped MP].

All processors : Select (CL) [Target MP] and then select (DR) [All MP].

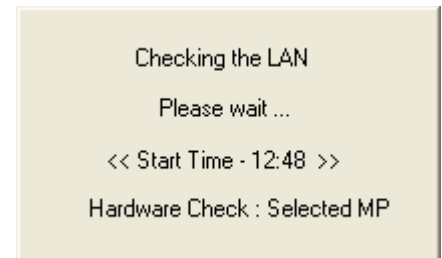
Go to Step 5.



5. <Displaying Wait message>

The Wait message is displayed. The screen will change to the result display screen in a few minutes.

Go to Step 6.



6. <Displaying result>

① MPB status display

When the MPB button is selected, the screen is changed to the ② MP status screen.

The screen is returned to the LAN Check menu screen by selecting (CL) [OK].

Go to Step 7.

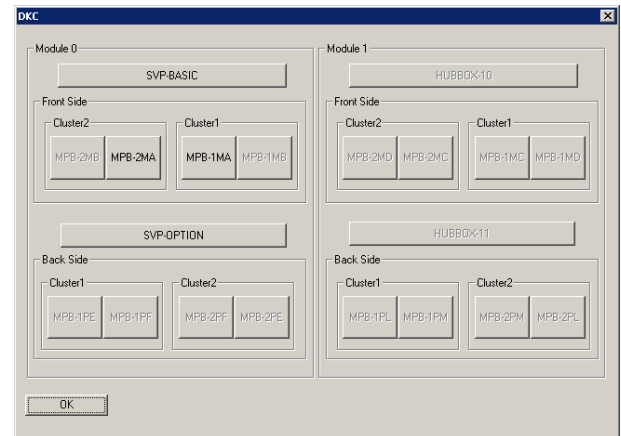
[Explanation on statuses]

The status is shown by the appearance of the button as follows:

Black : The test object is normal.

Blinking : The test object is abnormal.

Gray : The test object is not installed.



② MP status display

When the MP button is selected, the screen is changed to the detailed status screen.

The screen is returned to the ① MPB status screen by selecting (CL) [OK].

[Explanation on statuses]

The status is shown by the appearance of the MP button as follows:

Black : The concerning MP is normal.

Blinking : The test object is abnormal. However, for the MP which was normal at the time of an FF-Ping, “#” is indicated in front of the MP name.

Gray : The test object is not installed.

[Supplemental explanation]

When the test object is not installed in the state that the hardware is abnormal:

The concerning MP is indicated in gray.

When the test object is not installed in the state that the hardware is normal:

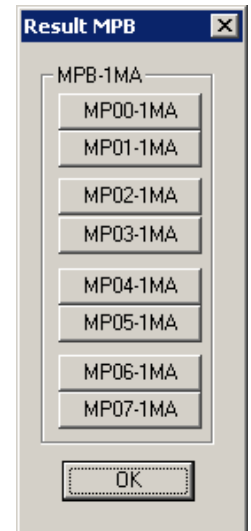
The indication of the concerning MP is grayed and blinks.

When the test object is installed by an FF-Ping:

A character “#” is indicated in front of the MP name, and the name indication blinks.

When the test object is connected by an FF-Ping but not installed:

A character “#” is indicated in front of the MP name, and the name indication is grayed and blinks.



- ③ Detailed status display
Detailed information on the concerning MP is displayed.

The screen is returned to the ② MP status screen by selecting (CL) [OK].

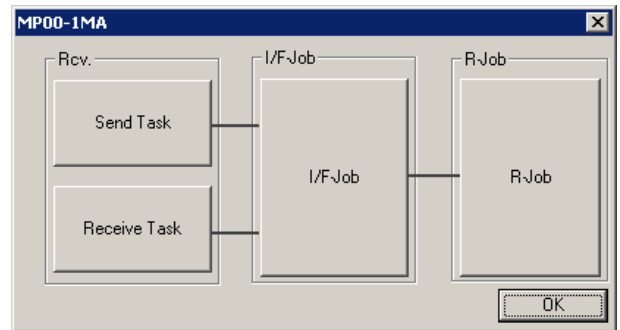
[Explanation on statuses]

The test result is shown by the appearance of the Task button as follows:

Black : The MP is normal from the viewpoint of software.

Blinking : The blinking part has a problem.

Gray : Not diagnosed yet.



[Supplemental explanation]

There are five types of status as shown below:

When the hardware is abnormal : Rcv., I/F-JOB, and R-JOB are indicated in gray.

When the software is normal : Rcv., I/F-JOB, and R-JOB are indicated in black.

When the Rcv. is abnormal : Rcv. indication blinks, and I/F-JOB and R-JOB are indicated in gray.

When the I/F-JOB is abnormal : Rcv. is indicated in black, I/F-JOB indication blinks, and R-JOB is indicated in gray.

When the R-JOB is abnormal : Rcv. and I/F JOB are indicated in black and R-JOB indication blinks.

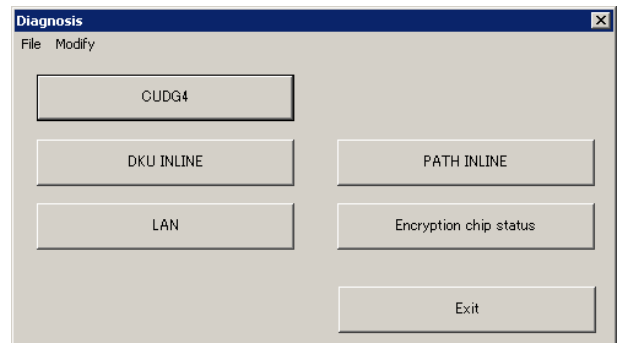
7. <Exiting from LAN Check>

Select (CL) [Exit] in the 'LAN Check' window.

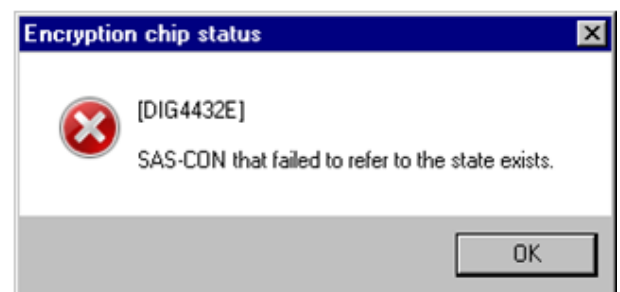
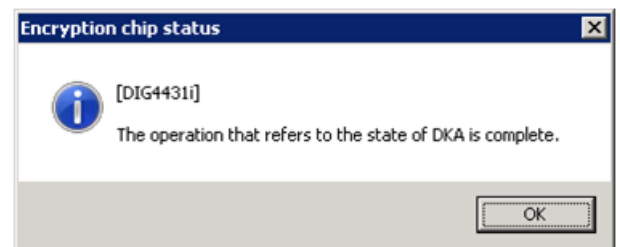


DIAG04-310**4.5 Encryption chip status Check Procedures**

1. <Initial screen>
2. <Operation mode change>
Change the mode to [Modify mode].
Select (CL) [Diagnosis].
3. <Activating Encryption chip status>
Select (CL) [Encryption chip status].



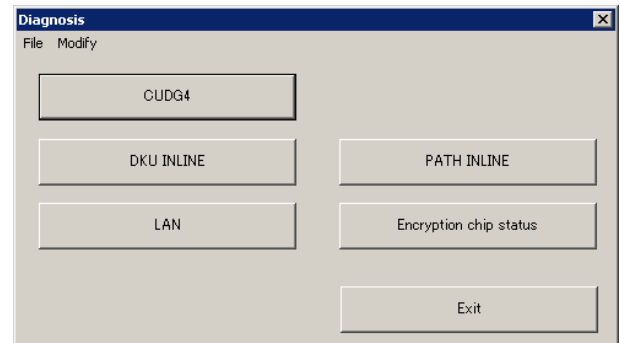
4. <Confirmation of Encryption DKA>
 - Normal end
If Checker makes the state check of the encryption DKA complete, the execution confirmation message is displayed. Please refer to SSBLOG of Code = F87E for encryption DKA.
(Please refer to SSBLOG SECTION for the check method of SSBLOG.)
 - Abnormal end
If SAS-CON which failed in referring to a state exists in DKA, the error message is displayed. Please refer to SSBLOG of Code = F87F for failed SAS-CON, and refer to SSBLOG of Code = F87E for satisfactory SAS-CON.
(Please refer to SSBLOG SECTION for the check method of SSBLOG.)



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5. <Exiting from Encryption chip status Check>
Select (CL) [OK] in the message window displayed by the 4.
-

6. <End of Diagnosis>
Select (CL) [Exit].



5. DIAG Trouble shooting

5.1 CUDG Trouble shooting

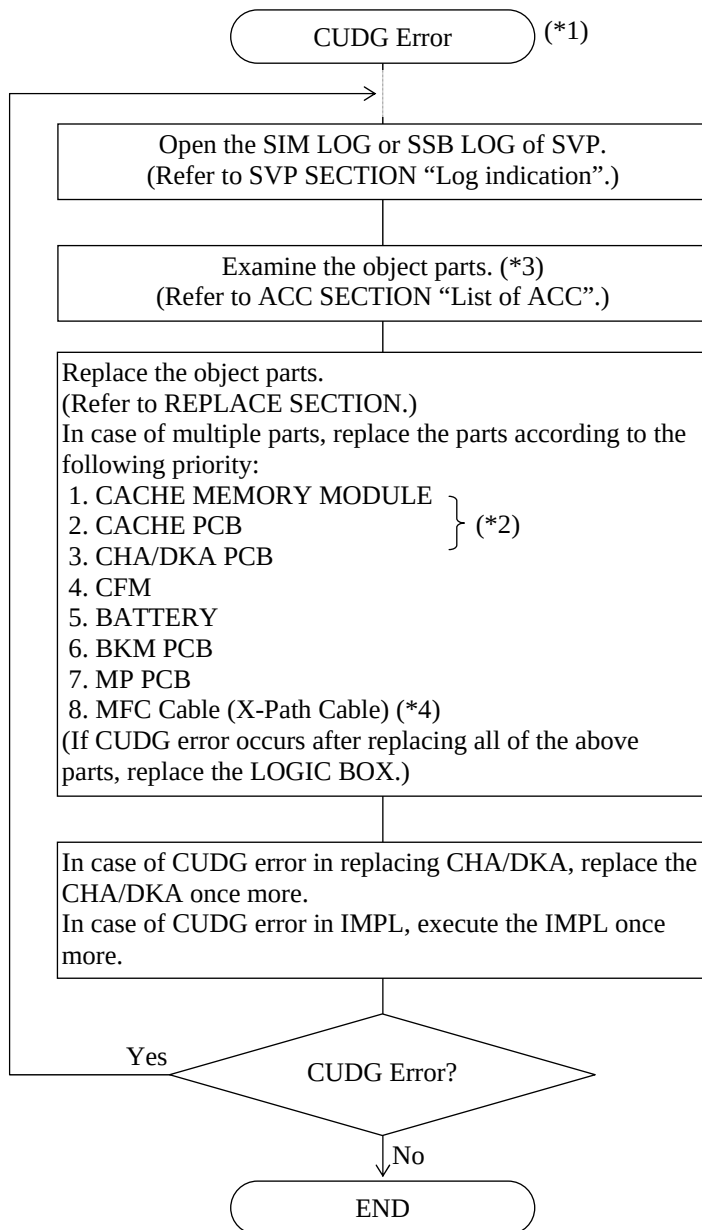
Procedures of CUDG Trouble Shooting depend on CUDG Error Opportunity.
The procedures are listed in Table 5.1-1 CUDG Trouble shooting Types.

Table 5.1-1 CUDG Trouble shooting Types

CUDG Error Opportunity	CUDG Trouble shooting Types	Procedure
IMPL, CHA/DKA Replace, CHA/DKA Install	CUDG3 Trouble shooting	Following Subsection 5.1.1
CUDG4	CUDG4 Trouble shooting	Following Subsection 5.1.2
CACHE Replace, CACHE Install	INLINE CUDG Trouble shooting	Following Subsection 5.1.3

NOTE: If ACC is CACHE PCB or CACHE MEMORY MODULE, see Subsection 5.1.4
([DIAG05-60](#)).

5.1.1 CUDG3 Trouble shooting



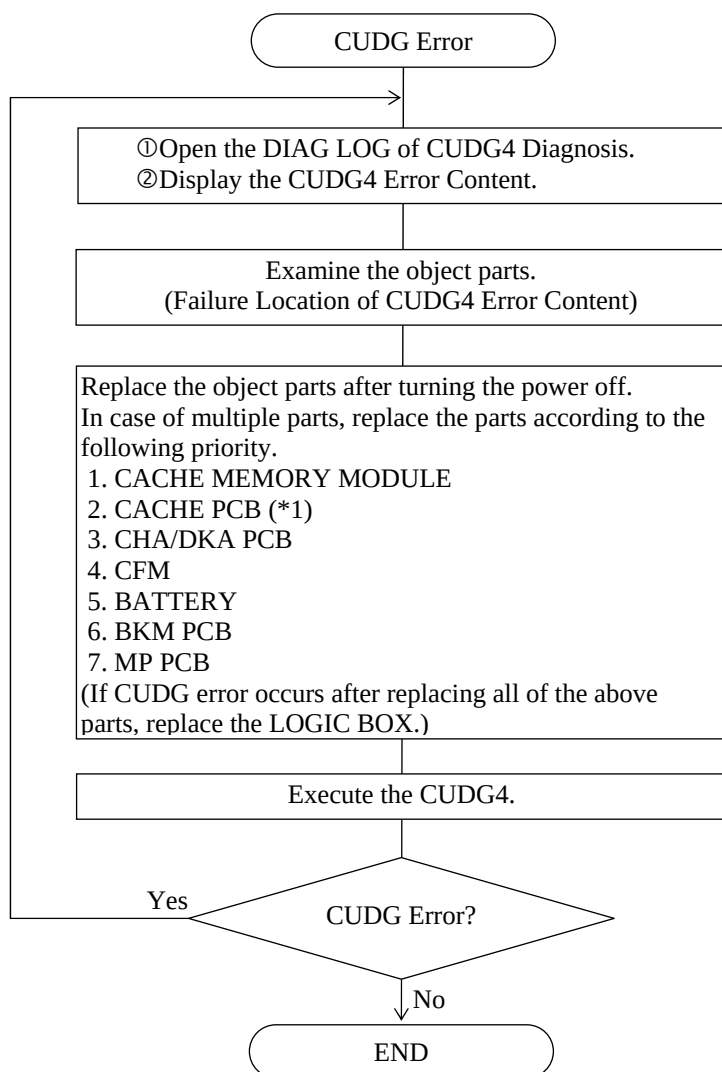
*1: CUDG Error Code is SIM REFERENCE CODE = (7600xx, 7604xx) or SSB ERROR CODE = (3306).

*2: See Subsection 5.1.4 ([DIAG05-60](#)).

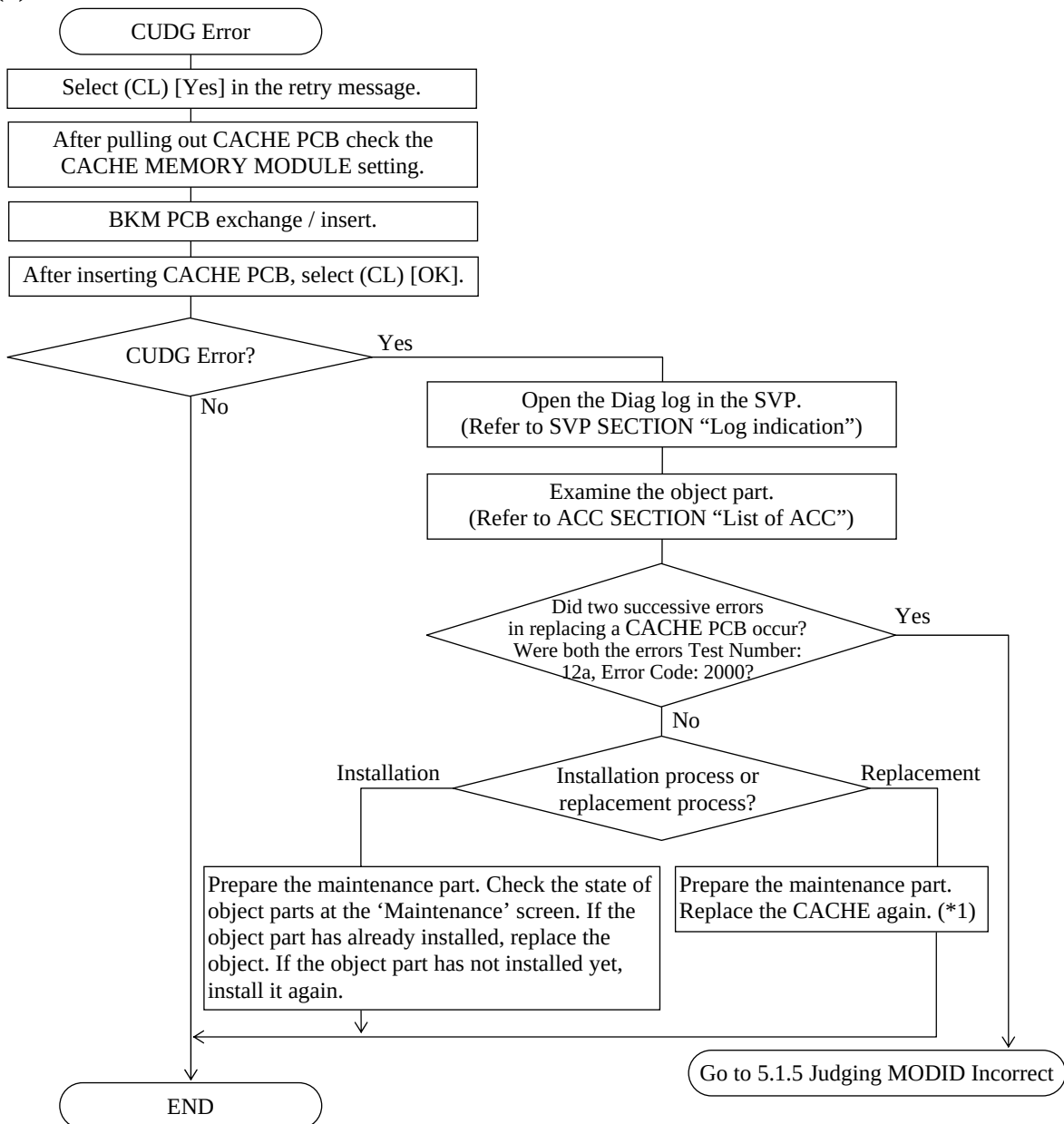
*3: Even if DKA (Disk Adapter PCB) is installed when the trouble of the Link error is detected by sharing CHA/DKA SLOT, “CHA-xxx” might be displayed in the Action Code (Location). When DKA is installed, Action Code (Location) is judged to be “DKA-xxx”.

*4: If the MFC cable has been pointed out by the action code, to check connection of MFC cable, the connection destination.

5.1.2 CUDG4 Trouble shooting



*1: When CACHE PCB of module#0 and CACHE PCB of module#1 were displayed in Failure Location, Cables that connect module # 0 and module # 1 are exchanged before CACHE PCB is exchanged.

DIAG05-40**5.1.3 INLINE CUDG Trouble shooting****(1) Installation**

*1: In case of multiple parts, replace the parts according to the following priority:

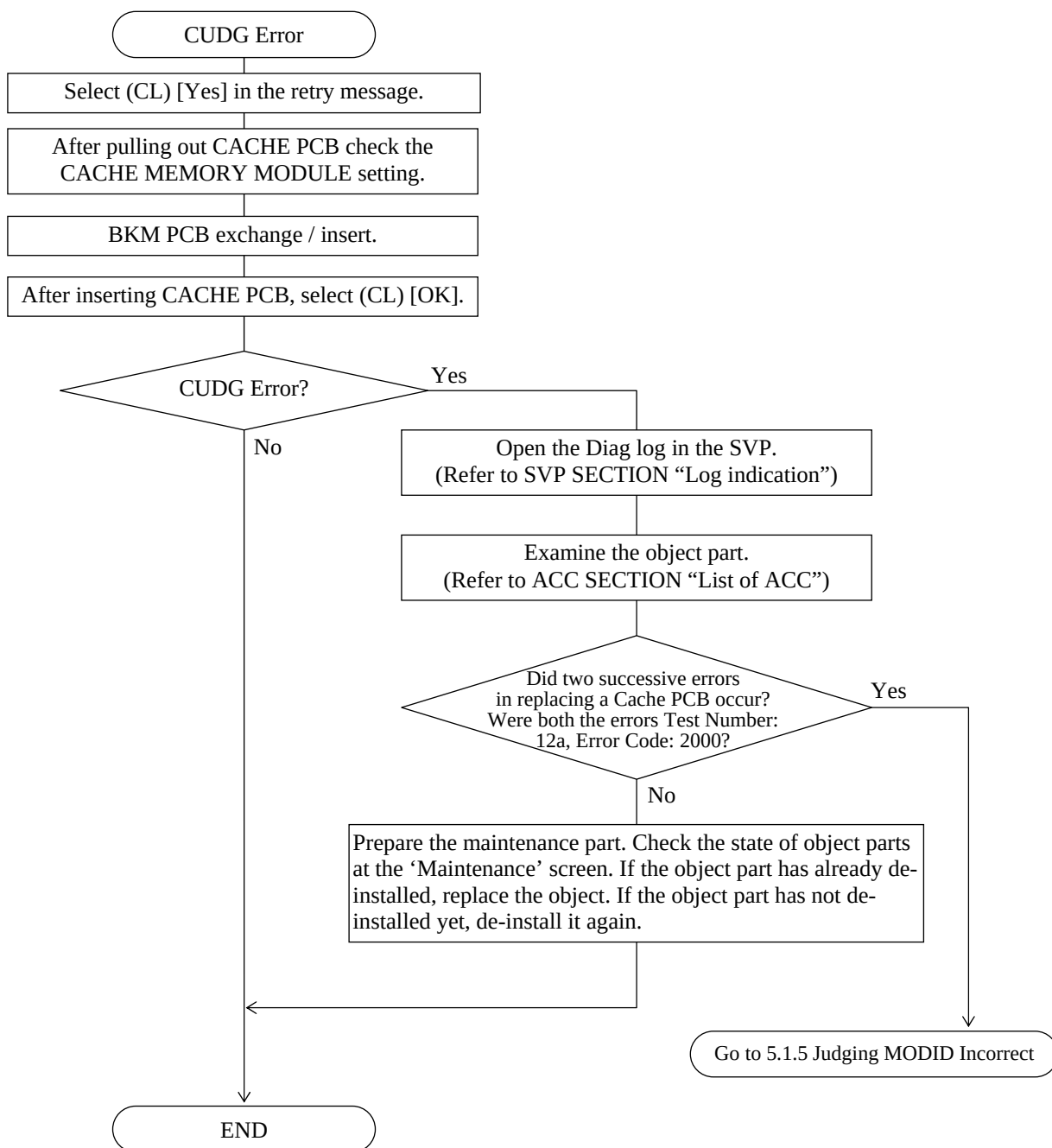
- ① CACHE MEMORY MODULE
- ② CACHE PCB
- ③ CHA/DKA PCB
- ④ CFM
- ⑤ BATTERY
- ⑥ BKM PCB
- ⑦ MP PCB

(If a CUDG error occurred after replacing all of the above parts, replace LOGIC BOX.)

If the error part is CACHE MEMORY MODULE/CACHE PCB, refer to Subsection 5.1.4

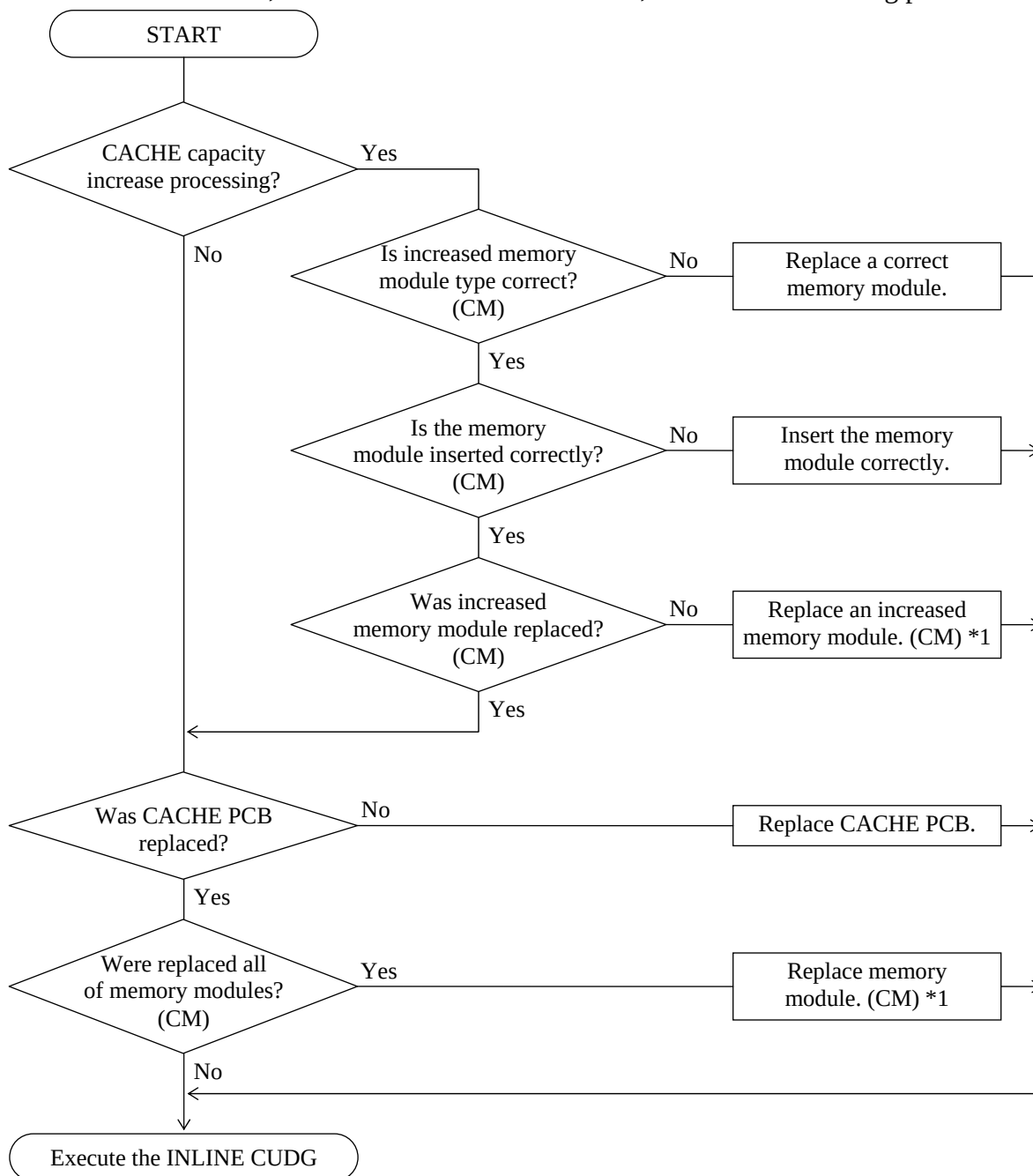
([DIAG05-60](#)).

(2) De-Installation



DIAG05-60**5.1.4 CACHE PCB, CACHE MEMORY MODULE Trouble shooting**

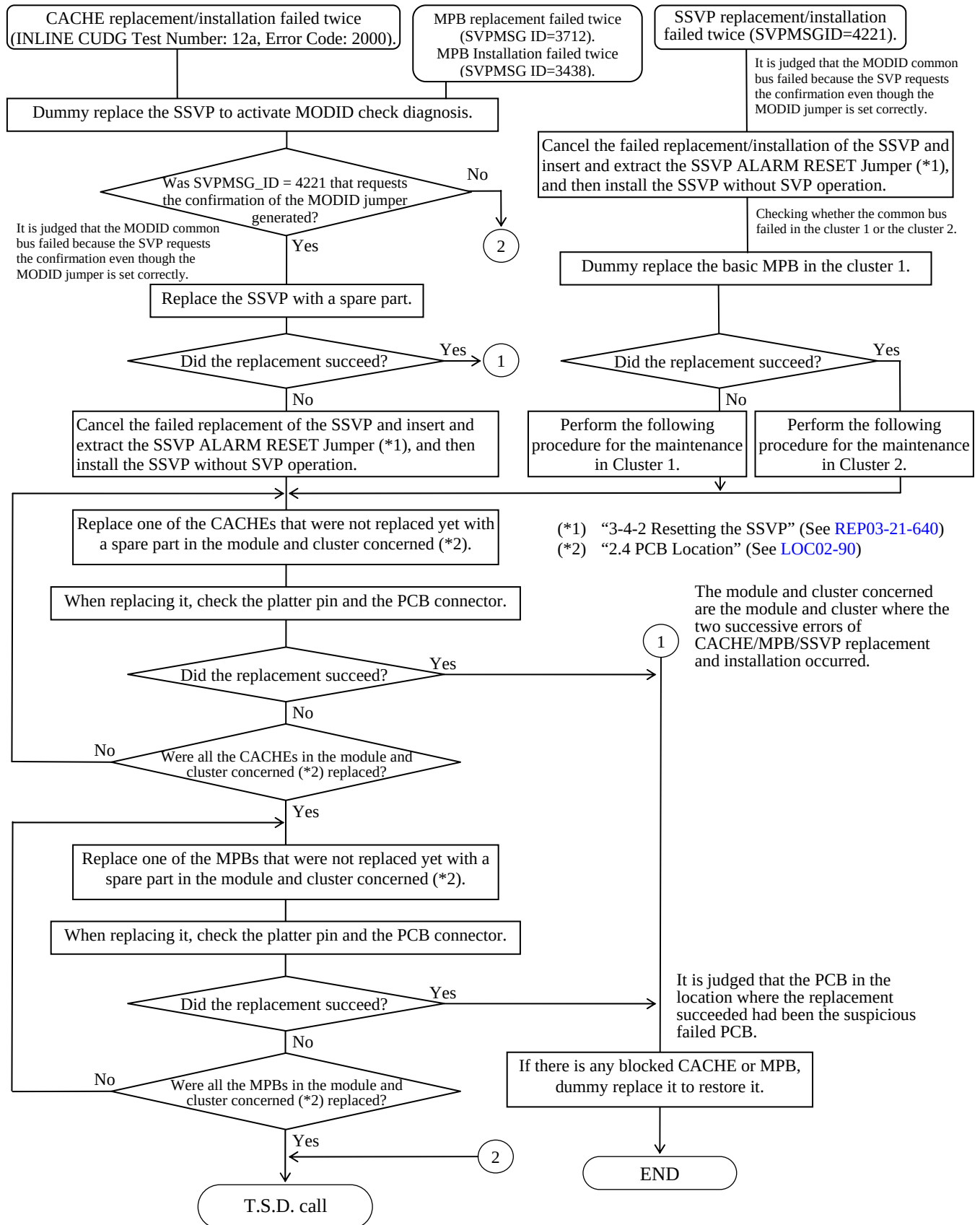
If ACC is CACHE PCB, CACHE MEMORY MODULE, execute the following process.



*1: In case of multiple module groups, replace the module groups one by one.

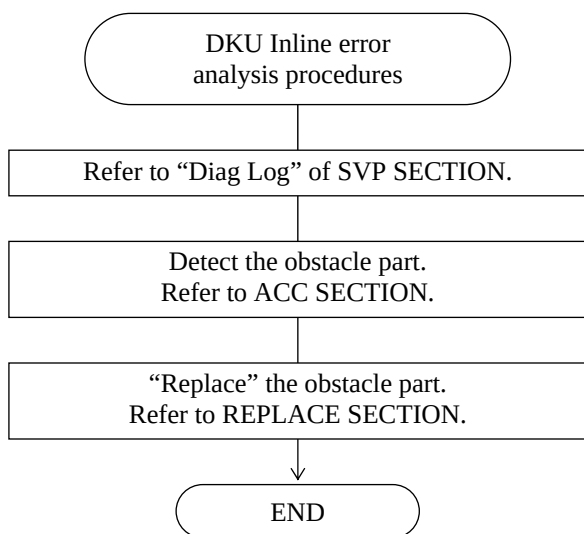
If a CUDG error occurs after replacing the group, put them to original position.

5.1.5 Judgement of MODID Incorrectness and Recovery Procedure in Case of Two Successive Errors of Replacement/Installation of CACHE/MPB/SSVP

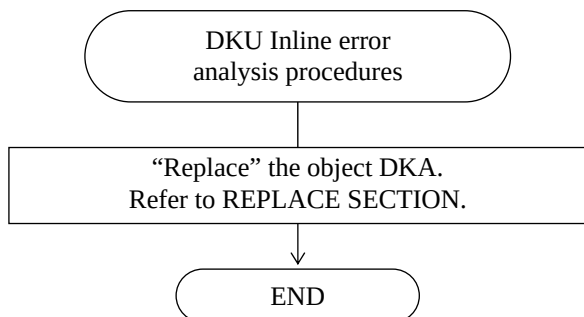


5.2 DKU INLINE Trouble shooting

Trouble shoot procedures (Except Error Code = “xx e3” / “xx e4”)

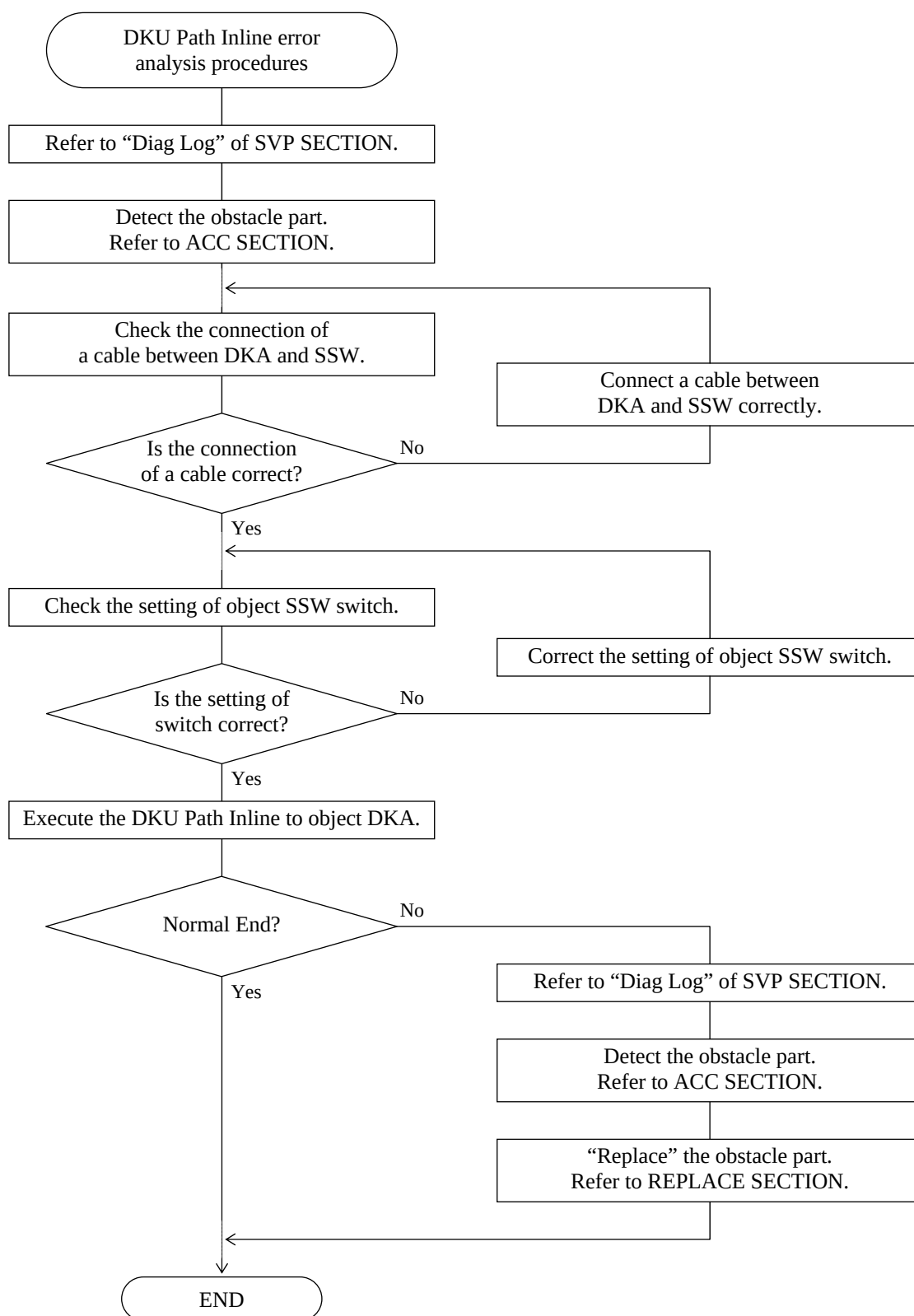


Trouble shoot procedures (In case of Error Code = “xx e3” / “xx e4”)

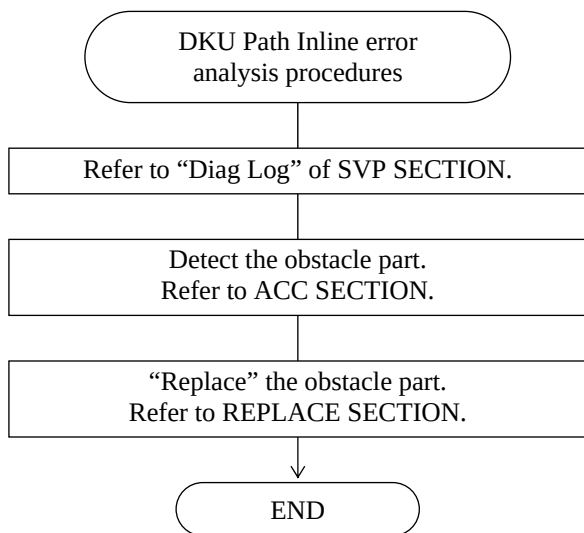


5.3 DKU PATH INLINE Trouble shooting

Trouble shoot procedures (Error Code = “ax ad”, “ax ae”, “ax 07”)



Trouble shoot procedures (Except Error Code = “ax ad”, “ax ae”, “ax 07”)



DIAG06-10**6. DIAG Errors****6.1 DKU INLINE Error Code List**

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte.

Error Byte										Contents
01	02	03	04	05	06	07	08	09	10	
XX	51									The Svp_InitMultiChain function failed.
XX	52									The Svp_RegistMultiChain function failed.
XX	53									The Svp_ExecMultChainedDkcFunc function failed.
XX	54									The Svp_GetMultiChain function failed.
XX	55									
XX	56									
XX	57									
XX	58									
XX	59									
XX	5A									
XX	5B									
XX	5C									
XX	5D									
XX	5E									

DIAG06-20

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte.

Error Byte										Contents
01	02	03	04	05	06	07	08	09	10	
XX	E0									The TEST UNIT READY command failed.
XX	E1									The Bypass Check command failed.
XX	E2									The Reset Bypass command failed.
XX	E3									Communication of between DKC and SVP was TIME OUT.
XX	E4									Communication failed.
XX	E5									Not Used
XX	E6									Not Used
XX	E8									The Start INLINE command was failed.
XX	E9									The End INLINE command failed.
XX	EA									The specified HDD does not exist.
XX	EB									SVP error (Program Error)
XX	EC									Windows error
XX	ED									SVP error (DKC-SVP Communication)

DIAG06-30

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte. Refer to [DIAG06-10](#), when there is nothing to the following error code tables.

Error Byte										Contents
01	02	03	04	05	06	07	08	09	10	
C1	01									Communication of the TEST UNIT READY command failed.
C1	02									The TEST UNIT READY command failed.
C1	03									Communication of the REQUEST SENSE command failed.
C1	04									The REQUEST SENSE command failed.
C1	05									The SENSE KEY is abnormal.
C1	06									The SENSE CODE is abnormal.
C1	07									The ADDITIONAL CODE is abnormal.

DIAG06-40[illegible]

DIAG06-50

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte. Refer to [DIAG06-10](#), when there is nothing to the following error code tables.

Error Byte										Contents
01	02	03	04	05	06	07	08	09	10	
C3	01									Communication of the STOP UNIT command failed.
C3	02									The STOP UNIT command failed.
C3	03									The Delay function failed.
C3	04									Communication of the START UNIT command failed.
C3	05									The START UNIT command failed.
C3	06									Communication of the TEST UNIT READY command failed.
C3	07									The TEST UNIT READY command failed.
C3	08									Communication of the REQUEST SENSE command failed.
C3	09									The REQUEST SENSE command failed.
C3	0A									The SENSE KEY is abnormal.
C3	0B									The SENSE CODE is abnormal.
C3	0C									The ADDITIONAL CODE is abnormal.

DIAG06-60

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte. Refer to [DIAG06-10](#), when there is nothing to the following error code tables.

[illegible]

DIAG06-70**6.2 PATH INLINE Error Code List**

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte.

Error Byte										Contents
01	02	03	04	05	06	07	08	09	10	
XX	51									
XX	52									
XX	53									
XX	54									
XX	55									
XX	56									
XX	57									
XX	58									
XX	59									
XX	5A									
XX	5B									
XX	5C									
XX	5D									
XX	5E									SSW that doesn't exist in configuration information is equipped. Please confirm equipping SSW.

DIAG06-80

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte.

Error Byte																		Contents
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	
XX	A1																	
XX	A2																	
XX	A3																	
XX	A4	D#	P#	U#		EV					RV							Invalid Attached SAS address data. (Next SSW connection check)
XX	A5	D#	P#	U#		EV					RV							Invalid Attached Phy Id data. (Next SSW connection check)
XX	A6	D#	P#	U#		EV					RV							Invalid Attached SAS address data. (Brunch side Next SSW connection check)
XX	A7	D#	P#	U#		EV					RV							Invalid Attached Phy Id data. (Brunch side Next SSW connection check)
XX	A8																	
XX	A9																	
XX	AA	D#	P#	U#														SSW Error (*2), (*4)
XX	AB	D#	P#	U#		EV					RV							Invalid Phy ID
XX	AC	D#	P#	U#		EV (*1)					RV							Invalid SAS address data. (*2)
XX	AD	D#	P#	U#		EV					RV							Invalid SAS address data. (*2) (Refer to AxAE for detail)
XX	AE	D#	P#	U#		EV (*1)					RV							Invalid SAS address data. (*2)
XX	BC	D#	P#	U#														Invalid connecting DKU Type.
XX	BE	D#	P#	U#														Invalid own DKU Type.

D# : DKA# P# : PORT# U# : UNIT#
(*3)

*1: Refer to SAS Address mapping ([DIAG06-270](#), [280](#)) for Expected Value.

*2: There is the possibility of a SAS cable connection mistake or a jumper setting mistake of SSW. Refer to LOCATION SECTION ([LOC06-30 to 150](#), [LOC06-190 to 250](#)) for the setting of the jumper socket and switch.

DIAG06-81

*3: DKA#, PORT#, UNIT# mapping <Standard Mode>

DKA#: 0-3	PORT#: 0-7		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00
	4: SAS-1PA-A1	HDU-001,011,021,031,041,051	1: DKU-01
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	2: DKU-02
	5: SAS-1PA-A2	HDU-003,013,023,033,043,053	3: DKU-03
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	4: DKU-04
	6: SAS-1PA-A3	HDU-005,015,025,035,045,055	5: DKU-05
1: DKA-1PB	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	
	7: SAS-1PA-A4	HDU-007,017,027,037,047,057	
2: DKA-2PA		—	
		—	
	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	4: SAS-2PA-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	5: SAS-2PA-A2	HDU-002,012,022,032,042,052	
3: DKA-2PB	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	6: SAS-2PA-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
	7: SAS-2PA-A4	HDU-006,016,026,036,046,056	
DKA#: 4-7		PORT#: 0-7	UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10
	4: SAS-1PG-A1	HDU-101,111,121,131,141,151	1: DKU-11
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	2: DKU-12
	5: SAS-1PG-A2	HDU-103,113,123,133,143,153	3: DKU-13
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	4: DKU-14
	6: SAS-1PG-A3	HDU-105,115,125,135,145,155	5: DKU-15
5: DKA-1PH	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	
	7: SAS-1PG-A4	HDU-107,117,127,137,147,157	
6: DKA-2PG		—	
		—	
	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	4: SAS-2PG-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PG-A2	HDU-103,113,123,132,143,153	
	5: SAS-2PG-A2	HDU-102,112,122,132,142,152	
7: DKA-2PH	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	6: SAS-2PG-A3	HDU-104,114,124,134,144,154	
	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
	7: SAS-2PG-A4	HDU-106,116,126,136,146,156	

*3: DKA#, PORT#, UNIT# mapping <High Performance Mode>

DKA#: 0-3	PORT#: 0-3		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	1: DKU-01
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	2: DKU-02
	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	3: DKU-03
1: DKA-1PB	0: SAS-1PB-A1	HDU-001,011,021,031,041,051	4: DKU-04
	1: SAS-1PB-A2	HDU-003,013,023,033,043,053	5: DKU-05
	2: SAS-1PB-A3	HDU-005,015,025,035,045,055	
	3: SAS-1PB-A4	HDU-007,017,027,037,047,057	
2: DKA-2PA	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
3: DKA-2PB	0: SAS-2PB-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PB-A2	HDU-002,012,022,032,042,052	
	2: SAS-2PB-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PB-A4	HDU-006,016,026,036,046,056	
DKA#: 4-7	PORT#: 0-3		UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	1: DKU-11
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	2: DKU-12
	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	3: DKU-13
5: DKA-1PH	0: SAS-1PH-A1	HDU-101,111,121,131,141,151	4: DKU-14
	1: SAS-1PH-A2	HDU-103,113,123,133,143,153	5: DKU-15
	2: SAS-1PH-A3	HDU-105,115,125,135,145,155	
	3: SAS-1PH-A4	HDU-107,117,127,137,147,157	
6: DKA-2PG	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	1: SAS-2PG-A2	HDU-103,113,123,133,143,153	
	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
7: DKA-2PH	0: SAS-2PH-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PH-A2	HDU-102,112,122,132,142,152	
	2: SAS-2PH-A3	HDU-104,114,124,134,144,154	
	3: SAS-2PH-A4	HDU-106,116,126,136,146,156	

*4: When chassis connection error (SIM: EFFEXX) is output, see “3.45 Recovery when SAS cable connection error occurs (SIM = EFFEXX)” ([TRBL03-45-10](#)).

DIAG06-90

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte.

Error Byte										Contents
01	02	03	04	05	06	07	08	09	10	
XX	E1									The Bypass Check command failed.
XX	E2									The Reset Bypass command failed.
XX	E3									Communication of between DKC and SVP was TIME OUT.
XX	E4									Communication failed.
XX	E5									The LIP command failed.
XX	E6									The Set Bypass command failed.
XX	E8									The Start INLINE command failed.
XX	E9									The End INLINE command failed.
XX	EA									The specified HDD does not exist.
XX	EB									SVP error (Program Error)
XX	EC									Windows error
XX	ED									SVP error (DKC-SVP Communication)

DIAG06-100

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte.

Error Byte										Contents
01	02	03	04	05	06	07	08	09	10	
XX	F9									The PDEV disorder detection
XX	FA									The SVR disorder detection
XX	FB									The SVR-EX disorder detection
XX	FC	D#	P#	U#						FC cable connection error. There is the possibility of a FC cable connection mistake.
XX	FE									FC Check error. There is the possibility of a FC cable connection mistake.

D# : DKA# P# : PORT# U# : UNIT#
(*3)

DIAG06-110***3: DKA#, PORT#, UNIT# mapping <Standard Mode>**

DKA#: 0-3	PORT#: 0-7		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00
	4: SAS-1PA-A1	HDU-001,011,021,031,041,051	1: DKU-01
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	2: DKU-02
	5: SAS-1PA-A2	HDU-003,013,023,033,043,053	3: DKU-03
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	4: DKU-04
	6: SAS-1PA-A3	HDU-005,015,025,035,045,055	5: DKU-05
1: DKA-1PB	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	
	7: SAS-1PA-A4	HDU-007,017,027,037,047,057	
2: DKA-2PA		—	
		—	
	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	4: SAS-2PA-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	5: SAS-2PA-A2	HDU-002,012,022,032,042,052	
3: DKA-2PB	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	6: SAS-2PA-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
	7: SAS-2PA-A4	HDU-006,016,026,036,046,056	
DKA#: 4-7		—	
		—	
DKA#: 4-7	PORT#: 0-7		UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10
	4: SAS-1PG-A1	HDU-101,111,121,131,141,151	1: DKU-11
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	2: DKU-12
	5: SAS-1PG-A2	HDU-103,113,123,133,143,153	3: DKU-13
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	4: DKU-14
	6: SAS-1PG-A3	HDU-105,115,125,135,145,155	5: DKU-15
5: DKA-1PH	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	
	7: SAS-1PG-A4	HDU-107,117,127,137,147,157	
		—	
		—	
6: DKA-2PG	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	4: SAS-2PG-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PG-A2	HDU-103,113,123,132,143,153	
	5: SAS-2PG-A2	HDU-102,112,122,132,142,152	
	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	6: SAS-2PG-A3	HDU-104,114,124,134,144,154	
7: DKA-2PH	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
	7: SAS-2PG-A4	HDU-106,116,126,136,146,156	
7: DKA-2PH		—	
		—	

DIAG06-120

*3: DKA#, PORT#, UNIT# mapping <High Performance Mode>

DKA#: 0-3	PORT#: 0-3		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	1: DKU-01
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	2: DKU-02
	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	3: DKU-03
1: DKA-1PB	0: SAS-1PB-A1	HDU-001,011,021,031,041,051	4: DKU-04
	1: SAS-1PB-A2	HDU-003,013,023,033,043,053	5: DKU-05
	2: SAS-1PB-A3	HDU-005,015,025,035,045,055	
	3: SAS-1PB-A4	HDU-007,017,027,037,047,057	
2: DKA-2PA	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
3: DKA-2PB	0: SAS-2PB-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PB-A2	HDU-002,012,022,032,042,052	
	2: SAS-2PB-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PB-A4	HDU-006,016,026,036,046,056	
DKA#: 4-7	PORT#: 0-3		UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	1: DKU-11
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	2: DKU-12
	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	3: DKU-13
5: DKA-1PH	0: SAS-1PH-A1	HDU-101,111,121,131,141,151	4: DKU-14
	1: SAS-1PH-A2	HDU-103,113,123,133,143,153	5: DKU-15
	2: SAS-1PH-A3	HDU-105,115,125,135,145,155	
	3: SAS-1PH-A4	HDU-107,117,127,137,147,157	
6: DKA-2PG	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	1: SAS-2PG-A2	HDU-103,113,123,133,143,153	
	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
7: DKA-2PH	0: SAS-2PH-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PH-A2	HDU-102,112,122,132,142,152	
	2: SAS-2PH-A3	HDU-104,114,124,134,144,154	
	3: SAS-2PH-A4	HDU-106,116,126,136,146,156	

DIAG06-130

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte. Refer to from [DIAG06-70 to DIAG06-120](#), when there is nothing to the following error code tables.

Error Byte											Contents
01	02	03	04	05	06	07	08	09	10	11	
A0	01										The Reset Bypass command failed.
A0	02										The Bypass check command failed.
A0	03										Communication of the INQUIRY command failed.
A0	04										The INQUIRY information failed.
A0	05										The INQUIRY command failed.
A0	06										The Vender ID doesn't match.
A0	07										PORT mistake. There is the possibility of a SAS cable connection mistake.
A0	0B										Bypass check error
A0	1X	D#	P0S	P1S	P2S	P3S	P4S	P5S	P6S	P7S	Obstruction occurred in a part of the PATH.
A0	2X	D#	P0S	P1S	P2S	P3S	P4S	P5S	P6S	P7S	Obstruction occurred in all the PATH.
A0	A4	D#	P#	U#							Invalid Attached SAS address data. (Next ENC connection check)
A0	A5	D#	P#	U#							Invalid Attached Phy Id data. (Next ENC connection check)
A0	A6	D#	P#	U#							Invalid Attached SAS address data. (Brunch side Next SSW connection check)
A0	A7	D#	P#	U#							Invalid Attached Phy Id data. (Brunch side Next SSW connection check)
A0	AA	D#	P#	U#							SSW Error (*1), (*3)
A0	AB	D#	P#	U#							Invalid Phy ID
A0	AD										Invalid SAS address data. (*1) (Refer to A0AE for detail)
A0	AE	D#	P#	U#							Invalid SAS address data. (*1)
A0	BC	D#	P#	U#							Invalid connecting DKU Type.
A0	BE	D#	P#	U#							Invalid own DKU Type.

D# : DKA# P# : PORT# U# : UNIT# EV : Expected Value

RV : Received Value P(0-7)S : PORT#(0-7) report (FF : Normal, Not FF : Abnormal)

(*2)

DIAG06-140

*1: There is the possibility of a SAS cable connection mistake or a jumper setting mistake of SSW.
Refer to LOCATION SECTION ([LOC06-30 to 150](#), [LOC06-190 to 250](#)) for the setting of the jumper socket and switch.

*2: DKA#, PORT#, UNIT# mapping <Standard Mode>

DKA#: 0-3	PORT#: 0-7		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00 1: DKU-01 2: DKU-02 3: DKU-03 4: DKU-04 5: DKU-05
	4: SAS-1PA-A1	HDU-001,011,021,031,041,051	
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	
	5: SAS-1PA-A2	HDU-003,013,023,033,043,053	
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	
	6: SAS-1PA-A3	HDU-005,015,025,035,045,055	
	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	
1: DKA-1PB		—	
		—	
2: DKA-2PA	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	4: SAS-2PA-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	5: SAS-2PA-A2	HDU-002,012,022,032,042,052	
	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	6: SAS-2PA-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
3: DKA-2PB		—	
		—	
DKA#: 4-7	PORT#: 0-7		UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10 1: DKU-11 2: DKU-12 3: DKU-13 4: DKU-14 5: DKU-15
	4: SAS-1PG-A1	HDU-101,111,121,131,141,151	
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	
	5: SAS-1PG-A2	HDU-103,113,123,133,143,153	
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	
	6: SAS-1PG-A3	HDU-105,115,125,135,145,155	
	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	
5: DKA-1PH		—	
		—	
6: DKA-2PG	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	4: SAS-2PG-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PG-A2	HDU-103,113,123,132,143,153	
	5: SAS-2PG-A2	HDU-102,112,122,132,142,152	
	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	6: SAS-2PG-A3	HDU-104,114,124,134,144,154	
	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
7: DKA-2PH		—	
		—	

DIAG06-150

*2: DKA#, PORT#, UNIT# mapping <High Performance Mode>

DKA#: 0-3	PORT#: 0-3		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	1: DKU-01
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	2: DKU-02
	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	3: DKU-03
1: DKA-1PB	0: SAS-1PB-A1	HDU-001,011,021,031,041,051	4: DKU-04
	1: SAS-1PB-A2	HDU-003,013,023,033,043,053	5: DKU-05
	2: SAS-1PB-A3	HDU-005,015,025,035,045,055	
	3: SAS-1PB-A4	HDU-007,017,027,037,047,057	
2: DKA-2PA	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
3: DKA-2PB	0: SAS-2PB-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PB-A2	HDU-002,012,022,032,042,052	
	2: SAS-2PB-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PB-A4	HDU-006,016,026,036,046,056	
DKA#: 4-7	PORT#: 0-3		UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	1: DKU-11
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	2: DKU-12
	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	3: DKU-13
5: DKA-1PH	0: SAS-1PH-A1	HDU-101,111,121,131,141,151	4: DKU-14
	1: SAS-1PH-A2	HDU-103,113,123,133,143,153	5: DKU-15
	2: SAS-1PH-A3	HDU-105,115,125,135,145,155	
	3: SAS-1PH-A4	HDU-107,117,127,137,147,157	
6: DKA-2PG	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	1: SAS-2PG-A2	HDU-103,113,123,133,143,153	
	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
7: DKA-2PH	0: SAS-2PH-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PH-A2	HDU-102,112,122,132,142,152	
	2: SAS-2PH-A3	HDU-104,114,124,134,144,154	
	3: SAS-2PH-A4	HDU-106,116,126,136,146,156	

*3: When chassis connection error (SIM: EFFEXX) is output, see “3.45 Recovery when SAS cable connection error occurs (SIM = EFFEXX)” ([TRBL03-45-10](#)).

DIAG06-160

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte. Refer to from [DIAG06-70 to DIAG06-120](#), when there is nothing to the following error code tables.

Error Byte											Contents
01	02	03	04	05	06	07	08	09	10	11	
A1	01										The Reset Bypass command failed.
A1	02										The Bypass check command failed.
A1	03										Communication of the INQUIRY command failed.
A1	04										The INQUIRY information failed.
A1	05										The INQUIRY command failed.
A1	06										The Vender ID doesn't match.
A1	07										PORT mistake. There is the possibility of a SAS cable connection mistake.
A1	0B										Bypass check error
A1	1X	D#	P0S	P1S	P2S	P3S	P4S	P5S	P6S	P7S	Obstruction occurred in a part of the PATH
A1	2X	D#	P0S	P1S	P2S	P3S	P4S	P5S	P6S	P7S	Obstruction occurred in all the PATH.
A1	A4	D#	P#	U#							Invalid Attached SAS address data. (Next ENC connection check)
A1	A5	D#	P#	U#							Invalid Attached Phy Id data. (Next ENC connection check)
A1	A6	D#	P#	U#							Invalid Attached SAS address data. (Brunch side Next SSW connection check)
A1	A7	D#	P#	U#							Invalid Attached Phy Id data. (Brunch side Next SSW connection check)
A1	AA	D#	P#	U#							SSW Error (*1), (*3)
A1	AB	D#	P#	U#							Invalid Phy ID
A1	AD										Invalid SAS address data. (*1) (Refer to A1AE for detail)
A1	AE	D#	P#	U#							Invalid SAS address data. (*1)
A1	BC	D#	P#	U#							Invalid connecting DKU Type.
A1	BE	D#	P#	U#							Invalid own DKU Type.

D# : DKA# P# : PORT# U# : UNIT# EV : Expected Value

RV : Received Value P(0-7)S : PORT#(0-7) report (FF : Normal, Not FF : Abnormal)

(*2)

DIAG06-170

*1: There is the possibility of a SAS cable connection mistake or a jumper setting mistake of SSW.
Refer to LOCATION SECTION ([LOC06-30 to 150](#), [LOC06-190 to 250](#)) for the setting of the jumper socket and switch.

*2: DKA#, PORT#, UNIT# mapping <Standard Mode>

DKA#: 0-3	PORT#: 0-7		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00 1: DKU-01 2: DKU-02 3: DKU-03 4: DKU-04 5: DKU-05
	4: SAS-1PA-A1	HDU-001,011,021,031,041,051	
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	
	5: SAS-1PA-A2	HDU-003,013,023,033,043,053	
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	
	6: SAS-1PA-A3	HDU-005,015,025,035,045,055	
	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	
	7: SAS-1PA-A4	HDU-007,017,027,037,047,057	
1: DKA-1PB		—	
		—	
2: DKA-2PA	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	4: SAS-2PA-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	5: SAS-2PA-A2	HDU-002,012,022,032,042,052	
	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	6: SAS-2PA-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
	7: SAS-2PA-A4	HDU-006,016,026,036,046,056	
3: DKA-2PB		—	
		—	
DKA#: 4-7	PORT#: 0-7		UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10 1: DKU-11 2: DKU-12 3: DKU-13 4: DKU-14 5: DKU-15
	4: SAS-1PG-A1	HDU-101,111,121,131,141,151	
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	
	5: SAS-1PG-A2	HDU-103,113,123,133,143,153	
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	
	6: SAS-1PG-A3	HDU-105,115,125,135,145,155	
	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	
	7: SAS-1PG-A4	HDU-107,117,127,137,147,157	
5: DKA-1PH		—	
		—	
6: DKA-2PG	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	4: SAS-2PG-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PG-A2	HDU-103,113,123,132,143,153	
	5: SAS-2PG-A2	HDU-102,112,122,132,142,152	
	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	6: SAS-2PG-A3	HDU-104,114,124,134,144,154	
	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
	7: SAS-2PG-A4	HDU-106,116,126,136,146,156	
7: DKA-2PH		—	
		—	

DIAG06-180

*2: DKA#, PORT#, UNIT# mapping <High Performance Mode>

DKA#: 0-3	PORT#: 0-3		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	1: DKU-01
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	2: DKU-02
	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	3: DKU-03
1: DKA-1PB	0: SAS-1PB-A1	HDU-001,011,021,031,041,051	4: DKU-04
	1: SAS-1PB-A2	HDU-003,013,023,033,043,053	5: DKU-05
	2: SAS-1PB-A3	HDU-005,015,025,035,045,055	
	3: SAS-1PB-A4	HDU-007,017,027,037,047,057	
2: DKA-2PA	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
3: DKA-2PB	0: SAS-2PB-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PB-A2	HDU-002,012,022,032,042,052	
	2: SAS-2PB-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PB-A4	HDU-006,016,026,036,046,056	
DKA#: 4-7	PORT#: 0-3		UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	1: DKU-11
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	2: DKU-12
	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	3: DKU-13
5: DKA-1PH	0: SAS-1PH-A1	HDU-101,111,121,131,141,151	4: DKU-14
	1: SAS-1PH-A2	HDU-103,113,123,133,143,153	5: DKU-15
	2: SAS-1PH-A3	HDU-105,115,125,135,145,155	
	3: SAS-1PH-A4	HDU-107,117,127,137,147,157	
6: DKA-2PG	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	1: SAS-2PG-A2	HDU-103,113,123,133,143,153	
	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
7: DKA-2PH	0: SAS-2PH-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PH-A2	HDU-102,112,122,132,142,152	
	2: SAS-2PH-A3	HDU-104,114,124,134,144,154	
	3: SAS-2PH-A4	HDU-106,116,126,136,146,156	

*3: When chassis connection error (SIM: EFFEXX) is output, see “3.45 Recovery when SAS cable connection error occurs (SIM = EFFEXX)” ([TRBL03-45-10](#)).

DIAG06-190

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte. Refer to from [DIAG06-70 to DIAG06-120](#), when there is nothing to the following error code tables.

Error Byte										Contents
01	02	03	04	05	06	07	08	09	10	
A2	01									
A2	02									
A2	03									
A2	04									
A2	05									
A2	06									
A2	07									The Drive Read command failed.
A2	08									
A2	09									
A2	0A									
A2	0B									
A2	10									ERROR DRIVE exists. (Refer to the Diag Log for details.)

DIAG06-70 to DIAG06-120, when there is nothing to the following error code tables.

[illegible]

DIAG06-210

NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte. Refer to from [DIAG06-70 to DIAG06-120](#), when there is nothing to the following error code tables.

Error Byte											Contents
01	02	03	04	05	06	07	08	09	10	11	
A5	01										The Reset Bypass command failed.
A5	02										The Bypass check command failed.
A5	03										Communication of the INQUIRY command failed.
A5	04										The INQUIRY information failed.
A5	05										The INQUIRY command failed.
A5	06										The Vender ID doesn't match.
A5	07										PORT mistake. There is the possibility of a SAS cable connection mistake.
A5	0B										Bypass check error
A5	1X	D#	P0S	P1S	P2S	P3S	P4S	P5S	P6S	P7S	Obstruction occurred in a part of the PATH
A5	2X	D#	P0S	P1S	P2S	P3S	P4S	P5S	P6S	P7S	Obstruction occurred in all the PATH.
A5	A4	D#	P#	U#							Invalid Attached SAS address data. (Next ENC connection check)
A5	A5	D#	P#	U#							Invalid Attached Phy Id data. (Next ENC connection check)
A5	A6	D#	P#	U#							Invalid Attached SAS address data. (Brunch side Next SSW connection check)
A5	A7	D#	P#	U#							Invalid Attached Phy Id data. (Brunch side Next.SSW connection check)
A5	AA	D#	P#	U#							SSW Error (*1), (*3)
A5	AB	D#	P#	U#							Invalid Phy ID
A5	AD										Invalid SAS address data. (*1) (Refer to A5AE for detail)
A5	AE	D#	P#	U#							Invalid SAS address data. (*1)
A5	BC	D#	P#	U#							Invalid connecting DKU Type.
A5	BE	D#	P#	U#							Invalid own DKU Type.

D# : DKA# P# : PORT# U# : UNIT# EV : Expected Value

RV : Received Value P(0-7)S : PORT#(0-7) report (FF : Normal, Not FF : Abnormal)

(*2)

DIAG06-220

*1: There is the possibility of a SAS cable connection mistake or a jumper setting mistake of SSW.
Refer to LOCATION SECTION ([LOC06-30 to 150](#), [LOC06-190 to 250](#)) for the setting of the jumper socket and switch.

*2: DKA#, PORT#, UNIT# mapping <Standard Mode>

DKA#: 0-3	PORT#: 0-7		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00 1: DKU-01 2: DKU-02 3: DKU-03 4: DKU-04 5: DKU-05
	4: SAS-1PA-A1	HDU-001,011,021,031,041,051	
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	
	5: SAS-1PA-A2	HDU-003,013,023,033,043,053	
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	
	6: SAS-1PA-A3	HDU-005,015,025,035,045,055	
	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	
	7: SAS-1PA-A4	HDU-007,017,027,037,047,057	
1: DKA-1PB		—	
		—	
2: DKA-2PA	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	4: SAS-2PA-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	5: SAS-2PA-A2	HDU-002,012,022,032,042,052	
	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	6: SAS-2PA-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
	7: SAS-2PA-A4	HDU-006,016,026,036,046,056	
3: DKA-2PB		—	
		—	
DKA#: 4-7	PORT#: 0-7		UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10 1: DKU-11 2: DKU-12 3: DKU-13 4: DKU-14 5: DKU-15
	4: SAS-1PG-A1	HDU-101,111,121,131,141,151	
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	
	5: SAS-1PG-A2	HDU-103,113,123,133,143,153	
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	
	6: SAS-1PG-A3	HDU-105,115,125,135,145,155	
	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	
	7: SAS-1PG-A4	HDU-107,117,127,137,147,157	
5: DKA-1PH		—	
		—	
6: DKA-2PG	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	4: SAS-2PG-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PG-A2	HDU-103,113,123,132,143,153	
	5: SAS-2PG-A2	HDU-102,112,122,132,142,152	
	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	6: SAS-2PG-A3	HDU-104,114,124,134,144,154	
	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
	7: SAS-2PG-A4	HDU-106,116,126,136,146,156	
7: DKA-2PH		—	
		—	

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*2: DKA#, PORT#, UNIT# mapping <High Performance Mode>

DKA#: 0-3	PORT#: 0-3		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	1: DKU-01
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	2: DKU-02
	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	3: DKU-03
1: DKA-1PB	0: SAS-1PB-A1	HDU-001,011,021,031,041,051	4: DKU-04
	1: SAS-1PB-A2	HDU-003,013,023,033,043,053	5: DKU-05
	2: SAS-1PB-A3	HDU-005,015,025,035,045,055	
	3: SAS-1PB-A4	HDU-007,017,027,037,047,057	
2: DKA-2PA	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
3: DKA-2PB	0: SAS-2PB-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PB-A2	HDU-002,012,022,032,042,052	
	2: SAS-2PB-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PB-A4	HDU-006,016,026,036,046,056	
DKA#: 4-7	PORT#: 0-3		UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	1: DKU-11
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	2: DKU-12
	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	3: DKU-13
5: DKA-1PH	0: SAS-1PH-A1	HDU-101,111,121,131,141,151	4: DKU-14
	1: SAS-1PH-A2	HDU-103,113,123,133,143,153	5: DKU-15
	2: SAS-1PH-A3	HDU-105,115,125,135,145,155	
	3: SAS-1PH-A4	HDU-107,117,127,137,147,157	
6: DKA-2PG	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	1: SAS-2PG-A2	HDU-103,113,123,133,143,153	
	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
7: DKA-2PH	0: SAS-2PH-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PH-A2	HDU-102,112,122,132,142,152	
	2: SAS-2PH-A3	HDU-104,114,124,134,144,154	
	3: SAS-2PH-A4	HDU-106,116,126,136,146,156	

*3: When chassis connection error (SIM: EFFEXX) is output, see “3.45 Recovery when SAS cable connection error occurs (SIM = EFFEXX)” ([TRBL03-45-10](#)).

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NOTE: Replace Error Code on Diagnosis Log of SVP Information since the 8th Byte and after of the Detail Information Byte correspond to Byte 01 and after of Error Byte. Refer to from [DIAG06-70 to DIAG06-120](#), when there is nothing to the following error code tables.

Error Byte											Contents
01	02	03	04	05	06	07	08	09	10	11	
A6	01										The Reset Bypass command failed.
A6	02										The Bypass check command failed.
A6	03										Communication of the INQUIRY command failed.
A6	04										The INQUIRY information failed.
A6	05										The INQUIRY command failed.
A6	06										The Vender ID doesn't match.
A6	07										PORT mistake. There is the possibility of a SAS cable connection mistake.
A6	0B										Bypass check error
A6	1X	D#	P0S	P1S	P2S	P3S	P4S	P5S	P6S	P7S	Obstruction occurred in a part of the PATH
A6	2X	D#	P0S	P1S	P2S	P3S	P4S	P5S	P6S	P7S	Obstruction occurred in all the PATH.
A6	A4	D#	P#	U#							Invalid Attached SAS address data. (Next ENC connection check)
A6	A5	D#	P#	U#							Invalid Attached Phy Id data. (Next ENC connection check)
A6	A6	D#	P#	U#							Invalid Attached SAS address data. (Brunch side Next SSW connection check)
A6	A7	D#	P#	U#							Invalid Attached Phy Id data. (Brunch side Next SSW connection check)
A6	AA	D#	P#	U#							SSW Error (*1), (*3)
A6	AB	D#	P#	U#							Invalid Phy ID
A6	AD										Invalid SAS address data. (*1) (Refer to A6AE for detail)
A6	AE	D#	P#	U#							Invalid SAS address data. (*1)
A6	BC	D#	P#	U#							Invalid connecting DKU Type.
A6	BE	D#	P#	U#							Invalid own DKU Type.

D# : DKA# P# : PORT# U# : UNIT# EV : Expected Value

RV : Received Value P(0-7)S : PORT#(0-7) report (FF : Normal, Not FF : Abnormal)

(*2)

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*1: There is the possibility of a SAS cable connection mistake or a jumper setting mistake of SSW.
Refer to LOCATION SECTION ([LOC06-30 to 150](#), [LOC06-190 to 250](#)) for the setting of the jumper socket and switch.

*2: DKA#, PORT#, UNIT# mapping <Standard Mode>

DKA#: 0-3	PORT#: 0-7		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00 1: DKU-01 2: DKU-02 3: DKU-03 4: DKU-04 5: DKU-05
	4: SAS-1PA-A1	HDU-001,011,021,031,041,051	
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	
	5: SAS-1PA-A2	HDU-003,013,023,033,043,053	
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	
	6: SAS-1PA-A3	HDU-005,015,025,035,045,055	
	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	
1: DKA-1PB		—	
		—	
2: DKA-2PA	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	4: SAS-2PA-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	5: SAS-2PA-A2	HDU-002,012,022,032,042,052	
	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	6: SAS-2PA-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
3: DKA-2PB		—	
		—	
DKA#: 4-7	PORT#: 0-7		UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10 1: DKU-11 2: DKU-12 3: DKU-13 4: DKU-14 5: DKU-15
	4: SAS-1PG-A1	HDU-101,111,121,131,141,151	
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	
	5: SAS-1PG-A2	HDU-103,113,123,133,143,153	
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	
	6: SAS-1PG-A3	HDU-105,115,125,135,145,155	
	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	
5: DKA-1PH		—	
		—	
6: DKA-2PG	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	4: SAS-2PG-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PG-A2	HDU-103,113,123,132,143,153	
	5: SAS-2PG-A2	HDU-102,112,122,132,142,152	
	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	6: SAS-2PG-A3	HDU-104,114,124,134,144,154	
	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
7: DKA-2PH		—	
		—	

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*2: DKA#, PORT#, UNIT# mapping <High Performance Mode>

DKA#: 0-3	PORT#: 0-3		UNIT#: 0-5
0: DKA-1PA	0: SAS-1PA-A1	HDU-000,010,020,030,040,050	0: DKU-00
	1: SAS-1PA-A2	HDU-002,012,022,032,042,052	1: DKU-01
	2: SAS-1PA-A3	HDU-004,014,024,034,044,054	2: DKU-02
	3: SAS-1PA-A4	HDU-006,016,026,036,046,056	3: DKU-03
1: DKA-1PB	0: SAS-1PB-A1	HDU-001,011,021,031,041,051	4: DKU-04
	1: SAS-1PB-A2	HDU-003,013,023,033,043,053	5: DKU-05
	2: SAS-1PB-A3	HDU-005,015,025,035,045,055	
	3: SAS-1PB-A4	HDU-007,017,027,037,047,057	
2: DKA-2PA	0: SAS-2PA-A1	HDU-001,011,021,031,041,051	
	1: SAS-2PA-A2	HDU-003,013,023,033,043,053	
	2: SAS-2PA-A3	HDU-005,015,025,035,045,055	
	3: SAS-2PA-A4	HDU-007,017,027,037,047,057	
3: DKA-2PB	0: SAS-2PB-A1	HDU-000,010,020,030,040,050	
	1: SAS-2PB-A2	HDU-002,012,022,032,042,052	
	2: SAS-2PB-A3	HDU-004,014,024,034,044,054	
	3: SAS-2PB-A4	HDU-006,016,026,036,046,056	
DKA#: 4-7	PORT#: 0-3		UNIT#: 0-5
4: DKA-1PG	0: SAS-1PG-A1	HDU-100,110,120,130,140,150	0: DKU-10
	1: SAS-1PG-A2	HDU-102,112,122,132,142,152	1: DKU-11
	2: SAS-1PG-A3	HDU-104,114,124,134,144,154	2: DKU-12
	3: SAS-1PG-A4	HDU-106,116,126,136,146,156	3: DKU-13
5: DKA-1PH	0: SAS-1PH-A1	HDU-101,111,121,131,141,151	4: DKU-14
	1: SAS-1PH-A2	HDU-103,113,123,133,143,153	5: DKU-15
	2: SAS-1PH-A3	HDU-105,115,125,135,145,155	
	3: SAS-1PH-A4	HDU-107,117,127,137,147,157	
6: DKA-2PG	0: SAS-2PG-A1	HDU-101,111,121,131,141,151	
	1: SAS-2PG-A2	HDU-103,113,123,133,143,153	
	2: SAS-2PG-A3	HDU-105,115,125,135,145,155	
	3: SAS-2PG-A4	HDU-107,117,127,137,147,157	
7: DKA-2PH	0: SAS-2PH-A1	HDU-100,110,120,130,140,150	
	1: SAS-2PH-A2	HDU-102,112,122,132,142,152	
	2: SAS-2PH-A3	HDU-104,114,124,134,144,154	
	3: SAS-2PH-A4	HDU-106,116,126,136,146,156	

*3: When chassis connection error (SIM: EFFEXX) is output, see “3.45 Recovery when SAS cable connection error occurs (SIM = EFFEXX)” ([TRBL03-45-10](#)).

SAS ADDRESS Mapping <Standard Mode>

DKA CL	HDU BOX	DKU-y0 (y:0 or 1)	DKU-y1 (y:0 or 1)	DKU-y2 (y:0 or 1)	DKU-y3 (y:0 or 1)	DKU-y4 (y:0 or 1)	DKU-y5 (y:0 or 1)
		SSW (1st)	SSW (2nd)	SSW (3rd)	SSW (4th)	SSW (5th)	SSW (6th)
CL1	0	x001y03E	x101y03E	x201y03E	x301y03E	x401y03E	x501y03E
		x011y03E	x111y03E	x211y03E	x311y03E	x411y03E	x511y03E
	1	x021y03E	x121y03E	x221y03E	x321y03E	x421y03E	x521y03E
		x031y03E	x131y03E	x231y03E	x331y03E	x431y03E	x531y03E
	2	x041y03E	x141y03E	x241y03E	x341y03E	x441y03E	x541y03E
		x051y03E	x151y03E	x251y03E	x351y03E	x451y03E	x541y03E
	3	x061y03E	x161y03E	x261y03E	x361y03E	x461y03E	x561y03E
		x071y03E	x171y03E	x271y03E	x371y03E	x471y03E	x571y03E
CL2	0	x012y03E	x112y03E	x212y03E	x312y03E	x412y03E	x512y03E
		x002y03E	x102y03E	x202y03E	x302y03E	x402y03E	x502y03E
	1	x032y03E	x132y03E	x232y03E	x332y03E	x432y03E	x532y03E
		x022y03E	x122y03E	x222y03E	x322y03E	x422y03E	x522y03E
	2	x052y03E	x152y03E	x252y03E	x352y03E	x452y03E	x552y03E
		x042y03E	x142y03E	x242y03E	x342y03E	x442y03E	x542y03E
	3	x072y03E	x172y03E	x272y03E	x372y03E	x472y03E	x572y03E
		x062y03E	x162y03E	x262y03E	x362y03E	x462y03E	x562y03E

x (DKU type): 2.5inch SBB: 0, 3.5inch SBB: 1, NativeFlash: 4

y (Module): Module0: 0, Module1: 1

SAS ADDRESS Mapping <HighPerformance Mode>

DKA CL	HDU BOX	DKU-y0 (y:0 or 1)	DKU-y1 (y:0 or 1)	DKU-y2 (y:0 or 1)	DKU-y3 (y:0 or 1)	DKU-y4 (y:0 or 1)	DKU-y5 (y:0 or 1)
		SSW (1st)	SSW (2nd)	SSW (3rd)	SSW (4th)	SSW (5th)	SSW (6th)
CL1	0	x001y03E	x101y03E	x201y03E	x301y03E	x401y03E	x501y03E
	1	x021y03E	x121y03E	x221y03E	x321y03E	x421y03E	x521y03E
	2	x041y03E	x141y03E	x241y03E	x341y03E	x441y03E	x541y03E
	3	x061y03E	x161y03E	x261y03E	x361y03E	x461y03E	x561y03E
	4	x011y03E	x111y03E	x211y03E	x311y03E	x411y03E	x511y03E
	5	x031y03E	x131y03E	x231y03E	x331y03E	x431y03E	x531y03E
	6	x051y03E	x151y03E	x251y03E	x351y03E	x451y03E	x541y03E
	7	x071y03E	x171y03E	x271y03E	x371y03E	x471y03E	x571y03E
CL2	0	x012y03E	x112y03E	x212y03E	x312y03E	x412y03E	x512y03E
	1	x032y03E	x132y03E	x232y03E	x332y03E	x432y03E	x532y03E
	2	x052y03E	x152y03E	x252y03E	x352y03E	x452y03E	x552y03E
	3	x072y03E	x172y03E	x272y03E	x372y03E	x472y03E	x572y03E
	4	x002y03E	x102y03E	x202y03E	x302y03E	x402y03E	x502y03E
	5	x022y03E	x122y03E	x222y03E	x322y03E	x422y03E	x522y03E
	6	x042y03E	x142y03E	x242y03E	x342y03E	x442y03E	x542y03E
	7	x062y03E	x162y03E	x262y03E	x362y03E	x462y03E	x562y03E

x (DKU type): 2.5inch SBB: 0, 3.5inch SBB: 1, NativeFlash: 4

y (Module): Module0: 0, Module1: 1

6.3 CUDG error code list

6.3.1 CUDG3 error code list

LSI classification	Test ID	Error Code	Error Contents
—	0001	0000	INLINE CUDG parameter error.
	0006	0000	Config acquisition failure in INLINE CUDG.
	0007	0000	Config CMG number is unjustified of Cache PK.
	000B	0000	INLINE CUDG parameter error.
	000D	0000	INLINE CUDG Loop count error.
MSW	0101		Register WT/RD Test.
		0040	CHK1 Error occurred.
		0002	Register Compare Error occurred.
		0008	Register error detection.
		1000	Error occurred in Register Read.
		2000	Error occurred in Register Read.
	0102		Memory WT/RD Test. (A)
		0040	CHK1 Error occurred.
		0002	Data Compare Error occurred.
		4000	Error occurred in Memory Write.
		8000	Error occurred in Memory Read.
	0103		Memory WT/RD Test. (B)
		0040	CHK1 Error occurred.
		0002	Data Compare Error occurred.
		4000	Error occurred in Memory Write.
		8000	Error occurred in Memory Read.
	0104		General Memory Test. (A) (Write Activation Part)
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	0105		General Memory Test. (A) (Polling Part)
		0040	CHK1 Error occurred.
		0004	Polling Time Out.
		2000	Error occurred in Register Read.
	0106		General Memory Test. (A) (Status Confirmation Part after Write)
		0040	CHK1 Error occurred.
		0001	Uncorrectable or Correctable Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	0107		General Memory Test. (A) (Read Activation Part)
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.

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LSI classification	Test ID	Error Code	Error Contents
MSW	0108		General Memory Test. (A) (Status Confirmation Part after READ)
		0040	CHK1 Error occurred.
		0001	Uncorrectable or Correctable Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	0109		General Memory Test. (B) (Write Activation Part)
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	010A		General Memory Test. (B) (Polling Part)
		0040	CHK1 Error occurred.
		0004	Polling Time Out.
		2000	Error occurred in Register Read.
	010B		General Memory Test. (B) (Status Confirmation Part after Write)
		0040	CHK1 Error occurred.
		0001	Uncorrectable or Correctable Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	010C		General Memory Test. (B) (Read Activation Part)
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	010D		General Memory Test. (B) (Status Confirmation Part after READ)
		0040	CHK1 Error occurred.
		0001	Uncorrectable or Correctable Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	010E		ECC Correctable Test.
		0040	CHK1 Error occurred.
		0001	Register Compare Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
		4000	Error occurred in Memory Write.
		8000	Error occurred in Memory Read.
	010F		ECC Uncorrectable Test.
		0040	CHK1 Error occurred.
		0001	Register Compare Error occurred.

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LSI classification	Test ID	Error Code	Error Contents
MSW	010F	1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
		4000	Error occurred in Memory Write.
		8000	Error occurred in Memory Read.
	0114		RAM WT/RD Test.
		0040	CHK1 Error occurred.
		0002	Data Compare Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	0115		MSW LinkUP test.
		0040	CHK1 Error occurred.
		0100	Error occurred in MSW linkup.
	0116		Register WT/RD test2.
		0040	CHK1 Error occurred.
		0002	Register Compare Error occurred.
		0008	Register error detection.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	011A		PD Check.
		0040	CHK1 Error occurred.
		0001	DIMM type Compare error occurred.
		0100	CMG initialization STS error occurred.
	011B		CM DIMM information Read.
		0040	CHK1 Error occurred.
		2000	Error occurred in Register Read.
	0123		ATCMP test.
		0040	CHK1 Error occurred.
		0100	Data Compare Error occurred.
		0200	Error occurred in ATCMP.
		2000	Error occurred in Register Read.
		4000	Error occurred in Memory Write.
		8000	Error occurred in Memory Read.
	0124		ATADD test.
		0040	CHK1 Error occurred.
		0100	Data Compare Error occurred.
		0200	Error occurred in ATADD.
		2000	Error occurred in Register Read.
		4000	Error occurred in Memory Write.
		8000	Error occurred in Memory Read.

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LSI classification	Test ID	Error Code	Error Contents
MSW	0126		MSW Register Read Test.
		0040	CHK1 Error occurred.
		2000	Error occurred in Register Read.
	0128		MSW Reset.
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	012A		MSW LSI version Read.
		0040	CHK1 Error occurred.
		2000	Error occurred in Register Read.
	012C		MSW MPSTS information Read.
		0040	CHK1 Error occurred.
		2000	Error occurred in Register Read.
	012D		X Path Linkup Check.
		0040	CHK1 Error occurred.
		2000	Error occurred in Register Read.
		0001	X Path Link Down Error occurred.
	0130		MP serial test.
		0040	CHK1 Error occurred.
		0008	Register Compare Error occurred.
		2000	Error occurred in Register Read.
	0170		X Path Connection Check.
		0040	CHK1 Error occurred.
		2000	Error occurred in Register Read.
		0100	X Path Connection Error occurred.
	0190		Data shift pattern WT/RD test.
		0040	CHK1 Error occurred.
		0002	Data Compare Error occurred.
		4000	Error occurred in Memory Write.
		8000	Error occurred in Memory Read.
	0191		ECC write through WT/RD test.
		0040	CHK1 Error occurred.
		0002	Data Compare Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
		4000	Error occurred in Memory Write.
		8000	Error occurred in Memory Read.

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LSI classification	Test ID	Error Code	Error Contents
MSW	0192		Address pattern WT/RD test.
		0040	CHK1 Error occurred.
		0002	Data Compare Error occurred.
		4000	Error occurred in Memory Write.
		8000	Error occurred in Memory Read.
	01A0		CRAM Data shift pattern test.
		0040	CHK1 Error occurred.
		0002	Data Compare Error occurred.
		4000	Error occurred in Memory Write.
		8000	Error occurred in Memory Read.
	01A2		CRAM Address shift pattern test.
		0040	CHK1 Error occurred.
		0002	Data Compare Error occurred.
		4000	Error occurred in Memory Write.
		8000	Error occurred in Memory Read.
	01A3		CRAM Conversion test.
		0040	CHK1 Error occurred.
		2000	Error occurred in Register Read.
		8000	Error occurred in Memory Read.
		0001	CRAM MODE Compare Error occurred.
		0008	Register Compare Error occurred.
	01A4		CRAM All memory test. (A) (Write Activation Part)
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	01A5		CRAM All memory test. (A) (Polling Part)
		0040	CHK1 Error occurred.
		0004	Polling Time Out.
		2000	Error occurred in Register Read.
	01A6		CRAM All memory test. (A) (Status Confirmation Part after Write)
		0040	CHK1 Error occurred.
		0001	Uncorrectable or Correctable Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	01A7		CRAM All memory test (A) (Read Activation Part)
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Read.
		2000	Error occurred in Register Read.

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LSI classification	Test ID	Error Code	Error Contents
MSW	01A8		CRAM All memory test. (A) (Status Confirmation Part after READ)
		0040	CHK1 Error occurred.
		0001	Uncorrectable or Correctable Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	01A9		CRAM All memory test. (B) (Write Activation Part)
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	01AA		CRAM All memory test. (B) (Polling Part)
		0040	CHK1 Error occurred.
		0004	Polling Time Out.
		2000	Error occurred in Register Read.
	01AB		CRAM All memory test. (B) (Status Confirmation Part after Write)
		0040	CHK1 Error occurred.
		0001	Uncorrectable or Correctable Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	01AC		CRAM All memory test. (B) (Read Activation Part)
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	01AD		CRAM All memory test. (B) (Status Confirmation Part after READ)
		0040	CHK1 Error occurred.
		0001	Uncorrectable or Correctable Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	01AE		CRAM conversion setting.
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	01AF		CRAM conversion setting check.
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
		0004	Polling Time Out.
		0008	Register error detection.

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LSI classification	Test ID	Error Code	Error Contents
MSW	01B0		Statistical information test.
		0040	CHK1 Error occurred.
		0001	Statistical information counter error occurred.
		0008	Register error detection.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	01F0		SH diagnosis start.
		0040	CHK1 Error occurred.
		1000	Error occurred in Register Write.
	01F1		Battery Error Check.
		0040	CHK1 Error occurred.
		0001	Battery Error occurred.
		2000	Error occurred in Register Read.
	01F2		CFM mounting check.
		0040	CHK1 Error occurred.
		0001	CFM size type error occurred.
		2000	Error occurred in Register Read.
	01F3		SH diagnosis completion judgment.
		0040	CHK1 Error occurred.
		0004	SH diagnosis TOV error occurred.
		2000	Error occurred in Register Read.
	01F4		SH diagnosis status check.
		0040	CHK1 Error occurred.
		0001	STS error occurred.
		1000	Error occurred in Register Write.
		2000	Error occurred in Register Read.
	01F6		BKM type check.
		0040	CHK1 Error occurred.
		0001	BKM type Compare error occurred.
		0100	BKM configuration information acquisition error occurred.
		2000	Error occurred in Register Read.
	01F7		PCIe loopback test.
		0040	CHK1 Error occurred.
		0100	Error occurred in Loopback.
		2000	Error occurred in Register Read.
	01FF		SH firmware REV Read.
		0040	CHK1 Error occurred.
		2000	Error occurred in Register Read.

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LSI classification	Test ID	Error Code	Error Contents
SAS	0F60		SAS Diagnosis Start.
		010C	Internal processing contradiction(1).
		010F	Parameter error(1).
		1504	CHK4 check error detected(1).
		1704	CHK4 check error detected(2).
		1804	CHK4 check error detected(3).
		1807	LRP_MailBox error(1).
		1809	ADP mode get error.
		180C	Internal processing contradiction(2).
		1901	SAS Firmware CRC check error.
		1A04	CHK4 check error detected(4).
		1A07	LRP_MailBox error(2).
		1A0C	Internal processing contradiction(3).
		2D01	Register save error.
		2E01	Register write error.
		2F01	Register read error.
		2F0D	Comparison error.
		3001	Register recovery error.
		3102	Burst Transfer error(1).
		3104	CHK4 check error detected(5).
		3107	LRP_MailBox error(3).
		310C	Internal processing contradiction(4).
		3202	LRP support OFF Burst Transfer error.
		3204	LRP support OFF CHK4 check error detected.
		3207	LRP support OFF LRP_MailBox error.
		3302	LRP support ON Burst Transfer error.
		3304	LRP support ON CHK4 check error detected.
		3307	LRP support ON LRP_MailBox error.
		3402	SAS port initialize Burst Transfer error.
		3404	SAS port initialize CHK4 check error detected.
		3407	SAS port initialize LRP_MailBox error.
		340F	SAS port initialize parameter error.
		3601	MPI Initialize register access error.
		3604	CHK4 check error detected(6).
		3609	MPI Initialize register expected value error.
		3701	MPI Main Configuration register access error.
		3709	MPI Main Configuration expected value error.
		3801	MPI General Status register access error.
		3809	MPI General Status expected value error.

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LSI classification	Test ID	Error Code	Error Contents
SAS	0F60		SAS Diagnosis Start.
		3901	MPI IQ Configuration register access error.
		3909	MPI IQ Configuration expected value error.
		3A01	MPI OQ Configuration register access error.
		3A09	MPI OQ Configuration expected value error.
		3B01	Register access error(1).
		3B04	CHK4 check error detected(7).
		3C01	Inbound Doorbell Set Register access error.
		3C04	Inbound Doorbell Set Register polling CHK4 check error detected.
		3C0E	Inbound Doorbell Set Register polling timeout error.
		3C0F	Inbound Doorbell Set Register polling parameter error.
		3D01	MPI State register access error.
		3D04	CHK4 check error detected(8).
		3D0E	MPI State register polling timeout error.
		3D0F	MPI State register polling parameter error.
		3E0C	SAS Protocol initial setting table make error.
		3F0C	SAS port initial setting table make error.
		4004	CHK4 check error detected(9).
		4007	LRP_MailBox error(4).
		410D	Verification check error.
		4301	Register access error(2).
		4302	Burst Transfer error(2).
		4304	CHK4 check error detected(DIWA).
		4309	Register expected value error(1).
		430E	Polling timeout error(1).
		430F	Parameter error(2).
		4401	Register access error(3).
		4402	Burst Transfer error(3).
		4404	CHK4 check error detected(SPROM write).
		4409	Register expected value error(2).
		440E	Polling timeout error(2).
		440F	Parameter error(3).
		4501	Register access error(4).
		4502	Burst Transfer error(4).
		4504	CHK4 check error detected(SPROM read).
		4509	Register expected value error(3).
		450E	Polling timeout error(3).
		450F	Parameter error(4).

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LSI classification	Test ID	Error Code	Error Contents
SAS	0F60		SAS Diagnosis Start.
		4601	MPI base address get error.
		4701	Register read error.
		5001	Scratchpad 1 read error.
		5009	Not HDA Mode SEEPROM.
		5101	STEP[01]: Boot ROM HAD Protocol Response read error.
		5109	STEP[01]: Not HAD mode.
		5201	STEP[02]: ILA image write error.
		5202	STEP[02]: ILA image burst transfer error.
		5204	STEP[02]: CHK4 check error detected.
		5209	STEP[02]: ILA image information get error.
		520F	STEP[02]: Parameter error.
		5301	STEP[03]: DMA status read error.
		5304	STEP[03]: CHK4 check error detected.
		5309	STEP[03]: DMA status is not success.
		530E	STEP[03]: Polling timeout error.
		530F	STEP[03]: Parameter error.
		5401	STEP[04]: HDAC parameter setting error.
		5404	STEP[04]: CHK4 check error detected.
		5409	STEP[04]: ILA image information get error.
		5501	STEP[05]: RSP_CODE read error.
		5504	STEP[05]: CHK4 check error detected.
		5509	STEP[05]: not HDAR_EXEC
		550E	STEP[05]: Polling timeout error.
		550F	STEP[05]: Parameter error.
		5601	STEP[06]: Host Scratchpad access error.
		5602	STEP[06]: RAAE image burst transfer error.
		5604	STEP[06]: CHK4 check error detected.
		5609	STEP[06]: RAAE image information get error.
		560E	STEP[06]: Polling timeout error.
		560F	STEP[06]: Parameter error.
		5701	STEP[07]: Host Scratchpad access error.
		5702	STEP[07]: IOP image burst transfer error.
		5704	STEP[07]: CHK4 check error detected.
		5709	STEP[07]: IOP image information get error.
		570E	STEP[07]: Polling timeout error.
		570F	STEP[07]: Parameter error.

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LSI classification	Test ID	Error Code	Error Contents
SAS	0F60		SAS Diagnosis Start.
		5801	STEP[08]: Scratchpad 1 read error.
		5804	STEP[08]: CHK4 check error detected.
		580E	STEP[08]: Polling timeout error.
		580F	STEP[08]: Parameter error.
		5904	CHK4 check error detected(10).
		5A01	POST code read error.
		5B01	Encryption Error Code is error.
		5C09	Not code mode.
		5D01	SPC Firmware status read error.
		5D04	CHK4 check error detected(11).
		5D0E	Polling timeout error(4).
		5D0F	Parameter error(5).
		7301	IQ index read error.
		7309	OQ contents error.
		7401	OQ index read error.
		7409	Status error.
		7501	IQ P index update register access error.
		7502	IQ P index update burst transfer error.
		7504	IQ P index update CHK4 check error detected.
		7601	IQ C index update waiting register access error.
		7604	IQ C index update waiting CHK4 check error detected.
		760E	IQ C index update waiting polling timeout error.
		760F	IQ C index update waiting parameter error.
		7701	OQ P index update waiting register access error.
		770E	OQ P index update waiting polling timeout error.
		7801	OQ CI update error.
		7804	CHK4 check error detected(12).
	0F61		ECHO command test.
		010C	Internal processing contradiction.
		1704	CHK4 check error detected(1).
		1B01	IQ index read error.
		1B09	OQ contents error.
		1C01	OQ index read error.
		1C09	Response PAYLOAD contents error.
		1D01	IQ P index update register access error.
		1D02	IQ P index update burst transfer error.
		1D04	IQ P index update CHK4 check error detected.

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LSI classification	Test ID	Error Code	Error Contents
SAS	0F61		ECHO command test.
		1E01	IQ C index update waiting register access error.
		1E04	IQ C index update waiting CHK4 check error detected.
		1E0E	IQ C index update waiting polling timeout error.
		1E0F	IQ C index update waiting parameter error.
		1F01	OQ P index update waiting register access error.
		1F0E	OQ P index update waiting polling timeout error.
		2001	OQ CI update error.
		2004	CHK4 check error detected(2).
	0F62		In Loopback test2.
		010C	Internal processing contradiction.
		1704	CHK4 check error detected(1).
		2101	IQ index read error.
		2201	OQ index read error.
		2301	IQ P index update register access error.
		2302	IQ P index update burst transfer error.
		2304	IQ P index update CHK4 check error detected.
		2401	IQ C index update waiting register access error.
		2404	IQ C index update waiting CHK4 check error detected.
		240E	IQ C index update waiting polling timeout error.
		240F	IQ C index update waiting parameter error.
		2501	OQ P index update waiting register access error.
		250E	OQ P index update waiting polling timeout error.
		2601	OQ CI update error.
		2604	CHK4 check error detected(2).
		2609	OQ contents error.
		2709	Response status error.
		2809	Response CMD_TYPE error.
		2909	Response CMD_DESC error.
		2A02	Source data burst transfer error.
		2B02	Destination clear burst transfer error.
		2B04	CHK4 check error detected(3).
		2B0D	Data comparison error.
	0F63		In Loopback test for T10-DIF.
		010C	Internal processing contradiction.
		1704	CHK4 check error detected(1).
		2101	IQ index read error.
		2201	OQ index read error.

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LSI classification	Test ID	Error Code	Error Contents
SAS	0F63		In Loopback test for T10-DIF.
		2301	IQ P index update register access error.
		2302	IQ P index update burst transfer error.
		2304	IQ P index update CHK4 check error detected.
		2401	IQ C index update waiting register access error.
		2404	IQ C index update waiting CHK4 check error detected.
		240E	IQ C index update waiting polling timeout error.
		240F	IQ C index update waiting parameter error.
		2501	OQ P index update waiting register access error.
		250E	OQ P index update waiting polling timeout error.
		2601	OQ CI update error.
		2604	CHK4 check error detected(2).
		2609	OQ contents error.
		2709	Response status error.
		2809	Response CMD_TYPE error.
		2909	Response CMD_DESC error.
		2C02	Source data burst transfer error.
		2C04	CHK4 check error detected(3).
		2C0D	Data comparison error.
	0F64		In Loopback test.
		010C	Internal processing contradiction.
		1704	CHK4 check error detected(1).
		2101	IQ index read error.
		2201	OQ index read error.
		2301	IQ P index update register access error.
		2302	IQ P index update burst transfer error.
		2304	IQ P index update CHK4 check error detected.
		2401	IQ C index update waiting register access error.
		2404	IQ C index update waiting CHK4 check error detected.
		240E	IQ C index update waiting polling timeout error.
		240F	IQ C index update waiting parameter error.
		2501	OQ P index update waiting register access error.
		250E	OQ P index update waiting polling timeout error.
		2601	OQ CI update error.
		2604	CHK4 check error detected(2).
		2609	OQ contents error.
		2709	Response status error.
		2809	Response CMD_DESC error.
		280D	Data comparison error.

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LSI classification	Test ID	Error Code	Error Contents
SAS	0F64		In Loopback test.
		2902	Source data burst transfer error.
		2904	CHK4 check error detected(3).
		2909	Response CMD_DESC error.
	0F65		Drive format function test.
		010C	Internal processing contradiction.
		1704	CHK4 check error detected(1).
		2101	IQ index read error.
		2201	OQ index read error.
		2301	IQ P index update register access error.
		2302	IQ P index update burst transfer error.
		2304	IQ P index update CHK4 check error detected.
		2401	IQ C index update waiting register access error.
		2404	IQ C index update waiting CHK4 check error detected.
		240E	IQ C index update waiting polling timeout error.
		240F	IQ C index update waiting parameter error.
		2501	OQ P index update waiting register access error.
		250E	OQ P index update waiting polling timeout error.
		2601	OQ CI update error.
		2604	CHK4 check error detected(2).
		2609	OQ contents error.
		2709	Response status error.
		2809	Response CMD_TYPE error.
		2909	Response CMD_DESC error.
		3501	Scratchpad 1 read error.
		3509	Scratchpad 1 is not ready.
		610D	Format area comparison error.
		6204	CHK4 check error detected(3).
		6301	Sub block length setting register write error.
		6401	Sub block length setting register read error.
		6509	Sub block length setting register value error.
		6601	Data setting register write error.
		6701	Data setting register read error.
		6809	Data setting register value error.
		6901	Data setting register format area #0 write error.
		6A01	The completion register of CRC operation is read error.
		6A04	The completion waiting of CRC operation is CHK4 check error detected.
		6A0E	The completion waiting of CRC operation is polling timeout error.

DIAG06-430

LSI classification	Test ID	Error Code	Error Contents
SAS	0F65		Drive format function test.
		6B01	Data setting Register save error.
		6C01	Data setting Register recovery error.
	0F66		SAS Diagnosis End.
		010C	Internal processing contradiction(1).
		1604	CHK4 check error detected(1).
		1607	LRP_MailBox error(1).
		160C	Internal processing contradiction(2).
		1704	CHK4 check error detected(2).
		4204	CHK4 check error detected(3).
		4207	LRP_MailBox error(2).

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LSI classification	Test ID	Error Code	Error Contents
Hilda	1760		FC16G Diagnosis Start.
		010C	Internal processing contradiction(1).
		010F	Parameter error.
		020C	Internal processing contradiction(2).
		1404	CHK4 check error detected(1).
		1504	CHK4 check error detected(2).
		2602	Burst Transfer error.
		2604	CHK4 check error detected(3).
		2607	LRP_MailBox error(1).
		2609	ADP mode get error.
		260C	Internal processing contradiction(3).
		2C04	CHK4 check error detected(4).
		2C07	LRP_MailBox error(2).
	1761		register test.
		010C	Internal processing contradiction.
		1504	CHK4 check error detected.
		4001	Address register dummy read error(bottom).
		4101	Address register '0' write error(top).
		4201	Address register dummy read error(top).
		4301	Data register write error.
		4401	Data register read error.
		450D	Comparison error.
		4601	Address register '0' write error(bottom).
	1762		Soft reset check.
		010C	Internal processing contradiction.
		010F	Parameter error(1).
		1504	CHK4 check error detected(1).
		1C01	Dummy read error(1).
		1C04	CHK4 check error detected(2).
		1D01	Soft Reset register write error.
		1E01	GPIO Data Register Write error.
		1F01	GPIO Enable Register Write error.
		2001	Dummy read error(2).
		2101	Register write error.
		2201	Register access error.
		2204	CHK4 check error detected(3).
		220E	Polling timeout error.
		220F	Parameter error(2).

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LSI classification	Test ID	Error Code	Error Contents
Hilda	1762		Soft reset check.
		2702	Burst Transfer error.
		2704	CHK4 check error detected(4).
		2707	LRP_MailBox error.
		2D01	Registers save error.
	1763		ROM Firmware Boot check.
		010C	Internal processing contradiction.
		010F	Parameter error(1).
		1108	PM Firmware SUM check error.
		1504	CHK4 check error detected(1).
		2802	Burst Transfer error.
		2804	CHK4 check error detected(2).
		2807	LRP_MailBox error.
		280F	Parameter error(2).
		2901	Register access error(1).
		2904	CHK4 check error detected(3).
		290E	Polling timeout error.
		290F	Parameter error(3).
		2F01	Register access error(2).
		300C	Table make error.
	1764		Flash exchange.
		010C	Internal processing contradiction(1).
		010F	Parameter error(1).
		1504	CHK4 check error detected(1).
		1604	CHK4 check error detected(2).
		2504	CHK4 check error detected(3).
		2507	LRP_MailBox error.
		250C	Internal processing contradiction(2).
		2A01	Register access error(1).
		2A04	CHK4 check error detected(4).
		2A0E	Polling timeout error(1).
		2A0F	Parameter error(2).
		4501	Register access error(2).
		4701	Dummy read error(1).
		4901	Data register '0' clear error(1).
		4A01	Address register write error(1).
		4B01	Address register read error.
		4C01	Data register read error.
		4C0F	Parameter error(3).

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LSI classification	Test ID	Error Code	Error Contents
Hilda	1764		Flash exchange.
		4D01	Data register '0' clear error(2).
		4E01	Address register write error(2).
		4F01	Register read error.
		4F04	CHK4 check error detected(5).
		5001	Flash Access Error(1).
		5101	Address value error.
		5201	Data register write error.
		5301	Address register write error(3).
		5404	CHK4 check error detected(6).
		540E	Polling timeout error(2).
		540F	Parameter error(4).
		5501	Flash Access Error(2).
		5609	Semaphore Lock Failure.
		5709	Status register Write NG.
		5809	Erase expected value error(1).
		5B09	version disagreement.
		5E01	version value read error.
		5E02	Burst Transfer error.
		5F01	Flash Access Error(3).
		6001	Flash Access Error(4).
		6004	CHK4 check error detected(polling).
		600E	Polling timeout error(3).
		6109	Erase expected value error(2).
		6201	Flash Access Error(5).
		6204	CHK4 check error detected(7).
		6208	Check SUM error.
		620D	Contents comparison error.
		6401	Incoming Mailbox Write error.
		6501	Dummy read error(2).
		6601	Host Command and Control register write error.
		6609	Read Flag Status Register is value error.
		6701	Dummy read error(3).
		6801	Register access error(3).
		6804	CHK4 check error detected(8).
		680E	Polling timeout error(4).
		680F	Parameter error(5).
		6901	RISC to Host Status register read error.
		6909	RISC to Host Interrupt Request is OFF.

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LSI classification	Test ID	Error Code	Error Contents
Hilda	1764		Flash exchange.
		6A01	Clear RISC to PCI Interrupt write error(1).
		6A09	RISC Paused.
		6B01	Dummy read error(4).
		6B09	Asynchronous event of an error notification.
		6C01	Outgoing Mailbox read error.
		6C09	Completion check error.
		6D01	Clear RISC to PCI Interrupt write error(2).
		6E01	Dummy read error(5).
		7607	Command completion code error(1).
		7707	Command completion code error(2).
		7807	Command completion code error(3).
	1765		ROM Firmware command test.
		010C	Internal processing contradiction.
		010F	Parameter error(1).
		1504	CHK4 check error detected(1).
		6401	Incoming Mailbox Write error.
		6501	Dummy read error(1).
		6601	Host Command and Control register write error.
		6701	Dummy read error(2).
		6801	Register access error.
		6804	CHK4 check error detected(2).
		680E	Polling timeout error.
		680F	Parameter error(2).
		6901	RISC to Host Status register read error.
		6909	RISC to Host Interrupt Request is OFF.
		6A01	Clear RISC to PCI Interrupt write error(1).
		6A09	RISC Paused.
		6B01	Dummy read error(3).
		6B09	Asynchronous event of an error notification.
		6C01	Outgoing Mailbox read error.
		6C09	Completion check error.
		6D01	Clear RISC to PCI Interrupt write error(2).
		6E01	Dummy read error(4).
		7007	Command completion code error(1).
		7307	Command completion code error(2).
		730D	Data comparison error.

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LSI classification	Test ID	Error Code	Error Contents
Hilda	1766		Memory read/write test.
		010C	Internal processing contradiction.
		010F	Parameter error(1).
		1504	CHK4 check error detected(1).
		2A01	Register access error(1).
		2A04	CHK4 check error detected(2).
		2A0E	Polling timeout error(1).
		2A0F	Parameter error(2).
		3101	Destination DXBF to LM transfer error.
		3102	Source DXBF clear burst transfer error.
		3104	CHK4 check error detected(before memory test).
		3201	Flash Access Error(1).
		3202	Destination DXBF clear burst transfer error.
		3204	CHK4 check error detected(after memory test).
		3302	Data to Source DXBF burst transfer error.
		330D	Data comparison error.
		4801	Flash Access Error(2).
		4808	Check SUM error.
		4C0F	Parameter error(3).
		4D01	Data register '0' clear error.
		4E01	Address register write error.
		4F01	Register read error.
		4F04	CHK4 check error detected(3).
		5001	Flash Access Error(3).
		6301	Flash read error.
		6401	Incoming Mailbox Write error.
		6501	Dummy read error(1).
		6601	Host Command and Control register write error.
		6701	Dummy read error(2).
		6801	Register access error(2).
		6804	CHK4 check error detected(4).
		680E	Polling timeout error(2).
		680F	Parameter error(4).
		6901	RISC to Host Status register read error.
		6909	RISC to Host Interrupt Request is OFF.
		6A01	Clear RISC to PCI Interrupt write error(1).
		6A09	RISC Paused.
		6B01	Dummy read error(3).
		6B09	Asynchronous event of an error notification.

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LSI classification	Test ID	Error Code	Error Contents
Hilda	1766		Memory read/write test.
		6C01	Outgoing Mailbox read error.
		6C09	Completion check error.
		6D01	Clear RISC to PCI Interrupt write error(2).
		6E01	Dummy read error(4).
		7409	Initial value error.
		7707	Command completion code error(1).
		7807	Command completion code error(2).
	1767		FC Firmware Boot test.
		010C	Internal processing contradiction(1).
		010F	Parameter error(1).
		1504	CHK4 check error detected(1).
		3401	FC Firmware RISC_RAM_1 address get error.
		3402	FC Firmware_1 of LM to DXBF burst transfer error.
		3404	CHK4 check error detected(2).
		3408	PM Firmware SUM check error.
		3501	DXBF FC Firmware_1 read error.
		3502	FC Firmware_2 of LM to DXBF burst transfer error.
		350D	FC Firmware_1 comparison error.
		3601	DXBF FC Firmware_2 read error.
		360D	FC Firmware_2 comparison error.
		3704	CHK4 check error detected(3).
		6401	Incoming Mailbox Write error.
		6501	Dummy read error(1).
		6601	Host Command and Control register write error.
		6701	Dummy read error(2).
		6801	Register access error.
		6804	CHK4 check error detected(4).
		680E	Polling timeout error.
		680F	Parameter error(2).
		6901	RISC to Host Status register read error.
		6909	RISC to Host Interrupt Request is OFF.
		6A01	Clear RISC to PCI Interrupt write error(1).
		6A09	RISC Paused.
		6B01	Dummy read error(3).
		6B09	Asynchronous event of an error notification.
		6C01	Outgoing Mailbox read error.
		6C09	Completion check error.
		6D01	Clear RISC to PCI Interrupt write error(2).
		6E01	Dummy read error(4).

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LSI classification	Test ID	Error Code	Error Contents
Hilda	1767		FC Firmware Boot test.
		7207	Command completion code error(1).
		720C	Internal processing contradiction(2).
		7407	Command completion code error(2).
		7707	Command completion code error(3).
		7807	Command completion code error(4).
	1768		FC Firmware command test.
		010C	Internal processing contradiction.
		010F	Parameter error(1).
		1504	CHK4 check error detected(1).
		6401	Incoming Mailbox Write error.
		6501	Dummy read error(1).
		6601	Host Command and Control register write error.
		6701	Dummy read error(2).
		6801	Register access error.
		6804	CHK4 check error detected(2).
		680E	Polling timeout error.
		680F	Parameter error(2).
		6901	RISC to Host Status register read error.
		6909	RISC to Host Interrupt Request is OFF.
		6A01	Clear RISC to PCI Interrupt write error(1).
		6A09	RISC Paused.
		6B01	Dummy read error(3).
		6B09	Asynchronous event of an error notification.
		6C01	Outgoing Mailbox read error.
		6C09	Completion check error.
		6D01	Clear RISC to PCI Interrupt write error(2).
		6E01	Dummy read error(4).
		7007	Command completion code error(1).
		7307	Command completion code error(2).
		730D	Data comparison error.
	1769		FC Firmware version get test.
		010C	Internal processing contradiction.
		010F	Parameter error(1).
		1504	CHK4 check error detected(1).
		3702	Table to DXBF Transfer error.
		3802	Parameter block to DXBF Transfer error.
		3809	Version disagreement.

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LSI classification	Test ID	Error Code	Error Contents
Hilda	1769		FC Firmware version get test.
		6401	Incoming Mailbox Write error.
		6501	Dummy read error(1).
		6601	Host Command and Control register write error.
		6701	Dummy read error(2).
		6801	Register access error.
		6804	CHK4 check error detected(2).
		680E	Polling timeout error.
		680F	Parameter error(2).
		6901	RISC to Host Status register read error.
		6909	RISC to Host Interrupt Request is OFF.
		6A01	Clear RISC to PCI Interrupt write error(1).
		6A09	RISC Paused.
		6B01	Dummy read error(3).
		6B09	Asynchronous event of an error notification.
		6C01	Outgoing Mailbox read error.
		6C09	Completion check error.
		6D01	Clear RISC to PCI Interrupt write error(2).
		6E01	Dummy read error(4).
		7507	Command completion code error(1).
		7509	Version value error.
		7A07	Command completion code error(2).
	176A		FC Firmware configuration setting.
		010C	Internal processing contradiction.
		010F	Parameter error(1).
		1504	CHK4 check error detected(1).
		3902	Command list to DXBF Transfer error.
		3A02	IFCB to DXBF Transfer error.
		6401	Incoming Mailbox Write error.
		6501	Dummy read error(1).
		6601	Host Command and Control register write error.
		6701	Dummy read error(2).
		6801	Register access error.
		6804	CHK4 check error detected(2).
		680E	Polling timeout error.
		680F	Parameter error(2).
		6901	RISC to Host Status register read error.
		6909	RISC to Host Interrupt Request is OFF.

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LSI classification	Test ID	Error Code	Error Contents
Hilda	176A		FC Firmware configuration setting.
		6A01	Clear RISC to PCI Interrupt write error(1).
		6A09	RISC Paused.
		6B01	Dummy read error(3).
		6B09	Asynchronous event of an error notification.
		6C01	Outgoing Mailbox read error.
		6C09	Completion check error.
		6D01	Clear RISC to PCI Interrupt write error(2).
		6E01	Dummy read error(4).
		6E07	Command completion code error(1).
		7907	Command completion code error(2).
		7B07	Command completion code error(3).
		8007	Command completion code error(4).
		8107	Command completion code error(5).
		8207	Command completion code error(6).
		8209	Firmware state is not ready.
	176C		IOCB test.
		010C	Internal processing contradiction.
		010F	Parameter error(1).
		1504	CHK4 check error detected(1).
		7101	VRQQ In_Pointer read error(1).
		8302	Burst Transfer error(1).
		8304	CHK4 check error detected(2).
		8307	LRP_MailBox error(1).
		8402	Burst Transfer error(2).
		8404	CHK4 check error detected(3).
		8407	LRP_MailBox error(2).
		8601	VRQQ In_Pointer read error(2).
		8602	IOCB request parameter burst transfer error.
		8701	VRQQ In_Pointer update write error.
		8707	Command completion code error(1).
		870D	Response data comparison error.
		8B01	Dummy read error.
		8B09	Status error.
		8C01	VATQ Out_Pointer read error.
		8C09	IOCB_HANDLE comparison error.
		8D04	CHK4 check error detected(4).
		8D0E	Polling timeout error.
		8D0F	Parameter error(2).

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LSI classification	Test ID	Error Code	Error Contents
Hilda	176C		IOCB test.
		8E01	VATQ Out_Pointer update write error.
		8E07	IOCB not response.
		8E09	Response HANDLE value double.
		8F01	VRQQ In_Pointer read error(3).
		8F07	Command completion code error(2).
		8F09	Unexpected Asynchronous event.
	176D		DMA function check, Indirectly register test.
		010C	Internal processing contradiction.
		010F	Parameter error(1).
		1504	CHK4 check error detected(1).
		1E01	GPIO Data Register Write error.
		1F01	GPIO Enable Register Write error.
		2001	Dummy read error(1).
		5601	Destination DXBF to LM transfer error.
		5604	CHK4 check error detected(after DMA transfer).
		6102	Source DXBF clear burst transfer error.
		6104	CHK4 check error detected(1).
		6202	Destination DXBF clear burst transfer error.
		6302	Data to Source DXBF burst transfer error.
		6304	CHK4 check error detected(2).
		6C0D	Data comparison error.
		7201	VRQQ In_Pointer read error(1).
		7401	VRQQ In_Pointer read error(2).
		8502	Burst Transfer error(1).
		8504	CHK4 check error detected(3).
		8507	LRP_MailBox error(1).
		8601	VRQQ In_Pointer read error(3).
		8602	IOCB request parameter burst transfer error.
		8604	CHK4 check error detected(4).
		8607	Command completion code error(1).
		8609	Register value error(1).
		8701	VRQQ In_Pointer update write error.
		8704	CHK4 check error detected(5).
		8709	Register value error(2).
		8802	Burst Transfer error(2).
		8804	CHK4 check error detected(6).
		8807	LRP_MailBox error(2).

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LSI classification	Test ID	Error Code	Error Contents
Hilda	176D		DMA function check, Indirectly register test.
		8902	Burst Transfer error(3).
		8904	CHK4 check error detected(7).
		8907	LRP_MailBox error(3).
		8A02	Burst Transfer error(4).
		8A04	CHK4 check error detected(8).
		8A07	LRP_MailBox error(4).
		8B01	Dummy read error(2).
		8B07	Command completion code error(2).
		8B09	Status error.
		8C01	VATQ Out_Pointer read error.
		8C09	IOCB_HANDLE comparison error.
		8D04	CHK4 check error detected(9).
		8D0E	Polling timeout error.
		8D0F	Parameter error(2).
		8E01	VATQ Out_Pointer update write error.
		8E07	IOCB not response.
		8E09	Response HANDLE value double.
		8F09	Unexpected Asynchronous event.
	176E		Data transfer function check.
		010C	Internal processing contradiction.
		010F	Parameter error.
		1504	CHK4 check error detected(1).
		5701	Destination DXBF read error(1).
		5801	Data to Source DS write error(1).
		5807	Mailbox Command: Diagnostic Loopback (0x0045) error(1).
		5901	Destination DS read error(1).
		5A02	Data to Source DXBF burst transfer error(1).
		5A07	Mailbox Command: Diagnostic Loopback (0x0045) error(2).
		5B01	Destination DS read error(2).
		5C01	Data to Source DS write error(2).
		5C07	Mailbox Command: Diagnostic Loopback (0x0045) error(3).
		6101	Source DS clear error.
		6402	Source DXBF clear burst transfer error(1).
		6404	CHK4 check error detected(2).
		6502	Destination DXBF clear burst transfer error(1).
		6504	CHK4 check error detected(3).

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LSI classification	Test ID	Error Code	Error Contents
Hilda	176E		Data transfer function check.
		6702	Data to Source DXBF burst transfer error(2).
		6704	CHK4 check error detected(4).
		6707	Mailbox Command: Diagnostic Loopback (0x0045) error(4).
		6902	Source DXBF clear burst transfer error(2).
		6A02	Destination DXBF clear burst transfer error(2).
		6B02	Data to Source DXBF burst transfer error(3).
		6B04	CHK4 check error detected(5).
		6B07	Mailbox Command: Diagnostic Loopback (0x0045) error(5).
		6D09	The rear of user data is comparison error.
		6D0D	Data comparison error.
		6F01	Destination DS clear error.
		7001	Destination DXBF read error(2).
		7004	CHK4 check error detected(6).
		7301	Destination DXBF read error(3).
		7604	CHK4 check error detected(7).
		760D	Data comparison error.
	176F		FC16G Diagnosis End.
		010C	Internal processing contradiction(1).
		010F	Parameter error.
		1504	CHK4 check error detected(1).
		1E01	GPIO Data Register Write error.
		1F01	GPIO Enable Register Write error.
		2001	Dummy read error.
		2302	Burst Transfer error.
		2304	CHK4 check error detected(2).
		2307	LRP_MailBox error(1).
		2404	CHK4 check error detected(3).
		2407	LRP_MailBox error(2).
		240C	Internal processing contradiction(2).
		2B04	CHK4 check error detected(4).
		2B07	LRP_MailBox error(3).
		2E01	Registers recovery error.

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LSI classification	Test ID	Error Code	Error Contents
LRP	1901		LRP diagnosis control
		0040	CHK1 Error occurred
		0002	HARD ADPMODE Read Error occurred
		0003	Illegal Parameter Error occurred
		0004	Indirect read error
		0005	Indirect write error
		001F	Illegal HARD ADPMODE Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
LR8	1902		LR diagnosis control
		0040	CHK1 Error occurred
		0002	HARD ADPMODE Read Error occurred
		0003	Illegal Parameter Error occurred
		0004	Indirect read error
		0005	Indirect write error
		001F	Illegal HARD ADPMODE Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
	1903		Protocol chip diagnosis control
		0040	CHK1 Error occurred
		0002	HARD ADPMODE Read Error occurred
		0003	Illegal Parameter Error occurred
		0005	Indirect write error
		001F	Illegal HARD ADPMODE Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
	1910		Register Test
		0001	Retry over
	1911		XD test
		0040	CHK1 Error occurred
		0001	Retry over
		0004	Indirect read error
		0005	Indirect write error
		0006	Data Compare Error occurred
		0009	XD indirect access Time Out Error occurred
		0026	XD indirect access STS Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred

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LSI classification	Test ID	Error Code	Error Contents
LR8	1912		INT test
		0001	Retry over
	1913		Patrol check
		0004	Indirect read error
		0019	Data Compare Error occurred
	1920		DARB memory test
		0001	Retry over
	1921		DARB Statistical information test
		0001	Retry over
	1930		DMA DXBF→LM Data Transfer Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DMA Data Transfer Execution Time Out Error occurred
		001E	DMA status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 Common part error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection
	1931		DMA DXBF↔CM Data Transfer Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DMA Data Transfer Execution Time Out Error occurred
		001E	DMA status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 Common part error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection

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LSI classification	Test ID	Error Code	Error Contents
LR8	1932		DMA T10CRC Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DMA Data Transfer Execution Time Out Error occurred
		001E	DMA status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 Common part error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection
	1933		DMA OCRC Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DMA Data Transfer Execution Time Out Error occurred
		001E	DMA status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 Common part error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection
	1934		DMA Cache Format Write Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DMA Data Transfer Execution Time Out Error occurred
		001E	DMA status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection

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LSI classification	Test ID	Error Code	Error Contents
LR8	1934		DMA Cache Format Write Test
		0514	CHK2 Common part error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection
	1935		DMA Write dummy Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DMA Data Transfer Execution Time Out Error occurred
		001E	DMA status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 Common part error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection
	1936		DMA Oracle check sum Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DMA Data Transfer Execution Time Out Error occurred
		001E	DMA status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 Common part error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection
	1940		DRR Internal RAM Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0005	Indirect write error
		0006	Data Compare Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred

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LSI classification	Test ID	Error Code	Error Contents
LR8	1940		DRR Internal RAM Test
		1004	DRB write Indirect read error
		1005	DRB write Indirect write error
		1104	DRB read Indirect read error
		1105	DRB read Indirect write error
	1941		DRR Cache Format Write Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DRR Data Transfer Execution Time Out Error occurred
		001E	DRR status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 Common part error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection
		1104	DRB read Indirect read error
		1105	DRB read Indirect write error
	1942		DRR LA exchange Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0007	Burst transfer Error occurred
		0009	DRR Data Transfer Execution Time Out Error occurred
		001E	DRR status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 Common part error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection

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LSI classification	Test ID	Error Code	Error Contents
LR8	1943		DRR Parity account Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0007	Burst transfer Error occurred
		0009	DRR Data Transfer Execution Time Out Error occurred
		001E	DRR status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 Common part error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection
	1950		MFDMA DXBF→LM Data Transfer Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DMA Data Transfer Execution Time Out Error occurred
		001E	DMA status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 MFDMA error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection
	1951		MFDMA DXBF↔CM Data Transfer Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DMA Data Transfer Execution Time Out Error occurred
		001E	DMA status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection

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LSI classification	Test ID	Error Code	Error Contents
LR8	1951		MFDMA DXBF↔CM Data Transfer Test
		0514	CHK2 MFDMA error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection
	1952		MFDMA PRM→DXBF Data Transfer Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DMA Data Transfer Execution Time Out Error occurred
		001E	DMA status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 MFDMA error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection
	1953		MFDMA ByteAline Test
		0040	CHK1 Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0009	DMA Data Transfer Execution Time Out Error occurred
		001E	DMA status Error occurred
		0104	CHK4 check Indirect read error
		0123	CHK4 Error occurred
		0304	CHK2 check (INT) Indirect read error
		0313	CHK2 INT factor detection
		0514	CHK2 MFDMA error detection
		0515	CHK2 External part error detection
		0516	CHK2 continuance error detection

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LSI classification	Test ID	Error Code	Error Contents
QE8	1960		FC8G Diagnosis Start.
		01xC *1	Internal processing contradiction(1).
		01xF *1	Parameter error(1).
		02xC *1	Internal processing contradiction(2).
		11x4 *1	CHK4 check error detected(1).
		12x4 *1	CHK4 check error detected(2).
		1Fx4 *1	CHK4 check error detected(3).
		1Fx7 *1	LRP_MailBox error(1).
		21x2 *1	Burst Transfer error(1).
		21x4 *1	CHK4 check error detected(4).
		21x7 *1	LRP_MailBox error(2).
		21x9 *1	ADP mode get error.
		21xC *1	Internal processing contradiction(3).
		22x2 *1	Burst Transfer error(2).
		22x4 *1	CHK4 check error detected(5).
		22x7 *1	LRP_MailBox error(3).
		23x2 *1	Burst Transfer error(3).
		23x4 *1	CHK4 check error detected(6).
		23x7 *1	LRP_MailBox error(4).
		24x2 *1	Burst Transfer error(4).
		24x4 *1	CHK4 check error detected(7).
		24x7 *1	LRP_MailBox error(5).
		24xF *1	Parameter error(2).
		26xC *1	FC8G Protocol initial setting table make error.
		27xC *1	FC8G port initial setting table make error.
		29x1 *1	S_ID entry register write error.
		2Ax1 *1	MP search register write error.
		2Bx1 *1	MP search table write error.
		2Cx1 *1	MP search data save error.
		2Dx1 *1	MP search register save error.
		2Ex1 *1	S_ID entry register table save error.
		42x1 *1	Register save error.
		43x1 *1	Register write error.
		44x1 *1	Register read error.
		45xD *1	comparison error.
		46x1 *1	Register recovery error.
		47x1 *1	QE8 Configuration 2 Register write error.

*1: x = Port Number

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LSI classification	Test ID	Error Code	Error Contents
QE8	1960		FC8G Diagnosis Start.
		48x1 *1	QE8 Configuration 1 Register read error.
		49x1 *1	QE8 Configuration 1 Register write error.
		4Bx1 *1	Frame Manager Link Status 1 Register (BAD CHAR CHK) read error.
		4Bx4 *1	BAD CHAR CHK polling CHK4 check error detected.
		4BxE *1	BAD CHAR CHK polling timeout error.
		4BxF *1	BAD CHAR CHK polling parameter error.
		4Cx1 *1	Frame Manager Primitive Register write error.
		4Dx1 *1	Frame Manager Control Register(LIP) write error.
		4Ex1 *1	Frame Manager Control Register(LIP) dummy read error.
		4Fx1 *1	Frame Manager Control Register(Offline) write error.
		50x1 *1	Frame Manager Control Register(Offline) dummy read error.
		51x1 *1	Frame Manager Control Register(Initialize) write error.
		52x1 *1	Frame Manager Control Register(Initialize) dummy read error.
		53x4 *1	IMQ-P index polling CHK4 check error detected.
		53xE *1	IMQ-P index polling timeout error.
		53xF *1	IMQ-P index polling parameter error.
		54x1 *1	IMQ_C Index update write error(1).
		55x1 *1	Dummy read error.
		57x1 *1	IMQ_C Index update write error(2).
		58x1 *1	SFQ_C Index write error.
		59x1 *1	Frame Manager Status Register read error.
		5Ax9 *1	Frame Manager Status Register is not Expected value.
		5Bx1 *1	Frame Manager Received AL_PA Register read error.
		5Cx9 *1	Frame Manager Received AL_PA Register ACQ_ALPA ID is not Expected value.
		5Dx1 *1	My ID Register write error.
		5Ex1 *1	Frame Manager Status Register(INT STS CLR) write error.
		5Fx1 *1	Frame Manager Link Status 1 Register(LINK STS CLR CHECK) read error(1).
		60x1 *1	Frame Manager Link Status 1 Register(LINK STS CLR CHECK) read error(2).
		60x4 *1	CHK4 check error detected(8).
		60x9 *1	Link Status is not cleared.

*1: x = Port Number

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LSI classification	Test ID	Error Code	Error Contents
QE8	1961		Transfer: DXBF to LM.
		01xC *1	Internal processing contradiction.
		13x4 *1	CHK4 check error detected(1).
		13xD *1	Data comparison error.
		56x4 *1	VERQ_CI polling CHK4 check error detected.
		56xE *1	VERQ_CI polling timeout error.
		56xF *1	VERQ_CI polling parameter error.
		57x4 *1	VIMQ_PI polling CHK4 check error detected.
		61x1 *1	VIMQ_CI read error.
		62x1 *1	VERQ_PI read error.
		63x1 *1	VERQ_PI read error.
		63x2 *1	IRB[ERQ] Burst Transfer error.
		64x2 *1	TRE[SEST_0] Burst Transfer error.
		65x1 *1	ERQ PI update error.
		65x2 *1	FCHS Burst Transfer error.
		65x4 *1	CHK4 check error detected(2).
		66x2 *1	IRE[SEST_1] Burst Transfer error.
		66x4 *1	CHK4 check error detected(3).
		67xE *1	VIMQ_PI polling timeout error.
		67xF *1	VIMQ_PI polling parameter error.
		68x1 *1	VIMQ_CI count up error(1).
		68x9 *1	1st VIMQ contents NG.
		69x1 *1	Dummy read error.
		69x9 *1	2nd VIMQ contents NG.
		6Ax4 *1	2nd VIMQ_PI polling CHK4 check error detected.
		6AxE *1	2nd VIMQ_PI polling timeout error.
		6AxF *1	2nd VIMQ_PI polling parameter error.
		6Bx1 *1	VIMQ_CI count up error(2).
		6Bx4 *1	CHK4 check error detected(4).
		71x2 *1	Burst Transfer error.

*1: x = Port Number

LSI classification	Test ID	Error Code	Error Contents
QE8	1962		Transfer: DXBF to DXBF.
		01xC *1	Internal processing contradiction.
		15x2 *1	Burst Transfer error.
		15x4 *1	CHK4 check error detected(1).
		15xD *1	Data comparison error.
		56x4 *1	VERQ_CI polling CHK4 check error detected.
		56xE *1	VERQ_CI polling timeout error.
		56xF *1	VERQ_CI polling parameter error.
		57x4 *1	VIMQ_PI polling CHK4 check error detected.
		61x1 *1	VIMQ_CI read error.
		62x1 *1	VERQ_PI read error.
		63x1 *1	VERQ_PI read error.
		63x2 *1	IRB[ERQ] Burst Transfer error.
		64x2 *1	TRE[SEST_0] Burst Transfer error.
		65x1 *1	ERQ PI update error.
		65x2 *1	FCHS Burst Transfer error.
		65x4 *1	CHK4 check error detected(2).
		66x2 *1	IRE[SEST_1] Burst Transfer error.
		66x4 *1	CHK4 check error detected(3).
		67xE *1	VIMQ_PI polling timeout error.
		67xF *1	VIMQ_PI polling parameter error.
		68x1 *1	VIMQ_CI count up error(1).
		68x9 *1	1st VIMQ contents NG.
		69x1 *1	Dummy read error.
		69x9 *1	2nd VIMQ contents NG.
		6Ax4 *1	2nd VIMQ_PI polling CHK4 check error detected.
		6AxE *1	2nd VIMQ_PI polling timeout error.
		6AxF *1	2nd VIMQ_PI polling parameter error.
		6Bx1 *1	VIMQ_CI count up error(2).
		6Bx4 *1	CHK4 check error detected(4).

*1: x = Port Number

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LSI classification	Test ID	Error Code	Error Contents
QE8	1963		Transfer: T10-DIF
		01xC *1	Internal processing contradiction.
		16x1 *1	Register(UDT4,UDT5,CRC0,CRC1) read error.
		16x2 *1	Burst Transfer error.
		17x1 *1	Register(UDT0,UDT1,UDT2,UDT3) read error.
		18x1 *1	Register(UDT4,UDT5,CRC0,CRC1) read error.
		19x1 *1	Register(UDT0,UDT1,UDT2,UDT3) read error.
		19x4 *1	CHK4 check error detected(1).
		19xD *1	Data comparison error.
		56x4 *1	VERQ_CI polling CHK4 check error detected.
		56xE *1	VERQ_CI polling timeout error.
		56xF *1	VERQ_CI polling parameter error.
		57x4 *1	VIMQ_PI polling CHK4 check error detected.
		61x1 *1	VIMQ_CI read error.
		62x1 *1	VERQ_PI read error.
		63x1 *1	VERQ_PI read error.
		63x2 *1	IRB[ERQ] Burst Transfer error.
		64x2 *1	TRE[SEST_0] Burst Transfer error.
		65x1 *1	ERQ PI update error.
		65x2 *1	FCHS Burst Transfer error.
		65x4 *1	CHK4 check error detected(2).
		66x2 *1	IRE[SEST_1] Burst Transfer error.
		66x4 *1	CHK4 check error detected(3).
		67xE *1	VIMQ_PI polling timeout error.
		67xF *1	VIMQ_PI polling parameter error.
		68x1 *1	VIMQ_CI count up error(1).
		68x9 *1	1st VIMQ contents NG.
		69x1 *1	Dummy read error.
		69x9 *1	2nd VIMQ contents NG.
		6Ax4 *1	2nd VIMQ_PI polling CHK4 check error detected.
		6AxE *1	2nd VIMQ_PI polling timeout error.
		6AxF *1	2nd VIMQ_PI polling parameter error.
		6Bx1 *1	VIMQ_CI count up error(2).
		6Bx4 *1	CHK4 check error detected(4).

*1: x = Port Number

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LSI classification	Test ID	Error Code	Error Contents
QE8	1964		FC8G Diagnosis End.
		0Ex7 *1	LRP_MailBox error(1).
		1Ex4 *1	CHK4 check error detected(1).
		20x4 *1	CHK4 check error detected(2).
		20x7 *1	LRP_MailBox error(2).
		20xC *1	Internal processing contradiction.
		2Fx1 *1	S_ID entry register table recovery error.
		30x1 *1	MP search Register recovery error.
		31x1 *1	MP search Data recovery error.

*1: x = Port Number

DIAG06-690

LSI classification	Test ID	Error Code	Error Contents
LRP	1970		LRP Diagnosis Start.
		010c	Internal processing contradiction(1).
		010F	Parameter error.
		020c	Internal processing contradiction(2).
		1201	DXBF diagnosis status read error.
		1209	DXBF diagnosis status NG.
		1301	LRP_ERR_EN0 register disable error.
		1401	LRP_ERR_EN1 register disable error.
		1501	LRP_CLR register restart write error.
		1504	Register dummy read error.
		1601	Error detected stop write error.
		1701	LRP_STATUS check read error.
		1709	LRP ACT bit is not '0'.
		1801	LRP_CLR error clear write error.
		1804	Register dummy read error of after error clear.
		1901	LRP_ERR_EN0 register enable error.
		1A01	LRP_ERR_EN1 register enable error.
		1A04	CHK4 check error detected(1).
		1F01	DS save read error.
		3401	LR_LRP4_SPT1 register stop enable error.
		3501	LR_LRPDMA_FDMA_CTL start write error.
		3601	LR_LRPDMA_FDMA_RST start write error.
		3701	LR_LRPDMA_FDMA_RST end write error.
		3801	LR_LRPDMA_FDMA_CTL end write error.
		3901	LR_LRP4_SPT1 register stop disable error.
		4104	CHK4 check error detected(2).
		4204	CHK4 check error detected(3).
	1971		DS clear of The entire surface.
		2F01	DS '0' clear error.
	1972		DS memory Diagnosis.
		4301	DS data write error.
		4304	CHK4 check error detected(Top).
		4306	LRP register error detected(1).
		4401	DS read error.
		4406	LRP register error detected(2).
		4504	CHK4 check error detected (Bottom).
		4506	DS memory comparison error.

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LSI classification	Test ID	Error Code	Error Contents
LRP	1973		CS memory Diagnosis.
		010C	Internal processing contradiction.
		010F	Parameter error.
		2101	Register write error.
		2201	Register read error.
		2209	Register contents error.
		2301	CS memory write data(byte 0 to 3) set error.
		2401	CS memory write data(byte 4 to 7) set error.
		2501	CS memory write data(byte 8 to 11) set error.
		2601	CS memory write data(byte 12 to 15) set error.
		2701	CS memory write directions error.
		2801	CS memory write completion check read error.
		280E	CS memory write completion waiting polling timeout error.
		2901	CS memory read directions error.
		2A01	CS memory read completion check read error.
		2A0E	CS memory read completion waiting polling timeout error.
		2B01	CS memory read data(byte 0 to 3) get error.
		2C01	CS memory read data(byte 4 to 7) get error.
		2D01	CS memory read data(byte 8 to 11) get error.
		2E01	CS memory read data(byte 12 to 15) get error.
		4204	CHK4 check error detected(1).
		4605	LRP register error detected(1).
		4705	LRP register error detected(2).
		4804	CHK4 check error detected(2).
		4805	CS memory comparison error.

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LSI classification	Test ID	Error Code	Error Contents
LRP	1974		LRP-CUDG loading.
		010C	Internal processing contradiction.
		4204	CHK4 check error detected(1).
		4901	DXBF LRP script CUDG version read error.
		4A0D	LRP script comparison error.
		4B01	Script area change error.
		4B02	PM to DXBF LRP script transfer error.
		4B04	CHK4 check error detected(2).
		4C08	PM LRP-CUDG Firmware check SUM error.
		4C09	PM LRP-CUDG Firmware version value NG.
		4D01	LRPFW transfer completion check data write error.
		4E01	LRPFW transfer completion check data read error.
		4E09	LRPFW transfer uncompleted.
		4E0E	LRPFW transfer uncompleted timeout error.
	1975		LRP-CUDG inside diagnosis.
		010C	Internal processing contradiction.
		1301	LRP_ERR_EN0 register disable error.
		1401	LRP_ERR_EN1 register disable error.
		1501	LRP_CLR register restart write error.
		1504	Register dummy read error.
		1601	Error detected stop write error.
		1701	LRP_STATUS check read error.
		1709	LRP ACT bit is not '0'.
		1801	LRP_CLR error clear write error.
		1804	Register dummy read error of after error clear.
		1901	LRP_ERR_EN0 register enable error.
		1A01	LRP_ERR_EN1 register enable error.
		1A04	CHK4 check error detected(1).
		1B01	ADR1/0 LOCK Release error.
		1B0C	Start address conversion error.
		1C01	Start address write error.
		1C04	Dummy read error.
		1D01	LRP Start register write error.
		1E01	LRP Status register read error.
		1E04	CHK4 check error detected(2).
		1E09	LRP Starting error.

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LSI classification	Test ID	Error Code	Error Contents
LRP	1975		LRP-CUDG inside diagnosis.
		3401	LR_LRP4_SPT1 register stop enable error.
		3501	LR_LRPDMA_FDMA_CTL start write error.
		3601	LR_LRPDMA_FDMA_RST start write error.
		3701	LR_LRPDMA_FDMA_RST end write error.
		3801	LR_LRPDMA_FDMA_CTL end write error.
		3901	LR_LRP4_SPT1 register stop disable error.
		4204	CHK4 check error detected(3).
		4C04	CHK4 check error detected(4).
		5101	End notice area clear error.
		5204	CHK4 check error detected(5).
		5304	CHK4 check error detected(6).
		530E	timeout error.
		5401	End notice area read error(1).
		5403	LRP register error detected.
		5501	ADR1/0 LOCK Release error.
		5504	CHK4 check error detected(7).
		5701	End notice area read error(2).
		580A	LRP-CUDG inside diagnostic result NG.
		5901	LOCK register Release error.
	1976		DS clear after diagnosis.
		2001	DS recovery write error.
		3101	Version information save error.
		3104	CHK4 check error detected(Top).
		3201	DS '0' clear error.
		3301	Version information recovery error.
		3304	CHK4 check error detected (Bottom).
	1977		LRP4 FM Boot.
		1B01	ADR1/0 LOCK Release error.
		1B0C	Start address conversion error.
		1C01	Start address write error.
		1C04	Dummy read error(1).
		1D01	LRP Start register write error.
		1E01	LRP Status register read error.
		1E04	CHK4 check error detected(1).
		1E09	LRP Starting error.

DIAG06-730

LSI classification	Test ID	Error Code	Error Contents
LRP	1977		LRP4 FM Boot.
		5801	LRP4 Status register read error.
		5A01	LRP4 Status change error.
		5A04	CHK4 check error detected(2).
		5B01	Dummy read error(2).
		5B0E	timeout error.
	1978		LRP Diagnosis End.
		4204	CHK4 check error detected.
LR8	1980		LR↔CM Path Test
		0040	CHK1 Error occurred
		0003	Illegal Parameter Error occurred
		0004	Indirect read error
		0006	Data Compare Error occurred
		0007	Burst transfer Error occurred
		0010	LDV DMA securing function error return
		0011	LDV DMA start function error return
		0012	LDV DMA end function error return

DIAG06-740**6.3.2 CUDG4 error code list**

Test Number	DKC No.	Error Contents
00 - 0F	0	The error is detected by the LR8 LSI / Protocol chip diagnosis.
10 - 1F	1	
20 - 27	0	The error is detected by the MP Processor diagnosis.
30 - 37	1	
40 - 43	0	The error is detected by the MSW LSI / CFM / Memory diagnosis.
50 - 53	1	