

DF800

Disk Array System

Maintenance Manual

REV.58

Read this manual carefully and keep it.

- Before starting operation, read the safety instructions carefully and fully understand them.
- After reading this manual, keep it at hand for your reference.

HITACHI

Preface

This manual explains the operation introduction, installation, maintenance, and WEB of the DF800 disk array system for service personnel to make them understand the DF800.

This manual contains information on maintenance works of the DF800 series disk array system such as subsystem outline, structure, installation, and actions against failures.

When performing a maintenance work, read this manual carefully, and fully understand the Introduction of operation, operation procedure, and instructions before starting the work.

This manual was carefully prepared and reviewed for completeness and correctness. However, please feel free to contact us concerning any question, mistake, omission, or any other issues about this manual.

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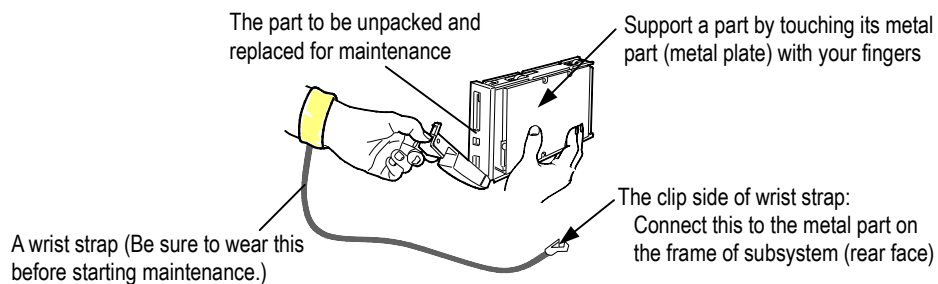
Cautionary Notes

On This Manual

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 - Hitachi, Ltd. is not liable for any troubles or accidents which are caused by operation not written in this manual.
 - The DF800 Maintenance Manual may be revised without prior notice.
 - Although this subsystem has the built-in laser diode, it meets the laser system standard of class 1. It does not emit the laser beam, which is harmful to a human body, outside the subsystem in the usual operation.
- Operate the subsystem according to this manual. Otherwise, it may cause unexpected accidents or failures.

General Cautionary Notes

- It is feared that user data is lost unless the power is turned off correctly following the specified procedure.
- The Disk Drives are precise components. Never apply them any shock no vibration.
- After replacing the Cache Backup Battery, connect the power cables to the Power Units, and deliver it to the customer after charging the battery. (It is about 24 hours at the maximum.)
- In order to protect parts from the electrostatic discharge, every worker must put a wrist strap on his/her wrist before starting installation or maintenance work and start the work after connecting the grounding clip to a metallic portion of the frame. (The wrist strap must be put on when connecting the LAN cable.)
- Do the work with the wrist strap put on. Do not put off the wrist strap till the work is finished.
- When handling a part, hold it in the way that fingertips of the hand putting the wrist strap on touch a metallic portion of the part. (The above is necessary in order to discharge the charged static electricity and prevent a charge caused by handling.)
- Be sure to touch the subsystem with the wrist strap put on. If you touch the subsystem without putting on the wrist strap, the static electricity charged on your body flows to the subsystem in an instant because no resistance exists between your body and the subsystem causing a subsystem trouble.



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Note

EMI Regulation

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference in which case the user will be required to correct the interference at his own expense. Testing was done with shielded cables. Therefore, in order to comply with the FCC regulations, you must use shielded cables with you installation.

EMI Regulation Labels Affixed on the Subsystem.

この装置はクラスA情報技術装置です。
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"This equipment complies with the requirements in part 15 of FCC Rules for a Class A computing device and Part II, Vol. 122, No. 20 of Canada Gazette for a Class A digital apparatus. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference."

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

The EMI test was done in the following configuration.

If a trouble occurs in another configuration, a user may be requested to take appropriate preventive measures.

- DF800-RKS/RKM+RKAK(×4)+RK40
- DF800-RKH+RKAK(×4)+RK40
- DF800-RKS/RKM+RKAK(×2)+RKAKX(×2)+RK40
- DF800-RKHE/RKHED+RKAK/RKAKD+N1RK/N1RKD+RK40
- DF800-RKHE+RKAK(×2)+RKAKX(×2)+RK40
- DF800-RKHED+RKAKD(×5)+RK40
- DF800-RKEM+RKAK(×2)+RK40
- DF800-RKES+RKAK(×2)+RK40
- DF800-RKEXS/RKEXSA/RKEXS8F+RKAK(×2)+RK40
- DF800-RKEH+RKAKX+RKAK(×2)+RK40
- DF800-RKEHD+RKAKD(×2)+RK40
- DF800-RKEXS/RKEXSA+RKAKSx1+RK40
- DF800-RKS/RKES+RKAKX+RKAKx2+RKAKSx2+RK40
- DF800-RKM/RKEM+RKAKX+RKAKx2+RKAKSx2+RK40
- DF800-RKH/RKHE/RKEH+RKAKX+RKAKx2+RKAKSx2+RK40

The DF800-RKHED with the DF-F800-UBKD attached and the DF800-RKAKD and the DF800-N1RKD with the DF-F800-UBKAD are the equipment with the NEBS (Network Equipment-Building System) specifications.

The equipment with the NEBS specifications is suitable for use in Telecommunications Facilities.

The equipment with the NEBS specifications is suitable for use in the CBN (Common Bonding Network).

This page is for editorial purpose only.

Model Name Conversion

Throughout this document, product model name is written as “DF800”. When you want to use this document for the HT-4065 series, please conversion the model name “DF800” with “HT-4065”.

Table 1 Conversion Table for Model Name and Other Model Name

The model name which is used in this document	The model name replace to DF800	Type
DF800-xxx	HT-4065-xxx	Rackmount model (DF800-RKM) Rackmount model (DF800-RKS) Rackmount model (DF800-RKH) Rackmount model (DF800-RKEXS) Rackmount model (DF800-RKEXSA) Rackmount model (DF800-RKEXS8F)
DF-F800-xxxx	HT-F4065-xxxx	Optional component Accessory component

The following ten types of Basic Chassis exist in the AMS2500.

- DF800-RKH (abbr.: RKH)
- DF800-RKEH (abbr.: RKEH)
- DF800-RKH2 (abbr.: RKH2)
- DF800-RKEH2 (abbr.: RKEH2)
- DF800-RKHE (abbr.: RKHE)
- DF800-RKHE2 (abbr.: RKHE2)
- DF800-RKHED (abbr.: RKHED)
- DF800-RKEHD (abbr.: RKEHD)
- DF800-RKHE2D (abbr.: RKHE2D)
- DF800-RKEH2D (abbr.: RKEH2D)
- DF800-RKEXC (abbr.: RKEXC)

This manual does not describe the RKH2/RKEH/RKHE/RKHE2/RKEH2//RKEXC/RKHED/RKEHD/RKHE2D/RKEH2D except for the following differences.

When the RKH2/RKHE/RKEH/RKHE2/RKEH2/RKEXC/RKHED/RKEHD/RKHE2D/RKEH2D is used, it becomes the same procedure as the RKH.

Therefore, read the RKH as the

RKH2/RKHE/RKEH/RKHE2/RKEH2/RKEXC/RKHED/RKEHD/RKHE2D/ RKEH2D excluding the part described in parallel and use it.

The drive DF-F800-ACE3KX installed in the RKAKX connected with the RKEXC is the same one as the drive DF-F800-AVE3KX. Therefore, read the ACE3KX as the AVE3KX.

Table 2 Difference among RKH, RKH2, RKHE, RKEH, RKHE2, RKEH2, RKEXC, RKHED, RKEHD, RKHE2D, and RKEH2D

Chassis Name	Number of the Cache Backup Battery installed by standard	Connection with the Additional Battery Box	Power specification
RKH	2	X	AC power supply
RKH2	4	X	AC power supply
RKHE	2	○	AC power supply
RKEH	2	○	AC power supply
RKHE2	4	○	AC power supply
RKEH2/RKEXC	4	○	AC power supply
RKHED	2	○	DC power supply
RKEHD	2	○	DC power supply
RKHE2D	4	○	DC power supply
RKEH2D	4	○	DC power supply

The following four types of Additional Chassis exist in the AMS2500.

- DF800-RKAK (abbr.: RKAK)
- DF800-RKAKD (abbr.: RKAKD)

This manual does not describe the RKAKD except for the following differences.

When the RKAKD is used, it becomes the same procedure as the RKAK.

Therefore, read the RKAK as the RKAKD excluding the part described in parallel and use it.

Table 3 Difference between RKAK and RKAKD

Chassis Name	Number of the Cache Backup Battery installed by standard	Connection with the Additional Battery Box	Power specification
RKAK	2	○	AC power supply
RKAKD	4	○	DC power supply

The following two types of Control Units exist in the AMS2300 and AMS2100.

- Control Units for AMS2100: (abbr.: RKS, RKES)
- Control Units for AMS2300: (abbr.: RKM, RKEM)

When the RKES/RKEM is used, it becomes the same procedure as the RKS/RKM.

Therefore, read the RKS/RKM as the RKES/RKEM excluding the part described in parallel and use it.

The following three types of Basic Chassis exist in the AMS2010.

- DF800-RKEXS (abbr.: RKEXS)
- DF800-RKEXSA (abbr.: RKEXSA)
- DF800-RKEXS8F (abbr.: RKEXS8F)

For the RKEXSA, the same Chassis as the RKS is used.

In this manual, the RKEXS/RKEXSA becomes the same procedure as the AMS2100 H/W Rev.0100 (abbr.: RKS) excluding the specification of the Control Unit (Fibre Channel interface for the RKEXS, iSCSI interface for the RKEXSA). Therefore, read the RKS as the RKEXS/RKEXSA excluding the part described in parallel and use it.

For the RKEXS8F, the same Chassis as the RKES is used.

In this manual, the RKEXS8F becomes the same procedure as the AMS2100 H/W Rev.0200 (abbr.: RKES) excluding the specification of the Control Unit (Fibre Channel interface for the RKEXS, iSCSI interface for the RKEXSA, Fibre Channel + iSCSI interface for the RKEXS8F). Therefore, read the RKES as the RKEXS8F excluding the part described in parallel and use it.

Manual Composition

This Maintenance Manual is composed of 11 volumes, that is, Maintenance Manuals- for Introduction, for Maintenance, for Installation, Firmware, System Parameter, Addition/Removal/Relocation, Troubleshooting, Messages, Replacement, Parts Catalog, and for WEB. Each volume and chapter has table of contents to help readers to find just the page they want. Besides, glossary is contained in each appendix.

For the composition of the each volume, refer to the following.

Safety Summary :

This “Safety Summary” volume describes the cautionary notes to handle the maintenance work safely.

Introduction :

This “Introduction” volume describes the cautionary/prohibited notes in the maintenance work, the outline of the subsystem, and the configuration, etc.

Installation :

This “Installation” volume describes the setting of the subsystem and the installation of the parts, etc.

Firmware :

This “Firmware” volume describes the update installation of the firmware.

System Parameter :

This “System Parameter” volume describes the setting of the system parameter of the subsystem, etc.

Addition/Removal/Relocation :

This “Addition/Removal/Relocation” volume describes the addition, removal and relocation related to the setting of the subsystem.

Troubleshooting :

This “Troubleshooting” volume describes the trouble analysis of the subsystem, etc.

Messages:

This “Message” volume describes the content of the message which occurs at the time of the subsystem failure.

Replacement :

This “Parts Replacement” volume describes the replacement work of each part and the periodic maintenance, etc.

Parts Catalog :

This “Parts Catalog” volume describes each part installed in the subsystem.

WEB :

This “WEB” volume describes the operating procedure for WEB.

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[REV]

