

DF500

Disk Array Subsystem

Maintenance Manual

REV.6

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 theory, installation, maintenance, and WEB of the DF500 disk array subsystem for service personnel to make them understand the DF500.

This manual contains information on maintenance works of the DF500 series disk array subsystem such as subsystem outline, structure, installation, and actions against failures. When performing a maintenance work, read this manual carefully, and fully understand the theory of operation, operation procedure, and instructions before starting the work.

The Maintenance Manual consists of the following volumes.

	Drawing No.	Revision	Remarks
Maintenance Manual - for Theory	K6602338	REV.5	
Maintenance Manual - for Installation	K6602339	REV.6	DF500-RK/RKA/H1F/H2F
Maintenance Manual - for Installation L	K6602596	REV.1	DF500-RKL/MK
Maintenance Manual - for Maintenance	K6602340	REV.6	
Maintenance Manual - for WEB	K6602525	REV.5	

Cautionary Notes

On This Manual

- Hitachi, Ltd. owns the copyrights of the DF500 Maintenance Manual. No part of this manual may be reused or reproduced without permission of Hitachi, Ltd.
- Hitachi, Ltd. is not liable for any troubles or accidents which are caused by operation not written in this manual.
- The DF500 Maintenance Manual may be revised without prior notice.
- The subsystem is a “class 1 laser system” which emits no hazardous laser beam. Be sure to operate it according to this manual. Do not perform any operations other than those written in this manual. Otherwise, unexpected failures or accidents may be caused.

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 nor vibration.
- When replacing the batteries, turn off the breaker of the subsystem, charge the batteries for two hours or longer, and then return the subsystem to the customer.
- In order to protect parts of the subsystem from electrostatic discharge, service person is required to put a wristband on his/her wrist before starting installation or maintenance work. (This is also required when connecting a LAN or RS232C cable.)

Other Cautionary Notes

- The Disk Array management program 2 is provided by Disk Array management program Ver.5.10 or later.

Trademarks

HP is a company name of Hewlett Packard Company, in the U.S.A.

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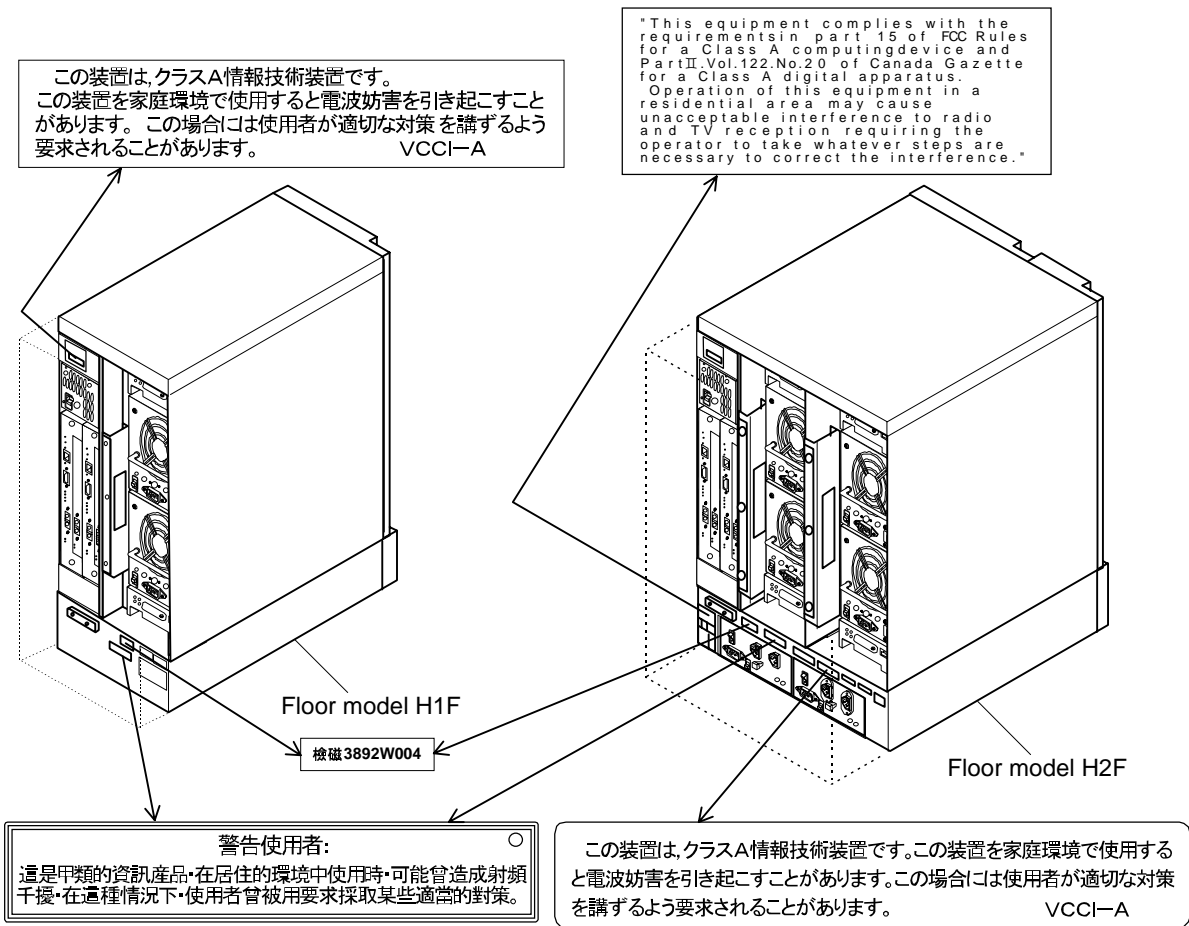
Note

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.

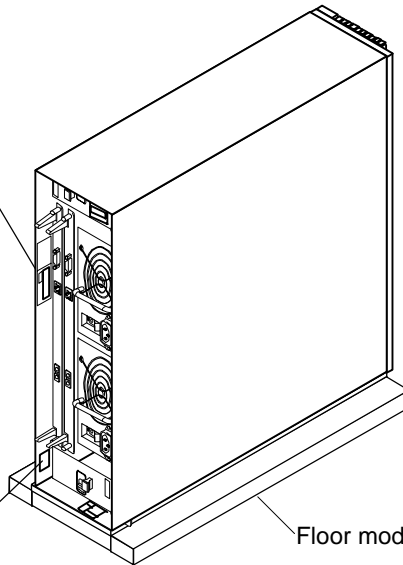
EMI Regulation Labels Affixed on the Subsystem.

Floor model H1F/H2F



Floor model MK

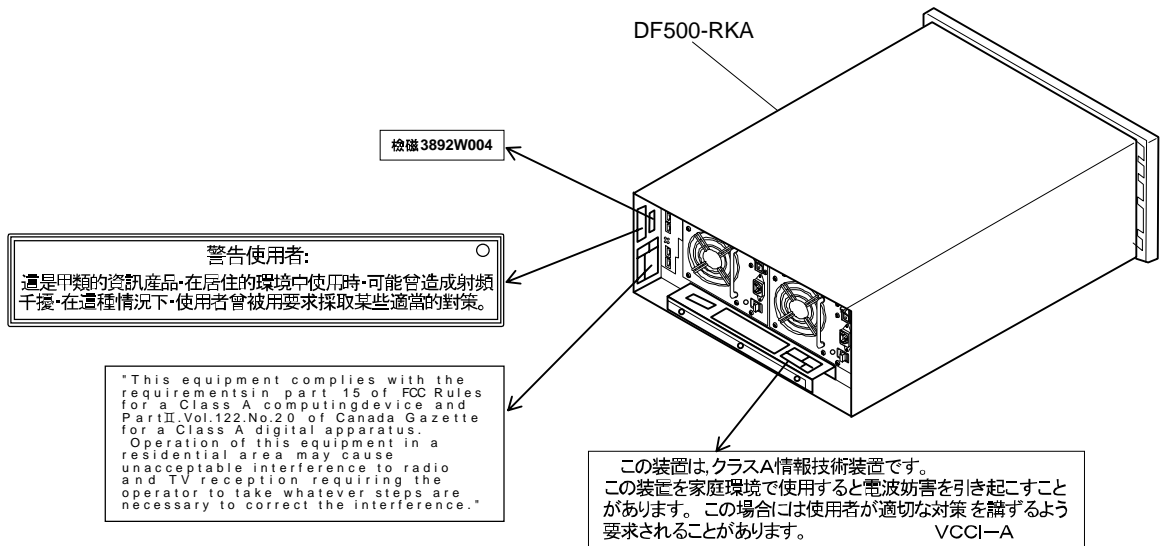
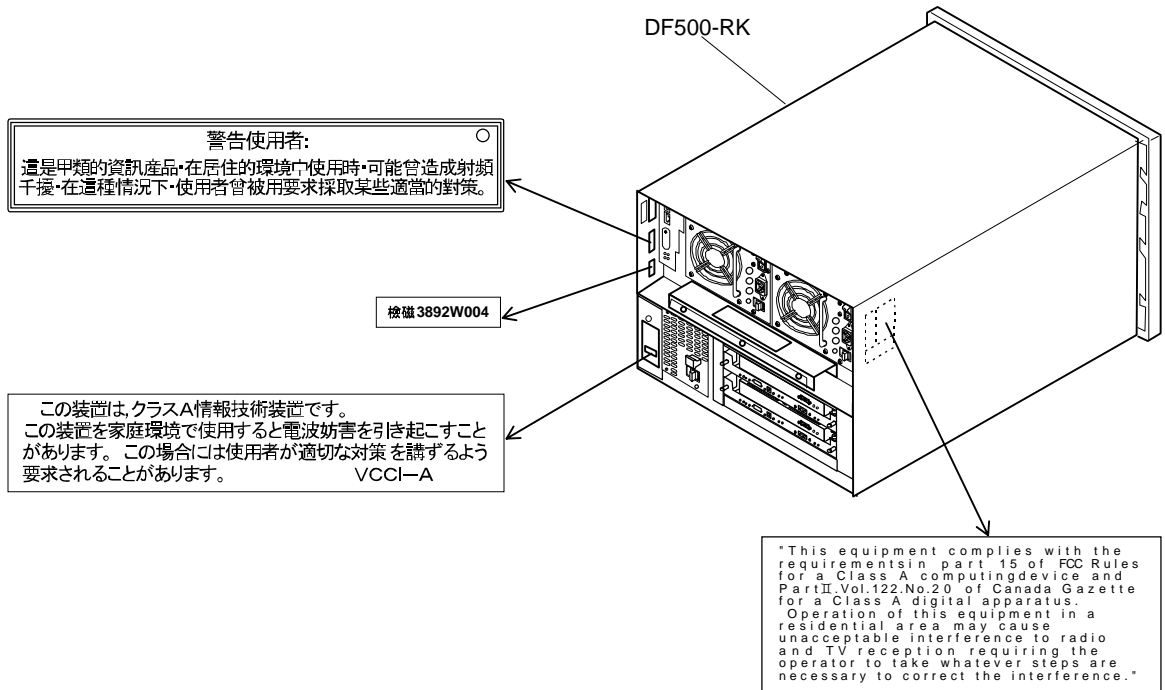
この機器は、コンピュータの接続・操作に必要です。
この機器を電源に接続して使用する場合は、電源の安全な使用に注意すること
があります。この場合には、電源の安全な使用に注意すること
を要する場合があります。
VCCI-A

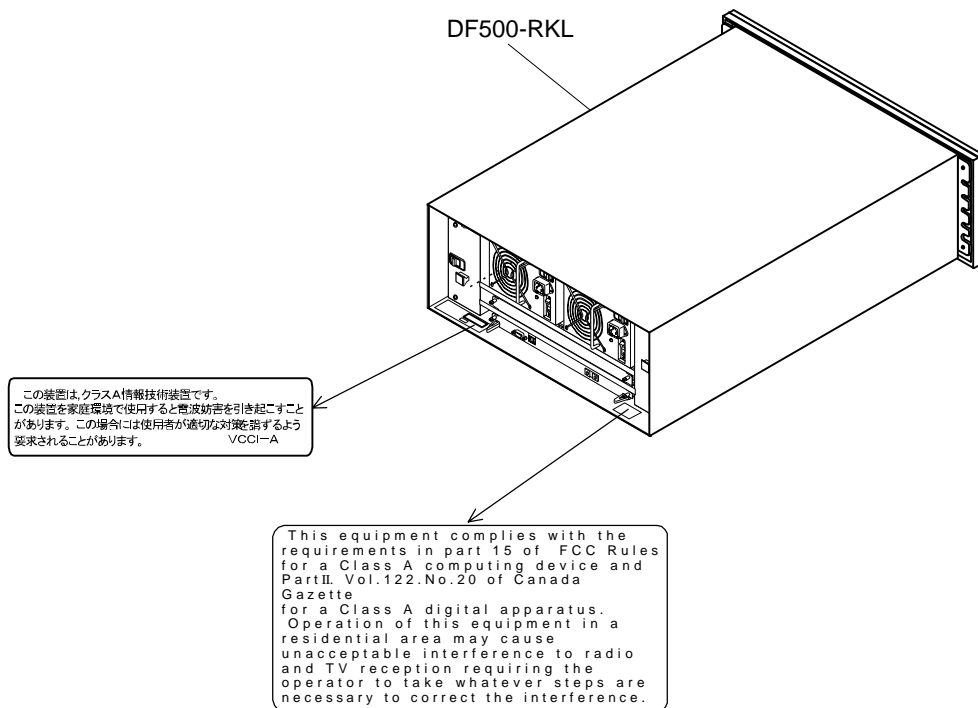


Floor model MK

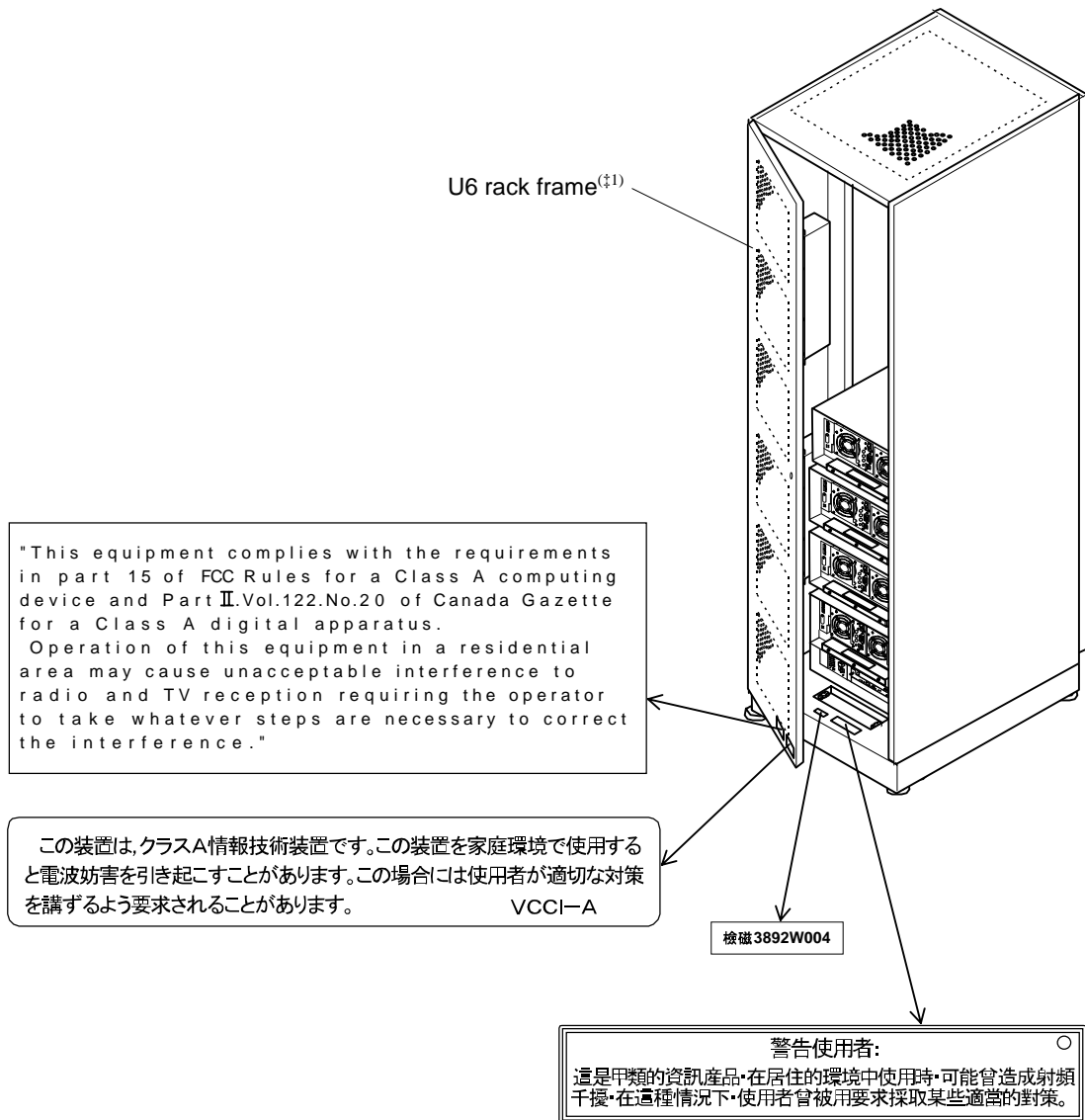
This equipment complies with the requirements in part 15 of FCC Rules for a Class A computing device and Part II, Vol. 122, No. 20 of Canada Gazette for a Class A digital apparatus. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference.

Rackmount model RK/RKA



Rackmount model RKL

Rackmount model with U6 rack frame



†1 : The illustration shows an example of the disk array subsystem in which the DF500-RK/RKA is installed.

Model Name Conversion

The model name which is used in this document	The model name replace to DF500	Type
DF500-xxx	A-6542-xxx	Rackmount model (DF500-RK) Rackmount model (DF500-RKA) Rackmount model (DF500-RKL) Floor model H1F (DF500-RK + DF-F500-H1F) Floor model H2F (DF500-RK + DF500-RKA + DF-F500-H2F) Floor model MK (DF500-RKL + DF-F500-H1FL)
DF-F500-xxxx	A-F6542-xxxx	Optional component Accessory component

Throughout this document, product model name is written as “DF500”. When you want to use this document for the A-6542 series, please replace the model name “DF500” with “A-6542”.

Manual Composition

This Maintenance Manual is composed of five volumes, that is, Maintenance Manuals- for Theory, for Maintenance, for Installation (for RK/RKA/H1F/H2F), for Installation L (for RKL/MK), and for WEB. Each volume and chapter has table of contents to help readers to find just the page they want. Besides, glossary a contained in each appendix.

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

Maintenance Manual - for Theory :

This volume contains information on notes on maintenance works, forbidden items, subsystem outline, subsystem structure, etc.

▲ SAFETY SUMMARY	<i>THEO00-xxxx</i>
Chapter 1. Before Starting Maintenance	<i>THEO 01-xxxx</i>
Chapter 2. Outline of Subsystem	<i>THEO 02-xxxx</i>
Chapter 3. Theory of Operation	<i>THEO 03-xxxx</i>
Chapter 4. Parts Catalog	<i>THEO 04-xxxx</i>
Chapter 5. Maintenance Tools	<i>THEO 05-xxxx</i>
Appendix	<i>THEO 70-xxxx</i>

Maintenance Manual - for Installation :(for RK/RKA/H1F/H2F)

This volume contains information on the works required for the installation such as subsystem settlement, component installation, addition, microprogram installation, and subsystem parameter setting.

▲ SAFETY SUMMARY	<i>INST 00-xxxx</i>
Chapter 1. Before Starting Installation Work	<i>INST 01-xxxx</i>
Chapter 2. Installing Floor Model	<i>INST 02-xxxx</i>
Chapter 3. Rackmount Model with U6 Rack Frame	<i>INST 03-xxxx</i>
Chapter 4. Installing Rackmount Model with U4 Rack Frame	<i>INST 04-xxxx</i>
Chapter 5. Newly Installing Microprogram	<i>INST 05-xxxx</i>
Chapter 6. Parameter Setting (Disk Array management program 2)	<i>INST 06-xxxx</i>
Chapter 7. Adding Optional Installation	<i>INST 07-xxxx</i>
Chapter 8. Mounting on Rack Frames Other Than U6/U4	<i>INST 08-xxxx</i>
Chapter 9. Parameter Setting (Disk Array management program)	<i>INST 09-xxxx</i>
Appendix	<i>INST 70-xxxx</i>

Maintenance Manual - for Installation L :(For RKL/MK)

This volume contains information on the works required for the installation such as subsystem settlement, component installation, addition, microprogram installation, and subsystem parameter setting.

▲ SAFETY SUMMARY *INST-L 00-xxxx*

Chapter 1. Before Starting Installation Work	<i>INST-L 01-xxxx</i>
Chapter 2. Installing Floor Model	<i>INST-L 02-xxxx</i>
Chapter 3. Rackmount Model with U6 Rack Frame	<i>INST-L 03-xxxx</i>
Chapter 4. Installing Rackmount Model with U4 Rack Frame	<i>INST-L 04-xxxx</i>
Chapter 5. Newly Installing Microprogram	<i>INST-L 05-xxxx</i>
Chapter 6. Parameter Setting (Disk Array management program 2)	<i>INST-L 06-xxxx</i>
Chapter 7. Adding Optional Installation	<i>INST-L 07-xxxx</i>
Chapter 8. Mounting on Rack Frames Other Than U6/U4	<i>INST-L 08-xxxx</i>
Chapter 9. Parameter Setting (Disk Array management program)	<i>INST-L 09-xxxx</i>
Appendix	<i>INST-L 70-xxxx</i>

Maintenance Manual - for Maintenance :

This volume contains information on trouble shooting, part replacement, periodical maintenance, etc. of the subsystem.

▲ SAFETY SUMMARY

Chapter 1. Before Maintenance Work	<i>MNTE 00-xxxx</i>
Chapter 2. Troubleshooting	<i>MNTE 01-xxxx</i>
Chapter 3. Troubleshooting by Means of Error Notification Program	<i>MNTE 02-xxxx</i>
Chapter 4. Parts Replacement	<i>MNTE 03-xxxx</i>
Chapter 5. Update Installing Microprogram	<i>MNTE 04-xxxx</i>
Chapter 6. Periodic Maintenance	<i>MNTE 05-xxxx</i>
Appendix	<i>MNTE 06-xxxx</i>
	<i>MNTE 70-xxxx</i>

Maintenance Manual - for WEB :

This volume contains information on operation procedure of WEB.

▲ SAFETY SUMMARY**WEB 00-xxxx**

Chapter 1. Before Using WEB

WEB 01-xxxx

Chapter 2. The Normal Mode Operation Procedure

WEB 02-xxxx

Chapter 3. The Maintenance Mode Operation Procedure

WEB 03-xxxx

Appendix

WEB 70-xxxx

Other manuals concerning the DF500 are the following.

- Disk Array management program (for GUI) User's Guide
- Disk Array management program 2 (for GUI) User's Guide
- Small Disk Array Subsystem ASSIST Manual

Revision Control

Legend for revision codes : AD : Addition CH : Change CR : Correction DL :
Deletion

REV.	Date	DRW	CHKD	APPD	Sheet No.	Description	Code
0	Jul.31.2000	A.Yamanashi	K.Suzuki	M.Sato	All	Issued	-
1	Aug.25.2000	K.Suzuki	K.Suzuki	M.Sato	All	Issued	-
2	Sep.12.2000	K.Suzuki	K.Suzuki	Y.Takeuchi	INST MNTE	Rev. 1 → 2 Rev. 1 → 2	CH CH
3	Oct.10.2000	K.Suzuki	K.Suzuki	Y.Takeuchi	i ii iii ix x	Revision No. was advanced from 2 to 3. (The SCSI version subsystem was newly supported, a description of mounting on rack frames other than the U6/U4J was added.) Description of preface was added. The "Theory" and "WEB" volumes were revised from Rev. 1 to Rev. 2. The "Installation" and "Maintenance" volumes were revised from Rev. 2 to Rev. 3. Description of measures against electrostatic discharge was added to "General Cautionary Notes". Scope of Supporting was deleted. "Appendixes" was changed to "Appendix". Chapter 8 was added to the "Installation" volume. "Appendixes" was changed to "Appendix".	CH AD CH AD DL CR AD CR
4	Dec.10.2000	K.Suzuki	K.Suzuki	Y.Takeuchi	i ii ix	Revision No. was advanced from 3 to 4. "Theory" Rev 2 → Rev. 3 "Installation" Rev. 3 → Rev. 4 "Maintenance" Rev. 3 → Rev. 4 "WEB" Rev. 2 → Rev. 3 Description of text was changed.	CH CH CH
5	Jan.10.2001	K.Suzuki	K.Suzuki	Y.Takeuchi	All	A revision owing to a change of the page format. (Revision numbers of all pages were advanced to 5.)	CH
6	Mar.20.2001	K.Suzuki			0000 0010 0020 0100 0110 0120	Revision No. was advanced from 5 to 6. "Theory" Rev 4 → Rev. 5 "Installation" Rev. 5 → Rev. 6 "Installation L" Rev. 0 → Rev. 1 "Maintenance" Rev. 5 → Rev. 6 "WEB" Rev. 4 → Rev. 5 "Scope of Supporting" was deleted. "Other Cautionary Notes" was added. Chapter 9 was added to the "Installation" volume. Chapter 9 was added to the "Installation L" volume. Appendix was added to the "WEB" volume.	CH CH DL/AD AD AD AD