SONY

SMO-F551 / RMO-S551

Magneto-Optical Disk Drive

Installation Guide **1.8**

Printing History

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Note:

SMO-F551 / RMO-S551 support many kind of MO media, but some operating system cannot support all kind of media. (See appendix; 1-3) Please select proper sector size of the media for each operating system.

Installation Procedure on DOS and Windows3.1

Requirements:

1. SCSI host adapter

SCSI host adapter controls the command and data transfer between MO drive and host computer. (Ex. AHA-2940, AHA-3940 of Adaptec)

2. Device driver

Device driver controls MO drive. Device driver is almost supplied with SCSI host adapter. If you use RMO-S551, we recommend using the "Desk Drive Tune Up ™" bundled with RMO-S551.

3. SCSI cable

SCSI cable is used for connecting host adapter and MO drive. Please select proper SCSI cable.

4. Format utility software

Format utility software enables format and partition on the media. Format utility is often supplied with SCSI host adapter (e.g. ASPI manager and ASPI driver for AHA-29xx are provided from Adaptec). If you use RMO-S551, we recommend using the "Disk Drive Tune UP ™".

Installation:

1) Connection

- Set the SCSI host adapter into the host computer.
- Attach the MO drive to the SCSI host adapter using proper SCSI cable.
- Set proper SCSI ID and termination on the MO drive.

2) Install the device driver

- Turn on the MO drive and host computer.
- Install the device driver on DOS level or on Windows3.1 and reboot host computer.

3) Format the media and partition

- Format and partition on the media using a format utility tool, such as "Desk Drive Tune Up ™".

Note:

- "Desk Drive Tune Up ™" supports all kind of MO media (4.1GB, 4.8GB, 5.2GB), but some device driver does not support 4.8GB or 5.2GB media. Please confirm the proper media before using the device driver. If you have any questions, please contact your dealer of the device driver.

- DOS and Windows3.1 do not support WORM media.

- Before rebooting a host PC, please don't replace other media of a different sector size.

Installation Procedure on Windows95/98

Requirement:

1. SCSI host adapter

SCSI host adapter controls the command and data transfer between MO drive and host computer. (Ex. AHA-2940, AHA-3940 of Adaptec) Windows95/98 supports most of SCSI host adapters.

2. Device driver

Device driver controls MO drive. Windows95/98 encloses the device driver on installation CD-ROM or floppy disk. If you use RMO-S551, we recommend using the “Desk Drive Tune Up ™” bundled with RMO-S551.

3. SCSI cable

SCSI cable is used for connecting host adapter and MO drive. Please select proper SCSI cable.

4. Format utility software

Format utility software enables format and partition on the media. Format utility is often supplied with SCSI host adapter (e.g. ASPI manager and ASPI driver for AHA-29xx are provided from Adaptec). If you use RMO-S551, we recommend using the “Disk Drive Tune UP ™”.

Installation:

1) Connection

- Set the SCSI host adapter into the host computer.
- Attach the MO drive using proper SCSI cable.
- Set proper SCSI ID and termination on the MO drive.

2) Windows Native support

2)-1 Preparation

- Turn on the drive and insert the media.
- Turn on the power of the host system and boot Windows95/98.

2)-2 To detect the connected hardware

- Click the Start button, point to Setting, a system and boot Windows95/98.
- Click Add New Hardware icon.
- Follow the instructions on display

2)-3 Format and Label the media

- Double-click My Computer icon to view various drive icons.
- Highlight the Removable drive icon
- Point on File, and click Format option to initialize and label media.

3) Install the device driver

3)-1 Preparation

- Turn on the MO drive and host computer.
- Install the device driver on Windows95/98 and reboot the host computer. (Please refer to the user's guide of the Device Driver)

3)-2 Format the media and partition

- Format and make partition on the media by using format utility software, such as "Desk Drive Tune Up ™".

Note:

- "Desk Drive Tune Up ™" supports all kind of MO media (4.1GB, 4.8GB, 5.2GB), but some others format utility software do not support 4.8GB or 5.2GB media. Please confirm the proper media before using the device driver. If you have any question, please contact your dealer of the device driver.

- Windows95/98 does not support WORM media.

- Before rebooting a host PC, please don't replace other media of a different sector size.

Installation Procedure on Windows NT

Requirement:

1. SCSI host adapter

SCSI host adapter controls the command and data transfer between MO drive and host computer. (Ex. AHA-2940, AHA-3940)

2. Device driver

Device driver controls MO drive. Windows NT includes a Device Driver. If you use RMO-S551, we recommend using the "Desk Drive Tune Up ™" is supplied with RMO-S551.

3. SCSI cable

SCSI cable is used for connecting host adapter and MO drive. Please select proper SCSI cable.

4. Format Utility software

Format utility software enables format and partition on the media. Format utility is often supplied with SCSI host adapter (e.g. ASPI manager and ASPI driver for AHA-29xx are provided from Adaptec). If you use RMO-S551, we recommend using the "Disk Drive Tune UP ™".

Installation:

1) Connection

- Set the SCSI host adapter into the host computer.
- Attach the MO drive using proper SCSI cable.
- Set proper SCSI ID and termination on the MO drive.

2) Windows Native support

2)-1 Preparation

- Turn on the drive and insert the media.
- Turn on the power of the host system and boot Windows NT.
- Let it Auto configure the hardware.

2)-2 Format the media and partition

a) Click the Start button and point to Program "Administrative Tools".
Click on Disk Administrator

- Verify to write signature to the media.
- Highlight the drive icon to be partitioned.

(Only one partition is available with removal media)

- Click on File, then Create Partition
- Choose partition parameters and click OK.
- Close Disk Administrator.... save changes when asked.

b) Click on Disk Administrator again
- Highlight the partitioned drive icon.
- Click on Tools, and then Format.
Choose format type and volume label name.
- Format the media.
- Close Disk Administrator.

3) Install the device driver

3)-1 Preparation
- Login Windows NT
- Install the device driver on Windows NT and reboot the host computer. (Please refer to the user's guide of the Device Driver)

3)-2 Format the media and partition
- Format and Label the media using format utility software, such as "Desk Drive Tune Up ™".

Note:
- There are two format types that Disk Administrator supports.
    1) FAT: allows media to be removed easily.
    2) NTFS: 'locks' the media into the drive.

- "Desk Drive Tune Up ™" supports only FAT16 file system and UDF file system. If you want to use NTFS file system, please use disk administrator after login as administrator. "Desk Drive Tune Up ™" supports all kind of MO media (4.1GB, 4.8GB, 5.2GB), but some others format utility software do not support Please confirm the proper media before using the device driver. If you have any question, please contact your dealer of the device driver.

- Windows NT does not support WORM media.
- Before rebooting a host PC, please don't replace other media of a different sector size.

Installation Procedure on Windows2000/XP

Requirement:

1. SCSI host adapter

SCSI host adapter controls the command and data transfer between MO drive and host computer. (Ex. AHA-2940, AHA-3940)

2. Device driver

Device driver controls MO drive. Windows2000/XP includes the Device Driver as a default setting. If you use RMO-S561, we recommend using the "Disk Drive Tune UP ™", bundled with RMO-S561.

3. SCSI cable

SCSI cable is used for connecting host adapter and MO drive. Please select proper SCSI cable.

4. Format Utility software

Format utility software enables format and partition on the media. Format utility is often supplied with SCSI host adapter (e.g. ASPI manager and ASPI driver for AHA-29xx are provided from Adaptec). If you use RMO-S551, we recommend using the "Disk Drive Tune UP ™".

Installation:

1) Connection

- Set the SCSI host adapter into the host computer.
- Attach the MO drive using proper SCSI cable.
- Set proper SCSI ID and termination on the MO drive.

2) Windows Native support

2)-1 Preparation

- Turn on the drive and insert the media.
- Turn on the power of the host system and boot Windows2000/XP.
- Let it Auto configure the hardware.

2)-2 Format the media

Right-click the My computer icon on the Windows desktop, and crick "Manage".
Click the Disk management.

- Right-click Removable drive icon, and click Format

Choose format type and make volume label name.

- Format the media.

-Close Disk management.

2)-3 Create partition on the media

Windows2000/XP does not create partitions on removable media devices. If you want to create partitions, we recommend using the "Disk Drive Tune UP ™".

3) Install the device driver

3)-1 Preparation

- Login Windows2000/XP as administrator.
- Install the device driver on Windows2000/XP and reboot the host computer. (Please refer to the user's guide of the Device Driver)

3)-2 Format the media and partition

- Format and make partition on the media by using format utility software, such as "Desk Drive Tune Up ™".

Note:

- There are two format types that Disk Administrator of Windows2000/XP supports.
    1) FAT16/32: allows media to be removed easily.
    2) NTFS: 'locks' the media into the drive.

- "Desk Drive Tune Up ™" supports only FAT16 / 32 file system and UDF file system. If you want to use NTFS file system, please use disk administrator after login as administrator. "Desk Drive Tune Up ™" supports all kind of MO media (4.1GB, 4.8GB, 5.2GB), but some others format utility software do not support Please confirm the proper media before using the device driver. If you have any question, please contact your dealer of the device driver.

- Windows2000/XP does not support WORM media.

- Before rebooting a host PC, please don't replace other media of a different sector size.

Installation Procedure on SUN System Ⅰ

Test equipment:

The following procedure was confirmed with the following system and drive combination:

Host:	SUN SPARC station 5
OS:	Solaris 2.3, 2.4, 2.5.1, 2.6, 7,
Target:	RMO-S551 - device type is set to 0 - 512 byte/sector media is used.

Since the SCSI driver “sd” which comes with the SUN’s UNIX system is as for device type 0 (see page 13-14 for setting), the cases with device type 7 or 1024 bytes/sector media are not supported.

Installation:

1) Connection

- Set the SCSI host adapter into the host computer using proper SCSI cable.
- Set proper SCSI ID on the MO drive.
- Set proper termination.
- Set the Device Type 0.

2) Login

- Turn on the MO drive and the host computer.
- Login as root or be a super user with “su” command.

3) Format and partition

To make a disk accessible, perform the following three command:

- ‘format’: using to format media.
- ‘newfs’: using to make file system.
- ‘mount’: using to mount media.

Create a ‘format.dat’ file prior to issuing the ‘format’ command

4) Edit “format.dat” file

- add following configuration to the “format.dat”.

```
#
# This is a list of sample Sony 5.25 inch MO disk configurations.
#
disk_type = "ISO 4X MO disk, 1150MB" ¥
        : ctlr = SCSI : fmt_time = 2 ¥
        : ncyl = 2261 : acyl = 2 : pcyl = 2263 : nhead = 32 : nsect = 31¥
        : rpm = 3600 : bpt = 15872
disk_type = "ISO 8X MO disk, 2035MB" ¥
```

```
        : ctlr = SCSI : fmt_time = 2 ¥
        : ncyl = 4004 : acyl = 2 : pcyl = 4006 : nhead = 32 : nsect = 31 ¥
        : rpm = 3300 : bpt = 15872
#
# This is a list of sample partition tables for Sony 5.25 inch MO disk.
#
partition = "ISO 4X MO disk, 1150MB" ¥
        : disk = "ISO 4X MO disk, 1150MB" : ctlr = SCSI ¥
        : 0 = 0 , 0 : 1 = 0, 0 : 2 = 0, 2242912 :
partition = "ISO 8X MO disk, 2035MB" ¥
        : disk = "ISO 8X MO disk, 2035MB" : ctlr = SCSI ¥
        : 0 = 0 , 0 : 1 = 0, 0 : 2 = 0, 3970976 :
```

Note:

- SUN System supports only 512 byte/sector MO media as its native support; you can use 2.3GB and 4.1GB media. If you would like using 1024 byte/sector or 2048 byte/sector media, please use proper device driver software for SUN system.

Installation Procedure on SUN System Ⅱ

Test equipment:

The following procedure was confirmed with the following system and drive combination:

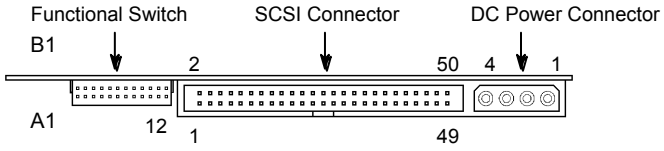
Host:	SUN ULTRA SPARC 30
OS:	Solaris 8, 9
Target:	SMO-F551 - Device type is set to 0 - 512 byte/sector media is used.

Installation:

1) Setting the MO drive

- Set the SCSI host adapter into the host computer using proper SCSI cable.
- Set proper SCSI ID on the MO drive. (This example case ID is set 4)
- Set proper termination.
- Set the Device Type 0. (Enable auto configuration for format.)

Rear Panel



Functional Switch Connector Pin Assignments

A1	SCSI ID2	B1	GND
A2	SCSI ID1	B2	GND
A3	SCSI ID0	B3	GND
A4	Disable SCSI Parity	B4	GND
A5	Disable Write Cache	B5	Reserved
A6	Disable Auto Spin-up	B6	Reserved
A7	Force Verify for Write command	B7	Reserved
A8	Disable Manual Eject	B8	Reserved
A9	Enable Ultra SCSI	B9	Reserved
A10	**Device Type**	**B10**	**Reserved**
A11	Enable Termination	B11	GND
A12	Terminator Power	B12	Terminator Power Source

SCSI ID Setting

SCSI ID	Connector Pin		
	A1/B1	A2/B2	A3/B3
0	OFF	OFF	OFF
1	OFF	OFF	ON
2	OFF	ON	OFF
3	OFF	ON	ON
4	ON	OFF	OFF
5	ON	OFF	ON
6	ON	ON	OFF
7	ON	ON	ON

2) Automatically Configure the MO Drive

1. Become superuser or equivalent role.

2. Create the /reconfigure file that will be read when the system is booted.
 # touch /reconfigure

3. Shut down the system.
 # shutdown -i0 -gn -y
-in Brings the system down to init level 0, the power-down state.

-g30 Notifies logged-in users that they have n seconds before the system begins to shut down.

-y Specifies that the command should run without user intervention.

The **ok** prompt is displayed after the system is shut down.

4. Turn off the power to the system and all external peripheral devices.

5. Make sure that the disk you are adding has a different target number than the other devices on the system.
(This example case ID is set 4)

6. Turn on the power to the MO drive.

7. Turn on the power to the system.
The system boots and displays the login prompt.

8. Log back in as superuser or assume an equivalent role.

3) Format and allocate slices on the media

1.Stop Volume Management ＊1 (two methods A and B are available)

A Stop volume management temporary.

a. Become superuser.
b. Enter the volmgt stop command.
 # /etc/init.d/volmgt stop

B Access MO drive, Jaz, and Zip drives without using volume management permanently.

Comment the following line in the **/etc/vold.conf** file by inserting a pound (#) sign at the beginning of the text, like this:
use rmdisk drive /dev/rdsk/c*s2 dev_rmdisk.so rmdisk%d

Note; method A is recommended

＊1, volume manager (vold) actively manages all removable media devices since the Solaris 8 6/00 release.
(For more information on removable media with volume management, see “chapter 17 Managing Removable Media” in System Administration Guide Basic Administration.)
However, there are some restrictions on volume management in case of using MO drive as follows;
Cannot execute format command unless stop volume management.
Cannot make file system on the media unless stop volume management.

2. Format the Media

a) Invoke the format utility with option -e ＊2

 # format -e

b) Select the disk that you want to configure automatically.

＊2 format option –e: enable SCSI expert menu. Removal media devices are listed only when users execute format in expert mode. This option is not recommended for casual use.

Warring – Do not use the format window that comes from file manager automatically, when the unformatted media is inserted before volume management shutdown.

Caution – Be sure you have specified the correct device name before performing this step.

Example—Formatting a Disk

The following example shows how to format the disk c0t2d0.

```
---------------------------------------------------------------------------------------------------------------------
AVAILABLE DISK SELECTIONS:
       0. c0t0d0 <SUN4.2G cyl 3880 alt 2 hd 16 sec 135>
          /pci@1f,4000/scsi@3/sd@0,0
       1. c0t2d0 <SONY-SMO-F551-1.20 cyl 4004 alt 2 hd 32 sec 31>
          /pci@1f,4000/scsi@3/sd@2,0
Specify disk (enter its number): 1
AVAILABLE DRIVE TYPES:
        0. Auto configure
        1. Quantum ProDrive 80S
        2. Quantum ProDrive 105S
                  |
       18. SUN4.2G
       19. other
Specify disk type (enter its number): 0   *3
Auto configuration via format.dat[no]? n
Auto configuration via generic SCSI-2[no]? y
c0t2d0: configured with capacity of 1.89GB
<SONY-SMO-F551-1.20 cyl 4004 alt 2 hd 32 sec 31>
selecting c0t2d0
[disk formatted]
---------------------------------------------------------------------------------------------------------------------
```

＊3 SCSI-2 drives do not require a format.dat entry. The format utility automatically configures the SCSI-2 drivers if the drives are powered on during a reconfiguration boot.

3. Create the appropriate disk slices.

c) Select the partition menu.

format > partition

d) Display the slice information for the current disk drive.

partition > print

e) Divide the media into slices. ＊4

Select the partition table you want to modify, and re-create slices.

＊4 Because volume management's format utility allocates 2 slices such as slice 0 and slice 2 on the new removal media before format slice 0 as a default setting, if you want to use the volume management to mount and access the media automatically after created file system on the MO media, the following sample slice form is recommended.

Sample-slices form for MO media.

Part	Tag	Flag	Cylinders	Size	Blocks
0	root	wm	0 - 4003	1.89GB	(4004/0/0) 3971968
1	unassigned	wu	0	0	(0/0/0) 0
2	backup	wu	0 - 4003	1.89GB	(4004/0/0) 3971968
3	unassigned	wm	0	0	(0/0/0) 0
4	unassigned	wm	0	0	(0/0/0) 0
5	unassigned	wm	0	0	(0/0/0) 0
6	unassigned	wm	0	0	(0/0/0) 0
7	unassigned	wm	0	0	(0/0/0) 0

4. Label the media and exit the format menu.

f) Label the media with the new partition table after you have finished allocating slices on the new media.

partition > label
Ready to label disk, continue? Yes

g) Quit the partition menu.

partition> quit

h) Verify the disk label.

format> verify

i) Exit the format menu.

format> quit

4) Create a File System

a) Create a UFS File System

1. If you are re-creating an existing UFS file system, unmount it.

2. Create the UFS file system.

 # newfs [-N] [-b size] [-i bytes] **/dev/rdsk/device-name**

-b ---- size Specifies the block size for the file system, either 4096 or 8192 bytes per block. The default is 8192.

-I ----- bytes Specifies the number of bytes per inode. The default varies depending on the disk size.

Caution – Be sure you have specified the correct device name for the slice before performing this step.

Example—Creating a UFS File System

The following example shows how to create a UFS file system on /dev/rdsk/c0t2d0s0.

```
# newfs /dev/dsk/c0t2d0s0
newfs: /dev/rdsk/c0t2d0s0 last mounted as /rmdisk/unnamed_rmdisk
newfs: construct a new file system /dev/rdsk/c0t2d0s0: (y/n)? y
/dev/rdsk/c0t2d0s0:        3971968 sectors in 4004 cylinders of 32 tracks, 31 sectors
          1939.4MB in 126 cyl groups (32 c/g, 15.50MB/g, 3840 i/g)
super-block backups (for fsck -F ufs -o b=#) at:
 32, 31808, 63584, 95360, 127136, 158912, 190688, 222464, 254240, 286016,
 317792, 349568, 381344, 413120, 444896, 476672, 508448, 540224, 572000,
 603776, 635552, 667328, 699104, 730880, 762656, 794432, 826208, 857984,
 889760, 921536, 953312, 985088, 1015840, 1047616, 1079392, 1111168, 1142944,
 1174720, 1206496, 1238272, 1270048, 1301824, 1333600, 1365376, 1397152,
 1428928, 1460704, 1492480, 1524256, 1556032, 1587808, 1619584, 1651360,
 1683136, 1714912, 1746688, 1778464, 1810240, 1842016, 1873792, 1905568,
 1937344, 1969120, 2000896, 2031648, 2063424, 2095200, 2126976, 2158752,
 2190528, 2222304, 2254080, 2285856, 2317632, 2349408, 2381184, 2412960,
 2444736, 2476512, 2508288, 2540064, 2571840, 2603616, 2635392, 2667168,
 2698944, 2730720, 2762496, 2794272, 2826048, 2857824, 2889600, 2921376,
 2953152, 2984928, 3016704, 3047456, 3079232, 3111008, 3142784, 3174560,
 3206336, 3238112, 3269888, 3301664, 3333440, 3365216, 3396992, 3428768,
 3460544, 3492320, 3524096, 3555872, 3587648, 3619424, 3651200, 3682976,
 3714752, 3746528, 3778304, 3810080, 3841856, 3873632, 3905408, 3937184,
 3968960,
#
```

b) Create a UDF File System

1. If you are re-creating an existing UFS file system, unmount it.

2. Create the UFS file system.
 # mkfs -F udfs device-name

Example—Creating a UDF File System

The following example shows how to create a UDF file system on /dev/rdsk/c0t2d0s0.

```
# mkfs -F udfs /dev/rdsk/c0t2d0s0
```

c) Create a PCFS File System

1. Create a PCFS file system with fdisk partition is recommended.
 # fdisk /dev/rdsk/device-name
 # mkfs -F pcfs /dev/rdsk /device-name

Note; using Windows system to make FAT system on the media is strongly recommended, since this step requires specific information that we can't figure it out yet.

5) Mount a File System

After any file system created on the media, MO drive can take advantage of the volume management improvements as follows;

- mounting removable media automatically.
- It enables you to access removable media without having to become superuser.
- It allows you to give other systems on the network automatic access to any removable media on your local system

You can choose between manual mounting (without volume management) and automatic mounting (with volume management) of the media.

A) Manual Mounting

1. Create a mount point for the file system to be mounted, if necessary.
 # mkdir /mount-point
There must be a mount point on the local system to mount a file system. A mount

point is a directory to which the mounted file system is attached.

2. Mount the file system.
mount [-o mount-options] **/dev/dsk/device-name /mount-point**
-o mount-options Specifies mount options that you can use to mount a UFS file system. Or /dev/dsk/device-name Specifies the disk device name for the slice that contains the file system (for example, /dev/dsk/c0t2d0s0).

Example—Mounting a UFS File System (mount Command)

The following example shows how to mount /dev/dsk/c0t2d0s0 on the /files1 directory.

---

mount /dev/dsk/c0t2d0s0 /files1

Unmount the file system

 # umount /mount-point

B) Automatic Mounting

1. Restart Volume Management (vold)

1. Enter the volmgt start command.
 # /etc/init.d/volmgt start
volume management starting.

2. Volume manager (vold) automatically mounting the media after a few seconds.

2. Access Information on the Media by using the File Manager or using following commands.

1. List the contents of the media to confirm the media is mounted
#ls /rmdisk

2. Access File Systems with the path of
 # /rmdisk/rmdiskn.

Or access the raw data with the path of
 # /vol/dev/aliases/rmdiskn

Note; This means any attempt to access removable media with device names such as /dev/rdsk/cntndnsn or /dev/dsk/cntndnsn will be unsuccessful.

3. Eject Removable Media

1. Make sure the media is not being used.
Remember, media is “being used” if a shell or an application is accessing any of its files or directories.

2. Eject the media.
 # eject rmdisk

Note:

- SUN System supports only 512 byte/sector MO media; you can use 2.3GB and 4.1GB media. If you would like using 1024 byte/sector or 2048 byte/sector media, please use proper device driver software for SUN system.

Installation Procedure on Silicon Graphics Systems

Test equipment:

The following procedure was confirmed with the following system and drive combination:

Host:	SGI O2 R5000, R10000
OS:	IRIX6.3
Target:	RMO-S551

Installation:

1) Connection

- Attach the drive to the host using a proper SCSI cable.
- Set proper SCSI ID on the MO drive. (In this case, SCSI ID = 4)
- Set proper termination.

Note: The SCSI ID number should be unique for each SCSI devices. The “hinv” command in the maintenance mode of the SGI workstation is useful to determine SCSI ID numbers.

2) Login

- Turn on the MO drive and host computer.
- Log in as root.
- Confirm the connection of MO drive and UNIX Workstation using following command.

```
Port2# #hinv –c scsi
Optical disk : unit 4 on SCSI controller 1
```

3) Media Initialization

- Launch the Unix Shell and insert a cartridge into the drive
- Enter “fx-x” at the Unix Shell prompt

Format the media using following commands.

port0 3# fx -x [enter]
fx version 6.3, July xx, 1998
fx: “device name“ = (dksc) **[enter]**
fx: ctlr# = (0) **1 [enter]**
fx: drive# = (1) **4 [enter]**
. . . opening dksc(1,4)
. . . controller test. . . OK
.
.

.
.

----- please choose one (? for help, .. to quit this menu)-----
[exi]t [d]ebug/ [l]abel/ [a]uto
[b]adblock/ [exe]rcise/ [r]epartition/ [f]ormat
fx> **f**
fx/format: drive parameter to usr in formatting = (current) **[enter]**
*********WARNING*********
about to destroy data on disk dksc(1,4)! Ok? **Yes [enter]**

.
.

4) Repartition the media

Repartition the media from “root drive” to “option drive” using following commands.

----- please choose one (? for help, .. to quit this menu)-----
[exi]t [d]ebug/ [l]abel/ [a]uto
[b]adblock/ [exe]rcise/ [r]epartition/ [f]ormat
fx> **r [enter]**

----- partitions-----

part	type	cyls	blocks	Megabytes (base+size)
0:	xfs	6 + 7243	3072 + 3708416	1 + 1811
1:	raw	7249 + 512	3711488 + 262144	1812 + 128
8:	volhdr	0 + 6	0 + 3072	0 + 1
10:	volume	0 + 7761	0 + 3973632	0 + 1940

capacity is 3973952 blocks

----- please choose one (? for help, .. to quit this menu)-----
[ro]otdrive [o]ptiondrive [e]xpert
[u]srrootdrive [re]size
fx/repartition> **o [enter]**

fx/repartition/optiondrive: type of data partition = (xfs) **[enter]**
fx/repartition/optiondrive: create usr log partition? = (yes) **[enter]**

Warning: You will need to re-install all software and restore user data from backups after changing the partition layout.
Changing partitions will cause all data on the drive to be lost.
Be sure you have the drive backed up if it contains any user data.
Continue? **Yes [enter]**
Can't get drive geometry, assuming 64 sectors/track
Can't get drive geometry, assuming 8 heads
Unable to get device geometry, assuming default

```
----- partitions-----
part type cyls            blocks                  Megabytes (base+size)
  7: xfs      6 + 7738    3072 + 3961856          1 + 1934
  8: volhd0 + 6           0 + 3072                0 + 1
  10: volume  0 + 7761    0 + 3973632             0 + 1940
  15:xfslog   7744+17     3964928 + 8704          1936 + 4
capacity is 3973952 blocks

----- please choose one (? for help, .. to quit this menu)-----
[ro]otdrive       [o]ptiondrive     [e]xpert
[u]srrootdrive    [re]size
fx/repartition> ..
```

5) Confirm the partition

Confirm the partition using following commands.

```
----- please choose one (? for help, .. to quit this menu)-----
[exi]t            [d]ebug/          [l]abel/          [a]uto
[b]adblock/       [exe]rcise/       [r]epartition/    [f]ormat
fx> l [enter]

----- please choose one (? for help, .. to quit this menu)-----
[sh]ow/           [sy]nc            [se]t/            [c]reate/
fx/label> sh [enter]

----- please choose one (? for help, .. to quit this menu)-----
[para]meters      [part]itions      [b]ootinfo        [a]ll
[g]eometry        [s]giinfo         [d]irectory
fx/label/show> para [enter]

----- please choose one (? for help, .. to quit this menu)-----
[para]meters      [part]itions      [b]ootinfo        [a]ll
[g]eometry        [s]giinfo         [d]irectory
fx/label/show> part [enter]

----- partitions-----
part type cyls            blocks                  Megabytes (base+size)
  7: xfs      6 + 7738    3072 + 3961856          1 + 1934
  8: volhd0 + 6           0 + 3072                0 + 1
  10: volume  0 + 7761    0 + 3973632             0 + 1940
  15:xfslog   7744+17     3964928 + 8704          1936 + 4
```

```
---- please choose one (? for help, .. to quit this menu)-----
[para]meters     [part]itions     [b]ootinfo     [a]ll
[g]eometry       [s]giinfo        [d]irectory
fx/label/show> .. [enter]

----- please choose one (? for help, .. to quit this menu)-----
[sh]ow/          [sy]nc           [se]t/         [c]reate/
fx/label> .. [enter]

----- please choose one (? for help, .. to quit this menu)-----
[exi]t           [d]ebug/         [l]abel/       [a]uto
[b]adblock/      [exe]rcise/      [r]epartition/ [f]ormat
fx> exit [enter]
```

6) Make a file system

Make a file system using following command.

```
port0 7# mkfs /dev/rdsk/dks1d4s7 [enter]
meta-data=/dev/rdsk/dks1d4s7     isize=256      agcount=8, agsize=61904 blks
data     =                       bsize=4096     blocks=495232, imaxpct=25
log      =internal log           bsize=4096     blocks=1000
realtime =none                   extsz=65536    blocks=0, rtextents=0
```

7) Mount the media

Mount the media and confirm the result.

(**# mkdir /mo [enter]** ← creat mount point)

```
port0 8# mount /dev/dsk/dks1d4s7 /mo [enter]
port0 9# df /mo [enter]
File system              Type    blocks    use    avail    %use    Mounted on
/dev/dsk/dks1d4s0        xfs     3700416   288    3700128  1       /mo
```

Note:

As O2 supports only 512 Byte/sector MO media, you can use 2.3GB and 4.1GB MO media.

Installation Procedure on HP Systems

Test equipment:

The following procedure was confirmed with the following system and drive combination:

UNIX Workstation:	HP9000/712
OS:	HP-UX A.09.07
Target:	SMO-F551

Installation:

1) Connection

- Connect MO drive and UNIX Workstation using proper SCSI cable.
- Set proper SCSI ID on the MO drive. (In this case, SCSI ID = 4)
- Set proper termination.

Note: The 'ioscan' command is useful to scan SCSI bus.

 # ioscan -fc disk [enter]

2) Login

- Turn on the MO drive and the host computer, and insert a cartridge into the drive.
- Login as root.
- Confirm the connection of MO drive and UNIX Workstation using following command.

 # diskinfo –v /dev /rdisk/c201d4s0 [Enter]

SCSI describe of /dev/rdsk/c201d4s0 *[4.1GB(4.8GB, 5.2GB)]

Vendor	: SONY
product id	: SMO-F551
type	: optical memory
size	: 1986976 Kbytes (2319786, 2526944)
bytes per sector	: 512(1024, 2048)
rev level	: 1.08
blocks per disk	: 3973952 (2319786, 1263472)
ISO version	: 0
ECMA version	: 0
ANSI version	: 2
removable media	: yes
response format	: 2

If the workstation return an error "diskinfo : can't open /dev/rdsk/c201d1s0", MO drive is not connected with UNIX workstation correctly. You should shut down the system and check the SCSI cable and SCSI terminator.

3) Edit “disktab” file

- Edit or add /etc/disktab file as following.

```
################################################
# Sony Magneto-Optical Media
################################################
SONY_MO_8X_2048:¥
        :No swap or boot:ns#39:nt#16:nc#3997:¥
        :s0#2494170:b0#8192:f0#2048:¥
        :se#2048:rm#3300:
SONY_MO_8X_1024:¥
        :No swap or boot:ns#39:nt#16:nc#3671:¥
        :s0#2290750:b0#8192:f0#1024:¥
        :se#1024:rm#3300:
SONY_MO_8X_512:¥
        :No swap or boot:ns#39:nt#16:nc#3131:¥
        :s0#1954200:b0#8192:f0#1024:¥
        :se#512:rm#3300:
```

4) Format Media

- Format the media using following command. You must execute this command only one time when you use the media first time.

 # mediainit –v /dev/rdsk/c201d0s0 [Enter]

It takes about 45 minutes.

5) Create a file system

- Create a file system using following command.

 # newfs /dev/rdsk/c201d1s0 *Media_type* [Enter]

Media type : Please input proper sentence (refer disktab, ex SONY_MO_8X_512)

6) Mount the media

- Mount the media using following commands.

 # mkdir /mo [Enter]
 # mount /dev/dsk/c201d1s0 /mo [Enter]

7) Confirm the result of mount command

- Confirm the result of mount command using following command.

 # bdf /mo [Enter]

(ex.4.1GB)

Filesystem	kbytes	used	avail	capacity		Mounted on
/dev/dsk/c201d4s0	1900868		9	1710772	0%	/mo

(ex.4.8GB)

Filesystem	kbytes	used	avail	capacity		Mounted on
/dev/dsk/c201d4s0	2228170		9	2005344	0%	/mo

(ex.5.2GB)

Filesystem	kbytes	used	avail	capacity		Mounted on
/dev/dsk/c201d4s0	2426150		10	2183524	0%	/mo

Note:

- You can not use GUI tool to format and mount the media. Please use shell commands.

Appendix: Edit or add /etc/disktab file for 4XMO disk

```
##################################################
# Sony Magneto-Optical Media
##################################################
SONY_MO_4X_1024:¥
        :No swap or boot:ns#39:nt#16:nc#1988:¥
        :s0#1240240:b0#8192:f0#1024:¥
        :se#1024:rm#3600:
SONY_MO_4X_512:¥
        :No swap or boot:ns#39:nt#16:nc#1773:¥
        :s0#1106088:b0#8192:f0#1024:¥
        :se#512:rm#3600:
```

Installation Procedure on SCO Systems

Test equipment:

The following procedure was confirmed with the following system and drive combination:

Host:	PC-UNIX_SCO
OS:	UnixWare 2.1, UnixWare 7
Target:	RMO-S551

Installation:

1) Hardware Installation

- Attach the drive to the system using a SCSI cable.
- Set proper SCSI ID and termination.
- Set proper Functional Switch.

  Note: Device type; Direct Memory Access Device Placing a jumper socket over the desired pair of pins A10/B10 turn "Direct Memory Access Device" function ON. (Please refer to Page 17-20 of Technical Guide for SMO-F551.)
- Turn on the drive and insert the media.

2) Turn on the power of the host system

3) Using "diskadd" command to mount the disk on the system

Note: The "diskadd" command is the type of conversation command. So it asks you some questions of to need the information under operation. Please refer to the online manual of UNIX_SCO on detail.

4) To unmount disk on the system

Note: It needs to operate the "unmount " before the eject of MO media.

Appendix:

Table1. Windows support

OS	DOS Win3.1/95	Win 95 98/ME	Windows NT	Windows 2000/XP	Windows 2000/XP
Format file system	FAT16	FAT 16 / 32	FAT16/ NTFS	FAT16 / 32	NTFS
4.1 GB media 512 Byte/sector	yes	yes	yes	yes	yes
4.8 GB media 1024 Byte/sector	yes	yes	yes	yes	yes
5.2GB media 2048 Byte/sector	yes	yes	yes	yes	yes

Table2. Unix support

OS	SGI Systems	HP Systems	SCO Systems
4.1GB media	O	O	O
4.8GB media	X	O	X
5.2GB media	X	O	X

Table3. Solaris support

Solaris OS	2.5.1	2.6	7	8	9
4.1 GB media 512 Byte/sector	yes	yes	yes	yes	yes
4.8 GB media 1024 Byte/sector	×	×	×	×	×
5.2GB media 2048 Byte/sector	×	×	×	×	×

Table4. Media information

Capacity	Product Name	Sector Size
4.1GB	EDM-4100	512 Byte/sector
4.8GB	EDM-4800	1024 Byte/sector
5.2GB	EDM-5200	2048 Byte/sector