SONY

SMO-F561 / RMO-S561

Magneto-Optical
Disk Drive

Installation Guide   **1.0**

Contents

Printing History

        September 14, 2001   **Version 1.0**

Note:

SMO-F561 / RMO-S561 support many kind of MO media, but all kind of MO media cannot be used in each Operation System. Please choose suitable MO media in accordance with supported media table.

Installation Procedure on Windows98/ME

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) Windows98/ME supports most of SCSI host adapters.

2. Device driver
Device driver controls MO drive. Windows98/ME encloses the device driver on installation CD-ROM or floppy disk. 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 is used to format the media and create partitions. Format utility software is often supplied with SCSI host adapter. If you use RMO-S561, we recommend using the "Disk Drive Tune UP ™" bundled with RMO-S561.

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) No device driver
2)-1 Preparation
   - Turn on the drive and insert the media.
   - Turn on the power of the host system and boot Windows98/ME.

2)-2 To detect the connected hardware
   - Click the Start button, point to Setting, a system and boot Windows98/ME.
   - 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
   - Click the File menu, and click Format 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 Windows98/ME 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 with format utility software, such as "Disk Drive Tune UP ^{TM}".

Note:
 - Windows98/ME limits one partition size to 2.1GB; please make a partition under 2.1GB
 per partition.
 - Don't use floppy format for 8.6GB and 9.1GB Media, because the partition size is over
 2.1GB.
 - "Disk Drive Tune UP ^{TM}" supports all kind of MO media (8.6GB, 9.1GB), but some others
 format utility software or native Windows98/ME system does not support 9.1GB media.
 Please confirm the proper media before using the device driver. If you have any question,
 please contact your dealer of the device driver.
 - Windows98/ME does not support WORM media.
 - Before rebooting a host PC, please don't replace other media of a different sector size.

Installation Procedure on WindowsNT

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. WindowsNT include the Device Driver. If you use RMO-S561, we recommend using the "Disk Drive Tune UP ^{TM}" is 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 is used to format media and create partitions. Format utility is often supplied with SCSI host adapter. If you use RMO-S561, we recommend using the "Disk Drive Tune UP ^{TM}" bundled with RMO-S561.

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) No device driver
2)-1 Preparation
- Turn on the drive and insert the media.
- Turn on the power of the host system and boot WindowsNT.
- Let it Auto configure the hardware.

2)-2 Format the media and partition
a) Click the Start button, point to Program and click "Administrative Tools".
Click Disk Administrator
- Verify to write signature to the media.
- Highlight the drive to be partitioned.
- Click File, then Create Partition
- Choose partition parameters and click OK.
- Close Disk Administrator, and then click Yes to confirm.

b) Click Disk Administrator again
- Highlight the partitioned drive.
- Click Tool menu, and click Format.
Choose format type (see **Notes**) and volume label name.
- Format the media.
- Close Disk Administrator.

3) Install the device driver
3)-1 Preparation
- Login WindowsNT as administrator
- Install the device driver on WindowsNT 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 "Disk 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.
- "Disk Drive Tune UP ™" supports only FAT16, FAT32 and UDF file system. If you want to use NTFS file system, please use disk administrator after login as administrator.
- "Disk Drive Tune UP ™" supports all kind of MO media (8.6GB, 9.1GB), but some others format utility software do not support 8.6GB and 9.1GB media. Please confirm the proper media before using the device driver. If you have any question, please contact your dealer of the device driver.
- When you format 8.6GB or 9.1GB media with disk administrator, please select NTFS file system.
- WindowsNT 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

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 include the Device Driver. If you use RMO-S561, we recommend using the "Disk Drive Tune UP ^{TM}" is supplied 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 is used to format media and make partitions. Format utility is often supplied with SCSI host adapter. If you use RMO-S561, we recommend using the "Disk Drive Tune UP ^{TM}" bundled with RMO-S561.

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) No device driver
2)-1 Preparation
- Turn on the drive and insert the media.
- Turn on the power of the host system and boot Windows2000.
- 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 (see **Notes**) and volume label name.
- Format the media.
-   Close Disk management.
-
2)-3 Create partition on the media
Windows2000 does not support to create extended partitions on removable media devices. If you want to create petitions, we recommend using the "Disk Drive Tune UP ^{TM}".

3) Install the device driver
3)-1 Preparation
 - Login Windows2000 as administrator.
 - Install the device driver on Windows2000 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 "Disk Drive Tune UP ^{TM}".

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.
 - "Disk Drive Tune UP ^{TM}" supports only FAT16, FAT32 and UDF file system. If you want to use NTFS file system, please use disk administrator after login as administrator.
 - "Disk Drive Tune UP ^{TM}" supports all kind of MO media (8.6GB, 9.1GB), but some others format utility software do not support 8.6GB and 9.1GB media. While native Windows2000 system dose not support 9.1GB media. Please confirm the proper media before using the device driver. If you have any question, please contact your dealer of the device driver.
 - When you format 8.6GB media with disk administrator, please select NTFS file system.
 - Windows2000 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

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

    Host: SUN SPARC station 20
    OS: Solaris 2.5.1, 2.6, 2.7, 2.8,
    Target: RMO-S561
                                    - 512 byte/sector media is used.

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 7.

2) Login
-    Turn on the MO drive and the host computer.
-    Interrupting the boot process and run a Reconfiguration Boot with "boot-r" command.
-    Login as a super user.

3) Format and partition
To make a disk accessible, perform the following three command:
   - 'format': to format media.
   - 'newfs': to make file system.
   - 'mount': to mount media.

Note:
   - Solaris 2.51, 2.6, 2.7 supports only 512 byte/sector MO media while Solaris 2.8 dose not
   support 512, 1024, 2048, 4096 byte/sector media,

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, Indy
OS:	IRIX6.3 for O2, Irix 6.5f for Indy
Target:	RMO-S551

Installation:
1) Connection
- Attach the drive to the host using a proper SCSI cable.
- Set the Device Type 7.
- 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 with following command.

Port2# #hinv –c scsi
(Monitor display example) 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 with 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]
fx:   lun# = (0)
….. . opening dksc (1,4,0)
. . . 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" with 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: volhd       0 + 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 with 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: volhd       0 + 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 with 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]**   ←   create 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:
    Do not use eject button, eject is available even media is mounted if **mediad** has no set.
    SGI system supports only 512 Byte/sector MO media, 1024, 2048, 4096 Byte/sector are
    not available.

Installation Procedure on HP Systems

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

UNIX Workstation:	HP9000/778
OS:	HP-UX B.11.00
Target:	RMO-S561
Test Media	512k/sec (9.1GB), 1024k/sec (9.1GB), 2048 k/sec (8.6GB)
Peripheral Device type=7	

Installation:
1) Connection
 - Connect MO drive and UNIX Workstation using proper SCSI cable.
 - Set proper SCSI ID on the MO drive.
 - Set proper termination.

2) Login
 - Turn on the MO drive then the host computer, and insert a cartridge into the drive.
 - Login as root.

3) Start SAM
  # **sam &**

4) Double click Discs and File Systems

5) Double click Disc Device

6) Highlight MO drive from Disk Device list

7) Select "configure" from Action bar and select "Using The Logical Volume Manager"

8) Select "A New Volume Group" and click OK

9) Click New Volume Group Name

Follow these steps to set up.
 - Type New Volume Group Name and click OK
 - Modify Default Volume Group Options allows changing following items.
     Maximum Physical Extents
     Maximum Logical Volumes
     Maximum Physical Volumes
     Physical Extents Size
 - Make sure that MO drive is selected using Configure disk, and click OK.

- Set up following items with "Define New Logical Volumes#.
  LV Name
  LV size   (multi-partitions are available depends on setting)
  Mount directory
  FSType (VxFS, HFS)
  Access (Read/Write, Read only)
  When to mount (Now, Every System boots)
  VxFS option (Full Integrity for critical Metadata)
                   (Full Integrity for all Metadata)
  *Click Add to complete setting.

10) Click OK in the bottom left of the screen.

11) Exit "Define New Logical Volumes"and click Yes to save changes.

* After exit it shifts to mount immediately if "When to mount" is checked.

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Appendix

OS	Windows98/ME	WindowsNT	Windows2000	WindowsNT
8.6GB media	O	O	O	O
9.1 GB media	O*1	O*1	O*1	O*1

Table 1. Media support table-1

*1: with Disk Drive Tune Up

Capacity	Name	Sector Size
8.6GB	EDM-8600	2048 Byte/sector
9.1GB	EDM-9100	4096 Byte/sector

Table 2. Media information table