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# AM-402 SCSI CD-Recorder Installation Instructions

**FIRST EDITION:** September 1999

To re-order this document, request part number PDI-00402-00

**FCC Notice**

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 to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**Canadian Department of Communications Compliance Statement**

This equipment does not exceed Class A limits per radio noise emissions for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications. Operation in a residential area may cause unacceptable interference to radio and TV reception requiring the owner or operator to take whatever steps are necessary to correct the interference.

**Avis de Conformité aux Normes du Ministère des Communications du Canada**

Cet équipement ne dépasse pas les limites de Classe A d'émission de bruits radioélectriques pour les appareils numériques tels que prescrites par le Règlement sur le brouillage radioélectrique établi par le ministère des Communications du Canada. L'exploitation faite en milieu résidentiel peut entraîner le brouillage des réceptions radio et télé, ce qui obligerait le propriétaire ou l'opérateur à prendre les dispositions nécessaires pour en éliminer les causes.

**Battery Warning**

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

ATTENTION: Il y a danger d'explosion s'il y a un remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

For AM-6000 systems, replace batteries with Panasonic or Ray-O-Vac BR1225 only. Use of another battery may present a risk of fire or explosion. Replacement batteries may be ordered from your authorized Alpha Micro reseller.

**Electrical Warning**

This equipment contains components that can be damaged by static electricity. Follow all electronic discharge precautions when handling the equipment. For example, touch the metal back panel of the CPU or peripheral chassis to dissipate any electrical charge before touching the circuit boards or equipment within the chassis. After turning off power, before you open your computer chassis, unplug the cord from the electrical outlet to guard against electrical shock.

**SOFTWARE SECURITY DEVICE IDENTIFICATION NUMBER: \_\_\_\_\_**

The Alpha Micro Software Security Device (SSD) is a customized integrated circuit that personalizes the computer, providing identity verification for it. Certain Alpha Micro and non-Alpha Micro software may require that your computer contain an SSD in order to run software that has been customized to run only on your computer.

Please enter the identification of your SSD above. The SSD identification number should be on your computer ID label under "SSD Serial No." (Another way of finding the number is to look at the SSD itself. The SSD is located in an integrated circuit location on the CPU board; its identification number is printed on the SSD itself.) Software vendors may ask you for the SSD number if they are customizing software to run only on your computer.

This document may contain references to products covered under the following U.S. Patent Number(s): 4,530,048

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## INTRODUCTION

This document describes the installation of the AM-402 SCSI CD-Recorder into an existing Alpha Micro Computer System. The following prerequisites apply to the system:

- 68030 or faster processor required
- One half high 5-1/4" peripheral mounting slot (horizontal mounting only) in your system or subsystem
- Full interrupt enabled SCSI dispatcher
- DCACHE software (set the number of read-ahead blocks to 7)
- AMOS 2.3A or later operating system software

If you are installing an AM-402 SCSI CD-Recorder into an external subsystem, you will need to use the installation instructions shipped with the subsystem in conjunction with the AM-402 specific instructions in this document.

These instructions are written for the experienced Alpha Micro Service Technician, so if you do not feel comfortable performing the hardware and software procedures discussed below, please contact your Alpha Micro dealer or the Alpha Micro Technical Assistance Center for help.

## PRODUCT DESCRIPTION

The AM-402 SCSI CD-Recorder is a dual-function unit that writes to recordable CD media and reads any compatible CD-ROM. The CD-Recorder is a narrow SCSI device and occupies one 5.25" peripheral device bay in the system or subsystem. Up to 600 megabytes of data can be stored on a single CD-ROM.

The AM-402 SCSI CD-Recorder requires the AlphaCD-WRITER software package, which includes a software utility called MAKACD. This software must be purchased separately and is PIC-coded on a per system basis. Details on the software are included in the MAKACD command reference document, which is attached to this document and is also included in the AMOS System Command Reference Manual, part number DSO-00043-00, Rev 10.

## TOOLS REQUIRED

For most installations, the only tool you will need to install the AM-402 SCSI CD-Recorder is a #2 Phillips-head screwdriver.

## PREPARING THE AM-402 FOR INSTALLATION

First, you need to select the SCSI ID for the CD-Recorder by setting the proper jumpers on the back of the CD-Recorder. Since this device supports only a narrow SCSI bus, you have seven SCSI IDs to choose from (0 through 6). Don't worry if you have a gap in your device addressing; AMOS doesn't require that each device be defined in sequence.



If you have a CD player in your system, the ACD command used for reading AMOS CDs looks for the CD player or recorder with the highest SCSI address. If you still want to read from that CD player, make sure that you select a SCSI ID for the AM-402 which is less than that used by the CD player.



While the Wide SCSI-2 bus supports IDs up to 15, the AM-402 is a narrow SCSI device. You cannot set one to an ID higher than 6, even if it is attached to the Wide SCSI-2 bus with an adapter.

Figure 1 shows how the AM-402 is addressed, on-board SCSI terminator enable control location, and the location of the 50-pin SCSI drive connector and 4-pin power connector. For the majority of installations, the SCSI ID jumpers are the only jumpers you should need to change to suit your particular system configuration. See Figure 1 for standard jumper settings.

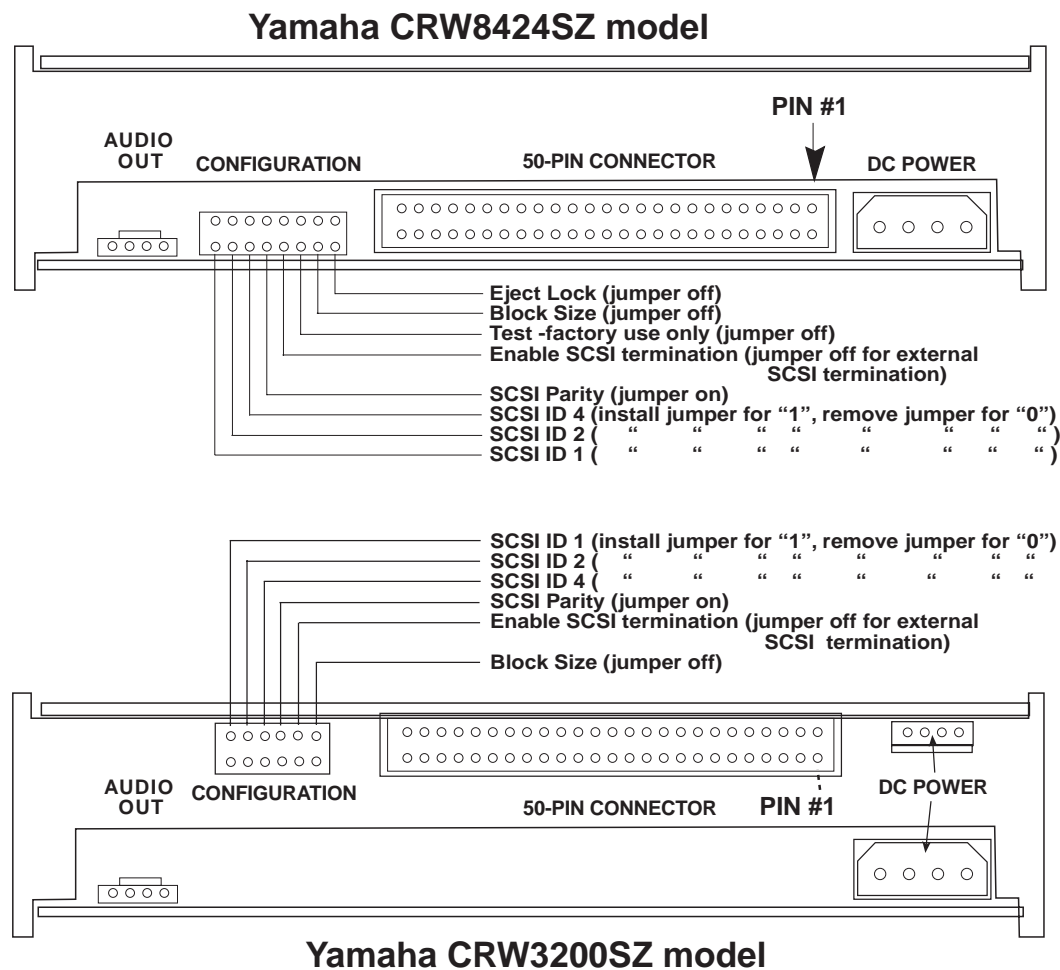


Figure 1 - AM-402 CD-Recorder (Rear View)

## SCSI BUS TERMINATION

To function properly, the SCSI bus on your computer must be terminated at each end. The SCSI controller terminates one end of the bus; the opposite end of the bus can be terminated in one of two ways: 1) using the preferred method—an external terminator, or 2) installing on-board terminators in the peripheral that's *at the other end of the SCSI cable*. You should use method 2 only if, for some reason, you cannot use an external terminator.

### External SCSI Bus Termination

The preferred way to terminate the SCSI bus in an AMOS computer is to install an external terminator. Using an external terminator makes it easier to install an add-on subsystem (like a portable CD-ROM drive), eliminating the need to remove terminators from a SCSI device inside the computer.

Several different external terminators are available from Alpha Micro:

Part Number	Terminator Type
PRA-00222-00	Narrow, passive
PRA-00222-21	Narrow, active
PRA-00222-20	Wide, active

The type of terminator you need depends on your computer and the SCSI peripherals in it. The AM-402 CD-Recorder should function correctly with a passive SCSI terminator. However, the Eagle 250, 450, AM-6000, AM-7000, and Roadrunner 040 and 060-equipped computers require active termination, as do certain other peripheral devices. Generally, if either the computer *or* any peripheral in it requires active termination, be sure to use an active terminator, and insure that no SCSI peripheral inside the computer is terminated.

### Internal SCSI Bus Termination

If you are not using external SCSI termination, you may terminate the SCSI bus by enabling the termination resistors on the last SCSI device—the one farthest away from the SCSI controller. For best termination and most reliable SCSI performance, *this device should be at the actual physical end of the SCSI cable*. If the SCSI cable extends beyond the device which provides termination, even if there are no more devices attached, termination will not be as reliable as it would be if the actual end of the cable was terminated. Because of their higher performance, newer computers, such as the AM-6000, are more sensitive to termination issues than earlier ones.



Be sure that *only the last SCSI device* has its on-board termination enabled. If more than one device on the SCSI bus has its termination enabled, your system will probably perform erratically! This is true whether the last device is in the computer chassis or in a separate subsystem chassis.

## INSTALLING THE AM-402 CD-RECORDER INTO THE SYSTEM

The AM-402 CD-Recorder can be installed in an external subsystem chassis, Eagle deskside chassis, or AM-990 system cabinet. Complete instructions for physically installing SCSI peripherals are included in the computer *Owner's Manuals* for these computer systems. For installation in an external subsystem, consult the instructions furnished with the subsystem.



The AM-402 should only be mounted horizontally, never vertically.

Use these instructions to install your AM-402 CD-Recorder and then use the instructions in the MAKACD command reference sheet (attached) to complete the software portion of the installation.

## SOFTWARE INFORMATION FOR THE CD-RECORDER

See the attached MAKACD command reference sheet for details on software installation and operation.

# MAKACD

## FUNCTION

Copies one or more AMOS logical disks to a recordable CD media in a supported CD-recorder. CDs created with MAKACD can be used for software distribution or for system backups. Using a 4 speed CD-recorder it only takes about 15 minutes to record an entire 600MB CD. CD's created with MAKACD can be easily read after mounting the CD with the ACD program.

## CHARACTERISTICS

MAKACD copies logical AMOS disk drives onto a recordable or rewritable CD in a format that is compatible with the Alpha Micro ACD program. An ACD compatible CD can contain up to approximately 600 megabytes of data. MAKACD creates a logical drive structure on the CD media such that each logical drive is equal in size to the largest logical disk drive copied. If logical drives of differing sizes are specified, the smaller drives will be padded on the CD to equal to the largest logical size copied. Only entire logical drives, including unused areas, can be copied to the CD. Rewritable CDs may be erased and reused.

When recording to a blank CD, MAKACD will start recording at the beginning of the CD and use only as much space as required to hold the desired data. The Table of Contents will normally be written and the CD can then be used with the ACD program.

When recording to a partially recorded CD, MAKACD will start recording at the first available unrecorded location on the CD. Normally, all of the desired data will be recorded and then extra filler will be recorded followed by the ACD special sector. Finally, the Table of Contents will normally be recorded and the newly recorded data can then be used with the ACD program. If you record data on a previously recorded CD, ACD will use the newly recorded information and ignore all data that was previously placed on the CD.

MAKACD uses the available user memory for data buffers in order to continue supplying data to the CD-recorder while other system or multi-user activity occurs. Excessive system or multi-user activity can still interfere with the steady flow of data to the CD-recorder, causing fatal recording errors.

## FORMAT

```
MAKACD {switches}
```



## OPTIONS

/HELP	Display the available options and exits
/?	Same as /HELP
/V	Display version information and exits
/COUNT:n	Creates n CDs containing the same data
/DEV:xxx:	Uses device and driver named xxx: instead of the default CDR:
/EJECT	Ejects the CD in the recorder and exits
/ERASE:ALL	Erases the entire rewritable CD by overwriting all data areas on the CD.
/ERASE:QUICK	Erases the rewritable CD by clearing only the control information without actually overwriting the data areas of the CD. This causes the CD to react like a blank CD when read or written. Do not use this switch if the rewritable CD contains more than one session.
/ERASE:SESSION	Erases the last session from a multi-session rewritable CD by overwriting all data areas of the last recorded session on the CD. This command may be used more than once to successively erase multiple sessions from the CD. Once a session is erased, the previous session may become available.
/ID:n	Uses the CD-Recorder at SCSI ID n instead of scanning the SCSI bus to find a CD-Recorder. The ID can be from 0 to 15.
/NOEJECT	The CD will not be ejected from the recorder.
/NOFILL	Do not write AMOS filler and ACD special sector information. The newly recorded data will not be accessible by the ACD program.
/NOTOC	Do not write out the table of contents when recording is finished. The newly recorded data will be inaccessible until the /TOC option is used to write the table of contents.
/PIC	Displays the Product Installation Code
/SPEED:n	Sets the maximum recording speed to n times the normal audio speed. This switch can be used to force recording at a slower speed if the system is unable to supply data to the CD-Recorder.

	Speeds from 1 to 32 may be specified. If the CD-Recorder does not support the speed specified, recording will be done at a lower supported speed.
/TOC	Writes the table of contents of the current CD and exits.
/TEST	Write CD in test mode, which does everything except turn the CD laser on when recording.
/TESTFIRST	Does a TEST first, followed by the actual CD recording if no errors were encountered in the TEST.
/VERBOSE	Display additional error messages.

MAKACD with no switches will create an ACD compatible CD, using the CDR: device found by scanning the SCSI bus. The CD will be created using the maximum recording speed of the CD-Recorder, without first doing a test copy.

## OPERATION

Before starting the program, place a blank CD or partially recorded CD in the CD-recorder.



Recording on a partially recorded media will render all previously recorded information inaccessible.



It is recommended that the system be idle. Other users or system activity could interfere with CD recording and cause the CD to be unusable. Once recording has started, the CD-recorder must receive a constant stream of data until the entire recording is finished. If the CD-recorder runs out of data before recording is finished, the program will abort with a fatal error.



Copying logical disks to the CD-recorder that are being updated by other users can result in CDs containing incorrect or incomplete data.

Type MAKACD from the AMOS prompt:

```
MAKACD RETURN
```

MAKACD will attempt to find a CD-recorder that is compatible with the CD-recorder driver being used. The driver must have the same name as the CD-recorder device name and either be loaded in system memory or reside in DSK0:[1,6]. MAKACD will find the CD-recorder either using the command line switches /DEV and /ID or by defaulting to CDR: if /DEV is not specified and by scanning the SCSI bus if /ID is not specified. If more than one CD type device is found when scanning the SCSI bus, you will be asked to choose the device you wish to use for recording.



Scanning the SCSI bus will find CDROM devices as well as CD-recording devices.

After entering the MAKACD command, the following will be displayed:

```
MAKACD Version X.X(xxx) - Copyright (C) 1999 Alpha Microsystems Inc.
  Initializing SCSI CD-Recorder...
```

If MAKACD finds multiple possible CD-recorders (including CDROM drives) while scanning the SCSI bus, the following message will be displayed to allow you to select the drive to use:

Found the following possible CD-Recorders:

```
      ID  Description
1     nn  xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
2     nn  xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

Select one of the above devices:

Additional information about the CD-recorder, driver, and media is then displayed:

```
Using Generic SCSI-MMC CDR driver (CDRMMC)
CD-Recorder located at SCSI id 5
A blank CD is in the CD-Recorder
```

MAKACD then asks for an optional title for the CD. The title may be up to 60 characters long.

```
You may enter an optional title for the CD or press RETURN for
none.
Title:
```

Next MAKACD asks for the AMOS logical drives to copy to the CD, as follows:

```
Enter the list of disk devices to transfer onto the CD-Recordable
disk. Devices may be entered as a range (ex. dev0: -20 for dev0:
through dev20:), or may be comma separated, The list is terminated
with a blank line:
```

\*

```
Enter the logical drives to be copied and then just a [return] when all
desired drives have been entered.
```

```
*DSK0:
*DSK6:
*
```

MAKACD will check the transfer rate of the drives specified to make sure they are fast enough to supply the continuous data stream required by the CD-recorder. If the speed is less than 300K per second, the program will terminate. If the speed is between 300K and 600K per second, recording speed will be limited to 1x. If the speed is between 600K and 1000K per second, recording speed will be limited to 2x. If the speed is greater than 1000k per second, recording will take place at the maximum speed of the CD-recorder or the speed specified by /SPEED in the command line, whichever is slower.

```
DSK0: 64660 blocks. Transfer rate: 1263K per second - ok
DSK6: 64660 blocks. Transfer rate: 1196K per second - ok
```

MAKACD then displays information about how much space is required on the CD and where recording will start.

```
Calculating space requirements:
  AMOS partition requires 16165 sectors
  289735 unused sectors remain
  Calculated starting AMOS sector is 0
```

MAKACD then gives you the opportunity to abort or to start the recording process.

Note that once started, the recording operation can be stopped by pressing ^C which will render the CD-R disk unusable.

Warning: The CD-Recorder must receive data constantly. Other users on the system could delay data transfers and render the CD-R disk unusable.

Press RETURN to start recording or ^C to abort.

The recording process then begins. As it progresses, status messages are displayed:

```
Transferring DSK0: in real mode
Transferring DSK6: in real mode
Waiting for CD-recorder to finish writing...Completed.
```

Also the following information is displayed on the status line:

```
20% complete  buffer 95%
```

The percentage complete shows how much of the total amount of data has been written to the CD. The buffer percentage shows how full the CD-recorder's internal cache buffer is.

When all data has been written to the CD in real mode the following messages are shown:

```
Writing Table Of Contents...
AlphaCD creation complete
```

And then the CD is ready to use.

## REQUIREMENTS AND SETUP

MAKACD requires the following:

- A 68030 or faster processor
- A full interrupt enabled SCSI dispatcher.
- DCACHE, with the number of read-ahead blocks set to 7 for best performance
- AMOS 2.3A or later.
- A supported CD-Recorder.

The MAKACD package contains the following required files:

- The device driver for the CD-Recorder.
- The CDR.DEV file that contains supported CD-recorder information.

- The SSD overlay file (CDR000.OVR)

## MODIFYING THE SYSTEM INITIALIZATION FILE:

The CD-recording device must be specified as a non-sharable device in a DEVTBL statement in the system initialization file.

Example:

```
DEVTBL      /CDR0
```

No other changes are required in the system initialization file.

The available CD-recorder device driver files are supplied either with the MAKACD package or with the Alpha Micro CD-recorder you purchased. The device driver must be installed in DSK0:[1,6] and given the same name as the CD-recorder device in the DEVTBL statement. For example, using the supplied CDRMMC.DVR device driver and the device name CDR: you would have:

```
DEVTBL      /CDR0
```

in the system initialization file. Then copy the supplied device driver as follows:

```
LOG DSK0:[1,6]  
COPY CDR.DVR=CDRMMC.DVR
```

If desired you may load the device driver into system memory during system initialization by adding the following statement in you system initialization file:

```
SYSTEM DSK0:CDR.DVR[1,6]
```

This statement should be added in the same area of the initialization file that is currently loading other system device drivers.

The CDR.DEV device information file must be installed in DSK0:[1,4]. This file is supplied with the MAKACD package or with the Alpha Micro CD-recorder. If you received more than one copy of the file, you should use the newer one.

You must enter the Product Installation Code (PIC) to actuate MAKACD. Contact your dealer for the PIC for your computer system. The first time you attempt to use MAKACD you will be asked to enter the PIC. After entering the correct PIC, MAKACD is ready to use.

## MESSAGES

### Command line syntax messages:

- Error - Cannot have /EJECT, /TOC, /NOTOC together.
- Error - Cannot have /TEST and /TESTFIRST together.

- Invalid switch
- Invalid switch option

**System requirements messages:**

- MAKACD requires a 68030 or higher CPU.
- MAKACD requires a full interrupt level dispatcher.
- MAKACD requires a SCSI dispatcher.
- MAKACD requires AMOS 2.x or compatible operating system.
- Memory partition is too small for MAKACD. An additional nnnK of memory is required.

**CD-Recorder device or driver messages:**

- ?Cannot open xxx: - device in use  
*Another user is currently using the CD-recorder.*
- Device specified is not a CD-Recorder.
- This CD-Recorder requires a different driver.  
The current driver is: xxxxxx  
The required driver is: xxxxxx  
*The device and driver selected are inappropriate for the physical CD-recorder.*
- Unable to find a CD-Recorder.
- Unknown CD-Recorder!  
Error - Unsupported CD recorder found.  
*The CD-recorder is not supported by MAKACD.*

**Error messages when setting up or writing to the CD-Recorder**

- Error - Buffer not initialized.
- Error - CD-Recorder out of data during recording.  
*The computer was unable to supply data to the CD-recorder fast enough to keep the recorder supplied with data. The CD is incomplete and unusable. If others were using the system during recording, try again without the other users. Otherwise try again using a slower maximum recording speed (see the /SPEED switch).*
- Error - Disk in CD-Recorder is not writeable.
- Error - Disk in CD-Recorder is not writeable, last session is not empty
- Error - Disk is full and cannot be used.
- Error - Media is not rewritable and cannot be erased.
- Error - Total data requirements exceed CD-R capacity.
- Error - Unable to load CDR media.  
*This indicates a hardware problem with the CD-recorder or a problem with the CD media.*
- Error - Unable to open CD recording session.  
*Try a different CD media. This can also indicate a possible CD-recorder problem.*
- Error - Unable to open track for recording.  
*Try a different CD media. This can also indicate a possible CD-recorder problem.*
- Error - Unable to read disk information from media.  
*Try a different CD media. This can also indicate a possible CD-recorder problem.*

- Error - Unable to set desired write mode.  
*A device error has occurred while attempting to setup the CD-recorder for real mode or test mode recording.*
- Error - Unable to set recording speed.  
*A device error has occurred while attempting to setup the CD-recorder for the desired recording speed.*
- Error - Unable to set write mode.  
*A device error has occurred while attempting the setup the CD-recorder recording mode.*
- Error - Unable to write to the CD.  
*A device error has occurred while attempting to record data on the CD.*
- Fatal SCSI error. Sense key=nn additional sense=nn  
*CD-recorder device error has occurred. Sense key and additional sense provide further error information.*
- Please insert a CD-Recordable disk
- SCSI error - xxxxxxxxxx  
[sense error message] Code= nn.nn  
*CD-recorder device error has occurred. Code provides additional SCSI error sense information.*
- Too slow.  
*The disk drive is too slow to keep up with the CD-recorder.*
- Warning - Unable to close track.  
*Device error occurred while closing the current CD track. The CD may or may not be usable.*
- Warning - Unable to read existing track numbers. Starting with track 0.

#### Errors concerning the AMOS CD data structure:

- Calculated and true starting points are different.  
Recording will start at sector nnnnnn with a filler of nnnnnn sectors  
*This is only a warning indicating that recording will start at a different location on the CD than originally assumed.*
- The AlphaCD logical unit size is greater than 64K blocks which could mean compatibility problems on AMOS 1.X systems. Press RETURN to continue, or ^C to abort MAKACD:  
*The logical disk size on the CD will be greater than the maximum size of a traditional logical drive.*
- Error - Disk geometry calculation was incorrect.  
*The AMOS hidden sector parameters calculated are invalid.*
- Error getting AMOS data buffer  
*The system was unable to acquire memory for data buffers.*
- Error - memory previously calculated as available isn't  
*Memory required for data buffers has disappeared.*
- Error - No devices specified.  
*User did not specify any AMOS logical disks to be copied to the CD.*
- Error - Unable to calculate AMOS buffer size.  
*The system was unable to find a buffer size that allows the AlphaCD special sector to properly recorded.*
- Error - Unable to calculate AMOS disk geometry.

*The AMOS hidden sector parameters could not be calculated.*

- Error- Unable to remove CD-Recorder data buffer from memory.
- Error - Unable to write AlphaCD special sector.  
*An error was received while trying to record the AlphaCD special sector.*
- Unable to continue due to one or more errors shown above.  
*Testing of logical disk drive transfer rates resulted in the errors listed above.*

### Normal informational messages:

- A blank CD is in the CD-Recorder.  
*The CD media in the CD-Recorder is blank and unused. A blank CD does not require filler and an AlphaCD special sector.*
- AlphaCD test complete  
*The test recording is done.*
- AlphaCD creation complete  
*The recording of data on the CDR media is done.*
- Are you sure you want to erase data from this CD (Y/N)?  
*If you really want to erase the CD, type Y **[RETURN]**. The CD will be erased as requested. If this was a mistake, type N **[RETURN]** and the program will exit without erasing the CD.*
- Calculating space requirements:  
AMOS partition requires 16165 sectors  
Filler requires 38127 sectors  
Calculated starting AMOS sector is 251608  
*This shows information about where data will be recorded on the CD and how much space it consumes.*
- CD-Recorder located at SCSI id n  
*This shows the SCSI id of the CD-Recorder being used.*
- Completely erase entire CD  
*MAKACD will erase all data from the rewritable CD. This writes to the entire CD and can take 30 minutes or longer.*
- DSK0: 64660 blocks. Transfer rate: 1273K per second - ok  
*The disk transfer rates are being tested.*
- Erase last session on CD  
*MAKACD will erase the last session on the rewritable CD. This overwrites the entire last session on the CD and can take 30 minutes or longer, depending on the size of the session.*
- not calculated - disk is too small.  
*The specified disk is too small for speed testing. The disk will be copied to the CD.*
- Note that once started, the recording operation can be stopped by pressing ^C which will render the CD-R disk unusable.

Warning: The CD-Recorder must receive data constantly. Other users on the system could delay data transfers and render the CD-R disk unusable.

- Press RETURN to start recording or ^C to abort.  
*This is the final prompt before recording begins. You may abort by pressing control-C or start the recording process by pressing RETURN.*
- NOTE: Disk will be recorded as a multi-session recording



- Disk currently has nnnnn free sectors  
CD contains tracks 1 through 10  
*If the CDR media is not blank, this message shows how much space is available and what CDR tracks are currently recorded. Recording new information on this CDR will make the previously recorded data inaccessible by the ACD program.*
- NOTE: Writing in TEST mode.  
*This message is shown if the /TEST or /TESTFIRST switches are included in the command line.*
  - OK for 2x recording.  
*The disk is too slow for 4 speed recording so 2 speed recording will be used for the entire CD.*
  - Quick erase CD  
*MAKACD will erase just enough information to make the rewritable CD look like a blank CD. This normally takes less than 5 minutes to complete. Do not use this switch if the rewritable CD contains more than one session.*
  - This operation may take over 30 minutes to complete  
*This just warns that the erase operation requested will take a long time to complete. Nothing will be shown on the terminal screen until the erase operation completes.*
  - Transferring DSK0:in test mode  
*Test mode does everything but turn on the recording laser.*
  - Using Generic SCSI-MMC CDR driver (CDRMMC)  
*This message shows the CDR driver name and description being used.*
  - Waiting for CD-recorder to finish writing...Completed.  
*The memory data buffers and the CD-Recorder's cache buffers are being recorded on the CDR media.*
  - Writing filler...  
*This message is shown if filler is required before recording the AlphaCD special sector.*
  - Writing Table Of Contents...  
*All data has been recorded and the Table of Contents is being recorded on the CDR media.*
  - nn% complete buffer nn%  
*This message shows percentage of the recording process already completed and how full the CD-recorder's cache buffer is. This message appears on the terminal's status line.*