

# ATARI CHKDISK3 DOCUMENTATION

April 22, 1990

**WARNING!!** *CHKDISK3 has not been through heavy testing and you use this program at your own risk. Proceed with caution. Back up your disks (especially hard disks) BEFORE you use CHKDISK3. This is a powerful tool which can fix damaged disks, but, if it's misused, it can also damage good disks.*

The Atari CHKDISK3 program is a utility that analyzes a disk's file structure and does all of the necessary fixes. Before you use the program, you should have some basic knowledge about the disk and file structure.

On the surface of each disk are invisible rings called tracks. The number of tracks on a hard drive depends on the size and type of the drive. A blank disk must be formatted in order to create these tracks. Each track is divided into many small fragments called sectors. Each track has sectors. Several sectors linked together are called a cluster. Directories and files are stored into data clusters. Some files may occupy one cluster and some may occupy more depending on the size of each file. To keep track of the status of each cluster, the disk contains a structure called a File Allocation Table (FAT). The FAT records which clusters are in use, which ones are free and which ones are physically damaged. A cluster which is logically allocated but has no file actually using it is called a "Lost Cluster." A cluster which is shared by two or more different files is called a "Doubly Used Cluster." A damaged cluster is called a "Bad Cluster."

## USING CHKDISK3

You must specify the drive id and pathname for some options. Here are descriptions of all of the functions:

### File:

- **Edit File**

Use this function to edit the clusters containing the current file.

Att = Attributes ORing the following values:

- x00 normal file
- x01 read only
- x02 hidden from directory search
- x04 set to system, hidden
- x08 eleven-byte volume label
- x10 subdirectory
- x20 archive bit set

Clusters = the number of the starting cluster

- **Recover File**

Recover a deleted file. This may not work if the disk has been written to since the file was deleted, in which case, the original file may have been written over.

This function looks through all the deleted files to match the name you have given. If it finds the deleted file, it asks you if you want automatic or manual recovery of the file. Automatic recovery assumes the file has contiguous clusters. This is generally true for freshly formatted or a relatively empty disk.

Manual recovery displays a map of the clusters with the starting cluster that might belong to that file. You must determine if this cluster actually belongs to that file. If not, the function looks for the next possible starting cluster until there are no more clusters.

The screen has the following options:

F1 - Search -- Ignore the current cluster and go to the next one.

F2 - Save -- Save the current cluster.

F3 - Unsave -- Go back to the last cluster and do it over again.

F4 - Exit -- Finish and go out.

After saving the starting cluster, this function displays each of the remaining clusters. You must determine what to do by choosing one of the options:

Selecting the [F4] key signals that the recovery is finished. Now you can examine the "recovered" file and decide whether to save it to the current disk or another one.

- **Exit**

Exit the program.

## Disk:

- **Clean up Directory**

Relocate and compress the directory entries inside the directory's cluster(s). This frees up empty clusters for the system to use.

- **Show BPB**

Show the disk's BIOS Parameter Block.

Bflags - bit vector of flags (see AHDI 3.00 release notes)

0 - 12 bit FAT

1 - 16 bit FAT

- **Analyse FAT**

This function scans through the disk and checks all of the clusters' allocation information. If it finds any Lost, Doubly Used, or Bad clusters, they are shown by using three different lines. The actual clusters number can be checked by clicking the arrows to scroll the window. Any Lost cluster can be recovered immediately by clicking the [Recover] button. Doubly Used clusters mean that the disk is logically damaged. Back up the disk (or partition) immediately and use HDX to reformat it.

- **Show FAT map**

Show cluster's allocation map. On a color monitor, different color dots indicate non-contiguous clusters.

- **Compress Disk**

This function compresses the current disk and frees up any Lost clusters. The Disk is compressed by removing empty clusters between allocated clusters. This function first analyzes the disk, then a second box comes up for the final confirmation. There is a percentage-completed chart to inform you about the progress of the compression. If the disk is badly fragmented, it may take a long time to do the compression.

*Warning! Do not attempt to change the disk while inside this function.*

- **Edit FAT table**

Allows you to edit the cluster links of the FAT table.

- **Edit Disk Sectors**

Edit any sectors. The data is shown in hexadecimal form.

- F1 - Drive/Unit. Drive: a-z. Unit: 0-9
- F2 - Logical sector number to edit
- F3 - Absolute sector to edit
- F4 - Use the second FAT
- F5 - Edit root directory
- F6 - Go to previous sector
- F7 - Go to next sector
- F8 - Save edited sectors
- F9 - Hex or decimal input of sector number
- F10 - Exit

## Misc

- **Force Media Change**

Force CHKDISK3 to read in the BPB again. This is useful after editing the FAT or sectors.

- **Help**

Show the help menu.

