

# MHDD

## Very low level Hard Disk diagnostic tool.

Documentation revised 01/10/09 by [Dennis German](#) again and again..

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## About the MHDD project

MHDD is the small and powerful freeware tool to work with hard drives at the lowest possible level. The first version was released in 2000 by Dmitry Postrigan whose main objective was to develop well-known and trusted HDD diagnostic tool. It was able to make surface scan of an IDE drive in CHS (Cylinder, Head, Sector) mode.

MHDD now includes features to access raw sectors, view S.M.A.R.T. (SMART) and other drive parameters such as acoustic management, security, Host Protected Area. You can issue a sequence of commands using simple scripting.

## How it works

When DOS needs to read a sector from a drive , it asks the BIOS to do it. The BIOS looks into its tables to find where that drive is attached, checks ranges and then starts sending commands to the drive. After everything is done BIOS returns result to DOS.

This diagram shows how a DOS program talks to the drive.

```
program <---> MSDOS <---> BIOS <---> IDE/SATA controller <---> Hard disk
```

This is how **MHDD** works:

```
MHDD <-----> IDE/SATA controller <----> Hard disk
```

The main difference: **MHDD** does not use DOS or BIOS functions or interrupts and works even if the BIOS does not detect the drive. You can turn on your drive **after** DOS boots (A small risk of drive damage exists if you are not careful)

. **MHDD** works directly with IDE or Serial ATA controller so it does not know about partitions, file systems, BIOS (motherboard) limitations, etc.

For SCSI drives **MHDD** uses DOS ASPI driver (included).

**WARNING:** Do not run **MHDD** from the hard drive that is on the same physical IDE channel (cable) you are going to use to diagnose drives! DOS (SMARTDRV.EXE, for example) may access any drive at the same moment as **MHDD**. This will cause data loss on both devices on that channel! There is no way to block or trace MSDOS or BIOS read/write attempts. That is why, by default, **MHDD** does not work with Primary IDE as it usually used to boot DOS and run **MHDD**.

If the drive under test is on the Primary IDE interface use **/ENABLEPRIMARY** switch. (this is included in the CD image)

## Platform and supported hardware

Platform:

- DR-DOS , MSDOS version 6.22 included on CD image
- Hardware
- Intel Pentium or higher CPU
- boot device (USB, CDROM, FDD, HDD)
- IDE/SATA Controllers
- Any integrated into motherboard north bridge (addresses: 0x1Fx for primary channel, 0x17x for secondary channel)
- PCI UDMA boards (detected automatically): HPT, Silicon Image, Promise, ITE, ATI and so on. Some RAID boards are supported. In this case **MHDD** works with each physical drive **separately**
- UDMA/RAID controllers integrated into motherboard as additional chip

Hard disk drives

- IDE or Serial-ATA drive with size bigger than 600Mbytes, i.e. LBA mode is supported in full.removed CHS code since version 2.9
- IDE or Serial-ATA drive with size smaller than 8,388,607 TBytes, i.e. LBA48 mode is supported.
- SCSI drive with sector size 512—528 bytes

Other devices

- Any SCSI removable media such as tape, CDROM. Maximum sector size for such devices is 4096 bytes

## Getting MHDD

Please use [HDDguru.com](http://HDDguru.com) website.

**MHDD** is available as CD image, as self-extracting floppy image or as an archive.

**MHDD** is included in the sysresccd free download at [SysRescCD.org](http://SysRescCD.org)

## Preparing the package

- Write a *bootable* CD from the ISO image with any CD burning software.
- Floppy image can be written under Windows 2000/XP.
- Take the executables and build your own system.

## MHDD package contents

**mhdd.exe** Main executable  
**mhdd.hlp** used by **MAN** to describe commands

`batch/sample.mba` Sample batch  
 script to run tests without intervention  
`scripts/test` Sample script for  
 sending commands  
`cfg/mhdd.cfg` configuration

[AUTOEXEC.BAT](#)

[CONFIG.SYS](#)

[SETRAMD.BAT](#)

The bootable CD image creates a

- RAM drive (2MB) as **D:**,
- the CD becomes **A:** and the
- floppy is **B:**.

The CD is removable and you can insert a different CD having an editor or other programs.

## First run. Some important information

### MHDD is very easy to use.

Knowing what to have **MHDD** do is not easy!

If you don't have in depth knowledge of how disk drives work, read the ATA/ATAPI standard: [ATA8-ACS PDF](#).

If you already have in depth knowledge of how disk drives work, read the ATA/ATAPI standard: [ATA8-ACS PDF](#).

It is very important to understand that you have to spend several hours (minimum) before you will start using **MHDD**.

I strongly recommend trying a couple of good SPARE drives, with **MHDD** before you start working with bad drives.

#### Before you start,

IDE drive to be tested **MUST** be configured as master (i.e. set the jumpers on the drive), no other devices should be attached.

**MHDD** uses `cfg/mhdd.cfg` for program configuration information.

Primary IDE channel is disabled. To enable it, first read [read this](#) warning message, then edit `MHDD.CFG` and include:

```
#PRIMARY=TRUE
```

If you booted from the CD, **MHDD** runs from a RAM drive, so this is not problem and `AUTOEXEC.BAT` starts **MHDD** with the `/enableprimary` command line option.

Have a DOS formatted floppy ready for saving logs, screenshots and config files.

( Adding a tiny editor like `vi.exe` and `pkzip` would also be a good idea. Remember floppy is **B:** if you booted from the CD.)

**MHDD** logs all activity in `log/mhdd.log`.

Example:

```
31.07.2007 17:22:14
31.07.2007 17:22:14 | MHDD 4.6 (c) Dmitry Postrigan | FREeware
31.07.2007 17:22:14 Changing mode to: IDE
31.07.2007 17:22:30 Changing mode to: IDE
31.07.2007 17:22:30 Device selected: 3
31.07.2007 17:22:32
31.07.2007 17:22:32 MHDD<QUIT
31.07.2007 17:22:32 MHDD: Exit
```

After starting **MHDD** you will see drive selection menu.

This can be displayed later by pressing **SHIFT+F3**.

```
Created directory: "CFG"
Autodetect disabled. To Enable see MMHDD.CFG
```

```
PORT 1F0h (Primary controller)
1. [
```

```
PORT 170h (Secondary controller)
3. [
```

```
PORT 100h (PC-3000 board)
5. [
```

```
PCI controllers)
6. [
8. [
```

```
-----
Warning: SLAVE DEVICES NOT SUPPORTED
Enter HDD Number [3]:
```

```
| MHDD 4.6 (c) Dmitry Postrigan | FREeware
```

```
| hh:mm:ss
```

## Be extremely careful when running MHDD the first time.

**[F1]** displays the commands.

**MAN EN** *command* or

**MAN RU** *command*

describes what the *command* does.

Some have shortcuts, for example **F4** for SCAN.

**SCREENSHOT** or **[F10]** will do a print screen to file LOG\SCRSHOT.LOG.

## Using MHDD

### Device identify commands

Retrieve information from the drive.

**ID** and **EID** display detailed information about the drive.

See [ATA/ATAPI standard](#)

**ID** or shift**[F2]**

```
Maxtor 5T030H3 LBA: 60,030,432 BIOS: 80H
SN: T3D3N8WC FW: TAH71DP0 CACHE:512KN Size = 8063MB
```

**EID** adds

```
Supports: HPA DLMC LBA MS16 DMA (UDMA2,MWDMA2) EID
SMART: Enabled EID
Size=8063MB
```

**PORT** or shift**[F3]** detects disks and presents the [drive selection menu](#).

**CX** seek read test measures access times

```
Init drive: Done
Seek&Read test
Press <>ESC> to finish...
Start: hh:mm:ss
Average Access Time:
16.87
```

```
This is
continuously
averaged and
updated until you
```

press [ESC].

Maximun: 35.03

Done: hh:mm:ss

## SMART attributes

SMART ATT or [F8].

Different manufactures and different models provide different information.

- #5 **Reallocated Sectors Count** attribute is the most important item. This reports the number of remaps on the drive. This should be ZERO . If it is more than 50 — you have a problem. That means you have bad power supply, vibration, or overheating.
  - #194 **Temperature** best values are between 20 and 40 degrees centigrade.
  - #199 **CRC error rate** attribute means how many errors have happened during transferring data *through the IDE/SATA cable* and should be zero . If not change the cable! Overclocking may result in increased error rate. see [ATA/ATAPI standard \(PDF\)](#) for more information about **SMART ATT**
- display smart attributes to screen and **smart.log**

Each drive model may present different attributes

```
HDD: Maxtor 5T030H3; FW: TAH71DP0; SN: T3D3N8WC
      Name                               Val Worst Raw
Att #  1 : Read error rate                : 253  252  94
Att #  3 : Spin up time                    : 210  208 16970
Att #  4 : Number of spin-up times        : 240  240 27451
Att #  5 : Reallocated sectors count      : 253  253  0
Att #  6 : Read channel margin            : 253  253  0
Att #  7 : Seek error rate                 : 253  252  0
Att #  8 : Seek time performance          : 252  245 53387
Att #  9 : Power-on time                  : 216  216 64096
Att # 10 : Spin-up retries                 : 253  252  0
Att # 11 : Calibration retries            : 253  252  0
Att # 12 : Start/stop count                : 252  252 432
Att # 187 : Unknown                       :  35   46  35
Att # 189 : Unknown                       :  35   46  35
Att # 190 : Unknown                       :  35   46  35
Att # 194 : HDA Temperature                :  35   46  35
Att # 195 : Hardware ECC recovered         : 253  252 731
Att # 196 : Reallocate event count        : 253  253  0
Att # 197 : Current pending sectors       : 253  253  0
Att # 198 : Offline scan UNC sectors      : 253  253  0
Att # 199 : Ultra ATA CRC Error Rate      : 199  199  0
Att # 200 : Write error rate              : 253  252  0
Att # 201 : Unknown                       : 253  172 794
Att # 202 : Unknown                       : 100  253  0
```

## SMART commands

SMART off | on

SMART AAS enable | disable attribute autosave

SMART DATA read data

If this does not display in about 50 seconds the drive may not be responding.  
No error is displayed by MHDD if the command timesout.

```
off-line data collection statue: CODE:130
```

```
Self-test execution status: nn%*, and was aborted by the HOST
```

```
-or-
```

```
Never started
```

```
-or-
```

```
and the previous self-test completed having the read element of the test failed.
```

```
-or-
```

```
Completed, and previous test
```

```
-or-
```

Completed without error or no test has ever been run.

**-or-**

*nn%*, and IN PROGRESS (*percent remaining*)

Total time in seconds to complete off-line  
data collection activity: 430

Off-line data collection capability (bit-mapped): 91

Error logging capability: supported

Short self-test routine polling time (minutes): 1 (*don't believe it*)

Extended self-test routine polling time (minutes): 54

Conveyance self-test routine polling time (minutes): 2

Checksum: OK

**-or-**

Checksum: **FAIL, 1** **-or- 109**

*subsequent queries return increasing values up to 255*

**SMART ErLog** dumps the error log to a file (this takes a minute or two)

The **ERR** and **ABRT** indicators will blink as MHDD queries log entries.

```
* Smart -> ERLOG
```

Filename to save the ErrorLog:

```
Log #01 found.
```

```
...
```

```
Log #EE found.
```

```
Log #EF found.
```

```
Log #F0 found.
```

```
...
```

```
Log #FF found.
```

Log saved to file: "xxxxxx"

Successful

Sample [Error Log](#) with failing LBAs

**SMART TEST** executes internal tests

```
-- -- SMART Execut OFF-Line immediate (tests) -- --
```

```
-----
0  Execute SMART off-line routine (off-line)
1  Execute SMART Short self-test routine (off-line)
2  Execute SMART Ext. self-test routine (off-line)
3  Execute SMART Conveyance s.t. routine (off-line)
4  Execute SMART Selective s.t. routine (off-line)
5-63 Reserved
64-126 Vendor specific
127 Abort off-line mode self-test routine
128 Reserved
129 Execute SMART Short self-test routine (captive)
130 Execute SMART Ext. self-test routine (captive)
131 Execute SMART Conveyance s.t. routine (captive)
132 Execute SMART Selective s.t. routine (captive)
133-191 Reserved
192-255 vendor specific
-----
```

```
Select a test (0-255, blank or any symbol for cancel):
Starting routine n, press "Y" to process:
```

**captive** tests wait until the test completes before **MHDD** regains control

**off-line** tests return control immediately and the drive continues the test. This would permit switching to another drive and starting an off-line test on multiple drives.

Use **SMART DATA** to determine that status of the off-line test.

After pressing **Y**, the **BUSY** indicator will light up until the test completes . **smart data** will return the remaining % of the test

---

## Scanning a drive

Scanning is possible after the drive was detected by **ID** or **EID** commands.

**MAKELOG** scans the surface of the drive and creates a detailed log file. If you booted from the CD there will, most likely, be insufficient space for the log file on the RAM drive.

If the target drive is less than 10GB the log will fit on a floppy.

To create the log on a hard drive :

(this means there must be one with a FAT partition which you are willing and able to write to).

(Here's a use for those old < 1GB drives you have laying around.)

- **mkdir** C:\MHDD or on another partition
- **COPY MHDD\\*.\*** C:\MHDD to copy files from the RAM drive (or CD) to the hard drive
- **C:**
- **CD** C:\MHDD to that directory and start MHDD

OR

**SCAN** or [**F4**] no logfile will be created

A menu is presented to adjust **Start** and **End LBA**, **Remap** bad spots( Safe to data if there are less then 100 bad blocks.) change the **Timeout** for a single operaton **DGG: I suggest you change** Timeout **to 5** **loop** (useful when small range is specified) **Erase Delays**(danger data will be lost).

```
Scan Parameters: SPACE or ENTER to change
Start LBA:                0
End LBA :                 12656477
Remap :                   OFF
Timeout (sec) :           240†
Spindown after scan :    OFF
Loop test/repair :       OFF
Erase Delays *DESTRUCTIVE* : OFF
[A,D,S,W]-move; [CTRL+ENTER,F4]-finish
```

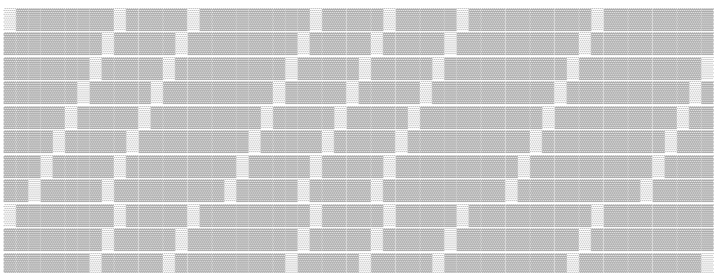
Defaults are shown.

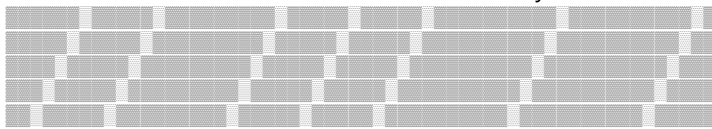
Press [**F4**] **again** to start the scan .

How scan works:

1. **MHDD** issues a **VERIFY SECTORS** command with LBA number and number of sectors to verify
2. drive raises **BUSY** flag
3. **MHDD** starts a timer
4. After drive executes **VERIFY**, it drops **BUSY**
5. **MHDD** measures the time and puts the corresponding block on the screen

```
D0 ERR INDX CORR DREQ DRSC WRFT DRDY BUSY AMMF TONF ABRT INDF UNCR BBK 00
[drive mfg model] [ nnn,nnn,nnn] [ nn,nnn,nnn] [ EST: mm:ss ]
AVG [ nnnnn kb/s]
ACT [ nnnnn kb/s]
. <3ms : nnnnnnn
x <10ms : nnnnn
X <50ms : nnn
* <150ms : n
* <500ms :
* >500ms :
? TIME :
x UNC :
! ABRT :
```





```
S IDNF :
A AMNF :
0 TONF :
* BBK  :
[ nn.n% ] [ nn.n%]
ssssss
sssssss
```

The **AVG** (average) transfer rate in kilobytes per second is displayed, as well as the percentage complete.

One block is 255 sectors (130,560 bytes).  
During the scan you can navigate the virtual-disk.  
pressing,

left arrow ⇐	backs up 10,000 sectors	up arrow ↑	backs up <b>250,000</b> sectors
down arrow ↓	advances 10,000 sectors	right arrow ⇒	advances <b>250,000</b> sectors

The log of scan is `log/mhdd.log` which is nice to save like to a floppy ( or maybe `c:\driveSN.LOG`).

Drive registers are displayed at the top of the screen.

```
50 ERR INDX CORR DREQ DRSC WRFT DRDY BUSY AMMF TONF ABRT INDF UNCR BBK 00
```

Drive should report Drive Seek Complete and Drive Ready so you will see **DRSC** and **DRDY** flags colored in blue.

Data Request (**DREQ**) flag is on when drive is ready to receive or send some data from/to the PC.

**BUSY** appears when drive is executing (read or write command, or executing an online test).

Some flags such as Write Fault and Track 0 Not Found are obsolete, they never should appear.

INDEX flag is also obsolete, but sometimes blinks.

?

When you see Error flag (ERR) you can look at the error register where you can see what kind of error happened. [ATA/ATAPI standard](#) has more information about registers and commands. ?

The brightness of the blocks reflects the length of time to read the sectors .

Longer times are most likely do to the firmware performing a retry of a marginal spot.

It is normal for a checker board like pattern to scroll across the screen.

A table on the right shows the number of blocks in each time range.

If an error occurs a letter describing the type is shown

<b>? TIME</b> VERIFY command did NOT complete within the timeout	<b>x UNC</b> data is uncorrectable.	<b>! ABRT</b> command was aborted	<b>*</b> <b>BBK</b> Bad Block
<b>S IDNF</b> sector ID cannot be read or not as expected	<b>A AMNF</b> Data Address Mark Not Found	<b>0 TONF</b> Track 0 was not found during drive recalibration	

Now that the scan showed some **UNC** errors, what to do?

Save the scan log! A **blue block** indicates remapping in progress.

Check **smart att**

Of special interest are:

- **#5 Reallocated sectors count: 144 139 1109** this should be zero!
- **#194 HDA Temperature** perhaps there's an answer here!
- **#195 Hardware ECC recovered 253 252 731** Watch for

astronomical number

- **#196 Reallocate event count 1 1 982** This looks bad!
- **#197 Current pending sectors 144 139 1109** Not good either!
- **#198 Offline scan UNC Sectors 1 1 11090** Looks like offline selftesting found errors too (same ones??)
- **#199 Ultra ATA CRC error rate 199.198 1** This has to be BAD!

and

**smart errlog**

Maybe now is a good time to do a **file** based backup! ( but you already did that I'm sure!)

Reruning the scan most likely will show the same errors since the hardware (firemwre) has already done multiple attempts to read the data.

**MAKELOG** creates **advlog.bin** to a floppy as well, it will be rather large (example: 800KB for a 6GB drive), to be used by another program to further analyze the condition of the drive surface.

Example file:

```

9A 00 00 00 hex header
VER:2
MODE: IDE
DEVICE: Maxtor 90648D3
F/W: GAS54112
S/N: A30V0VFC
SECTORS: 12,656,448
SECTOR SIZE: 512 bytes
SCAN BLOCK SIZE: 255 sectors

      address      milli seconds
0000 0000 0000 0000 0000 0000 0000 302a
0000 0000 0000 ff00 0000 0000 0000 694c
0000 0000 0000 fe01 0000 0000 0000 5a1f
0000 0000 0000 fd02 0000 0000 0000 2b1f
0000 0000 0000 fc03 0000 0000 0000 6122
0000 0000 0000 fb04 0000 0000 0000 8c1c
...
0000 0000 0000 1f1f c100 0000 0000 c80b

0000 0000 0000 0a

```

49,633 blocks of 16 bytes for a 6GB drive

If your drive has errors, first thing to do is to make full back up.  
Then VERIFY that the backup you made is readable and complete!!

You can **WIPE OUT** all the DATA  
using the  
**ERASE** which erases every sector  
Then **SCAN** with **REMAP** on.

If you see all blocks as errors **STOP**.  
You are dealing with service-area error  
which cannot be fixed by **MHDD** .  
The best option contact the  
manufacturer for a Return Materials  
Authorztion, or discard the drive.

## Writing sectors to a file

**TOF** writes sectors To a File.

You can write several sectors or the whole drive to a file or to set of files.

**ATOF** (automatic file splitting) command will get more than 1 GB and to create several files.

**MHDD** skips bad sectors

## Writing sectors from file to the drive

**FF** to write sectors From a File to the drive. input the LBA of the first sector to write and how many sectors to write.

## Acoustic Management

**AAM** adjusts the Acoustic Management parameter. Note: decreasing the sound level is done by increasing the seek time!

## Device Configuration

**CONFIG** views or set the maximum UDMA mode, Security , SMART , LBA48 mode , AAM and HPA support, etc. You can also cut or uncut the drive by using this command. Some manufacturers are using Device Configuration to artificially reduce the size of a disk.

## Display all PCI devices

**PCISCAN** Scan PCI and save map to **MHDD\_PCI.log** Example:

```
MHDD PCI SCAN LOG

NAME-----CLASS--SUBCLASS--VENDOR--DEVICE--IO PORTS-----
Intel          06    00      8086   7190   0008 0000 0000 0000 0000 0000
Intel          06    04      8086   7191   0000 0000 0100 D0D0 FCA0 F480
Intel          06    01      8086   7110   0000 0000 0000 0000 0000 0000
Intel PIIX4 EIDE Controller 01    01      8086   7111   0000 0000 0000 0000 FFA1 0000
Intel          0C    03      8086   7112   0000 0000 0000 0000 EF81 0000
Intel          06    80      8086   7113   0000 0000 0000 0000 0000 0000
                04    01      12EB   0001   0000 EFA1 EF69 0000 0000 0000
VIA            0C    00      1106   3044   F800 EC01 0000 0000 0000 0000
                0C    03      1045   C861   E000 0000 0000 0000 0000 0000
PROMISE FastTrak100 01    80      105A   4D30   EFF1 EFE5 EFA9 EFE1 EE81 0000
                02    00      10EC   8139   E801 F700 0000 0000 0000 0000
ATI            03    00      1002   4C42   0000 D801 F000 0000 0000 0000
```

## Erasing sectors or whole drive

### ERASE

If your drive is recognized by the BIOS, **MHDD** will use BIOS functions to erase the contents of the drive. Use **/DISABLEBIOS** command line switch to prohibit this.

First **MHDD** shows the disk ID, then invokes **Fast Disk Eraser**

```
Fast Disk Eraser v4.4 (LBA28/48/BIOS/ASPI)
Type start sector to write [0]:
Type end sector [16514063]:
tart : 1785
End  :1786
[] Continue? (y/N)
```

```
Start: 23:40:02
```

```
Sectors done: 2, 0Mbytes completed
End  :23:40:02
```

**HDDerase** from [cmrr.ucsd.edu/people/Hughes/SecureErase.shtml](http://cmrr.ucsd.edu/people/Hughes/SecureErase.shtml) or on the [Ultimate Boot CD](#), will **ERASE** the contents of the entire drive at once using the internal **SECURE ERASE** command. This is the fastest erase and **cannot be stopped**.

If the drive is powered off after accepting the **SECURE ERASE** command, on power up it will be locked.

In this state the drive will continue the erase unless it is unlocked (after being partially erased) if the internal password is known.

Notes at [CMMR.UCSD.edu](http://CMMR.UCSD.edu), [ATA/ATAPI standard](#).

## Cutting the drive (size change)

**RHPA** display factory size

**HPA** limits the size of a drive. Enter the new MaxLBA number, in sectors.

**NHPA** returns to factory size

Power cycle the drive before using **NHPA** .

According to [ATA/ATAPI standard](#), you can use HPA functions only once per drive's power cycle.

## Security commands

Before using Security passwords, look in the BIOS setup for options to provide the password. If there is no way to provide a password at boot time, the only way to access the drive once setting the password, is to use **MHDD** to disable the password.

**PWD** command locks a drive with defined *user* password. According to [ATA/ATAPI standard](#), Power cycle the drive to make password setting active.

There are two commands to unlock drives: **UNLOCK** and **DISPWD**.

**UNLOCK** unlocks a drive until the next power cycle.

To disable password, **UNLOCK** the drive, then use **DISPWD** command.

You must know the password to use **UNLOCK** or disable password commands.

**UNLOCK** and **DISPWD** can change the *master* or *user* passwords. For example, **PWD** command sets USER password.

## Batches

An example is in the **BATCH** directory.

Press [F5] to run a batch.

Comments begin with a **;** but are not displayed as batch runs.

*First (non comment) line must match program version number v1.1*

commands:

**ASK\_ON/ASK\_OFF** ask for permission to execute every command

default is **ASK\_OFF**

**SOUND** *frequency*, **NOSOUND**, **BEEP**

*seconds*, **ENDSND\_ON** / **ENDSND\_OFF**

**HALT\_ON** / **HALT\_OFF** on error

**PAUSE** *seconds*

**REPEAT** *n*

next line *n* times.

[ESC] can be used to stop looping.

**DEV\_SELECT** (from menu),

**DRV-PORT** *p*

(use 1 for Primary Master... 3 for Secondary Master, 6 for first PCI channel

(see output from **SHIFT+[F3]**),

**DRV\_SCAN** {*startLBA* | **MIN** } {

*endLBA* | **MAX** } {0 | 1 | 2 }

(where 0 is for scan, 1 scan and remap, 2 scan + Erase Delays)

**DRV\_WAIT** wait for drive to be ready

**DRV\_ID**, **DRV\_RESET**, **DRV\_STOP**,

**DRV\_NHPA** recover Native Drive size

(Host Protected Area)

**DRV\_SEEK** *seconds* of testing

**DRV\_ERASE** {*startLBA* | **MIN** }

{*endLBA* | **MAX** }

A comment can be added after some commands with a numeric argument, example

```

DRV_SEEK 10 ;
expect 13.9
ms average

```

Use **MAN EN BATCH** to see the commands

Example:

```

;version - do not change
V1.1
;confirmations: on
ASK_ON
;terminate batch on error
HALT_ON
;make sound after each line
ENDSND_ON
beep 1 ;;;; Please select drive with SN=Y2VSJQHE
;select a drive from the displayed list
DRV_SELECT
;ATA reset
DRV_RESET
;Seek Test for 10 seconds
DRV_SEEK 10
; scan a little
DRV_SCAN 0 200 0
ASK_OFF
;repeat NEXT command 2 times
REPEAT 2
;scan whole drive without repair
DRV_SCAN MIN MAX 0

;stop spindle
DRV_STOP
;announce completion
beep 10

```

---

## Other MHDD commands

**EXIT**, **QUIT**, **HELP**, **CLS**,

**WAIT** until drive is no longer **BUSY** then beep

**SCSIINFO**,

**PORT** shift+F3,

**INIT**

**RST** or [F3]

**STOP** the spindle shift+F4

**RX** Receive data from buffer ( internal program debugging use only)

**RPM** Calculate Rotation speed of disk

**SETCDSPEED**,

**SWITCHMBR** i.e. toggle active | inactive

**CLRMBR**

- save to **LBA0.MBR** and **LBA 1** (backup)
- **erase LBA 0**
- set inactive

**FDISK** Write MBR with one partition containing the entire disk.

**SCSIFORMAT**

**MAKEBAD**

**RANOMBAD**

---

## Command line switches

If you booted from a CD with the **MHDD** command in the **AUTOEXEC.BAT** you will need to exit and issue the **MHDD** command to include switches.

**/NOPINGPONG** Disable some sounds  
**/DISABLEBIOS** Disable ERASE through BIOS  
**/DISABLESCSI** Disable SCSI engine  
**/ENABLEPRIMARY** Enable Pimary IDE/SATA channel  
**/RO** (disable logging and temp files creation)

## Environment Variables

**CDROM**

**Lg1Drv**

**RAMD** drive letter of RAM drive

**CONFIG**

## CFG/mhhd.cfg file

as observed

N.B. **#** is NOT a comment but is included in every(?) line.

```
#AUTODETECT_ENABLED=FALSE
#DEVICE=3
#SCAN_ERASEWAITSDelay=350
#SCAN_STARTLBA=0
#SCAN_ENDLBA=12656447
#SCAN_TIMEOUT=2
#SCAN_MENUX=20
#SCAN_MENUY=5
#SCAN_SLEEP=0
#PRIMARY_ENABLED=FALSE
```

---

## Frequently Asked Questions

FAQ is available here: [forum.hddguru.com/viewtopic.php?t=5](http://forum.hddguru.com/viewtopic.php?t=5)

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