HDR 24/96 large external drive support BIOS replacement instructions

Overview

- This BIOS upgrade allows the Mackie HDR to support large external hard drives.
- The upgrade procedure requires that you remove the motherboard battery and let the HDR sit overnight. Do this upgrade when you are not using the HDR for a day.
- As you need to remove the battery anyway, it is a fine time to replace it with a new one.
- For long recording sessions, rendering, and Pro Tools exports (HDR Pro only), you will need to add 128 MB of RAM (for a total of 256 MB). Use PC100, 168 pin, DIMM, SDRAM, (or faster if compatible with PC100).
- Recording or rendering tracks continuously for more than four hours is not supported.
- Mackie's Engineering department has thoroughly tested this BIOS upgrade. Many popular drives from various manufacturers, have been tested up to 120 GB maximum.
- Mackie Designs Inc. makes no claims that all drives will work. There are bound to be some that are not recognized by the new BIOS, and others that are not approved for recording by the HDR OS.
- This upgrade is approved for the use of external drives only. Replacing the internal drive will void your warranty, and is not recommended.
- This upgrade is approved for use with HDR OS 1.4 and higher. Please upgrade the OS before upgrading the BIOS.
- Thoroughly test your external drive until you are completely satisfied it is working correctly and reliably. Please note that Mackie Designs Inc. is not responsible for any loss of data, or income.
- If you find a drive which is not supported, please email the drive information to: techmail@mackie.com.

⚠ Safety Instructions

- Please read, and follow all safety and installation instructions before proceeding.
- Keep the BIOS in its protective anti-static bag until the exact moment you are ready to use it.
- This upgrade requires opening your unit and handling sensitive electronic components. Anti-static precautions must be taken in order to prevent damage to the unit or to the BIOS chip from electro-static discharge (ESD). This kit includes an anti-static strap that fits on your wrist, and has a cord that clips to the metal chassis of the unit you are working on. This will discharge any static electricity from you onto the chassis, and prevent zapping the sensitive electronic parts.

⚠ WARNING: The wrist-strap and cord are electrically conductive and present a potentially LETHAL safety hazard. Once you are wearing it, keep the cord away from all live electrical circuits, outlets, sockets, contacts, electric heaters, or toasters for example.

- Damage caused to the unit due to improper installation or handling of these components will not be covered under warranty.
- If you prefer, please call Mackie Tech Support at 800-898-3211 to obtain a referral to an authorized service center.

Tools and parts

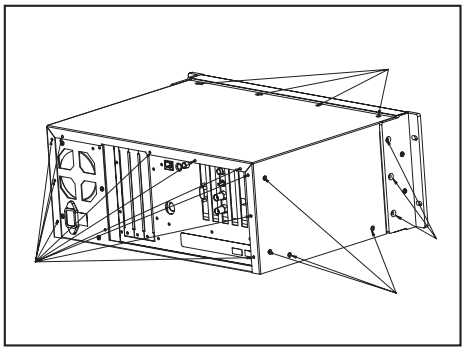
- We recommend a 3 Volt Duracell DL2032 battery or equivalent, available from most computer stores.
- You will need a sharp medium Phillips screwdriver, and safety glasses.
- In addition to the wrist-strap, this kit includes an IC chip-puller for pulling the old BIOS chip out of its socket.

Preliminary

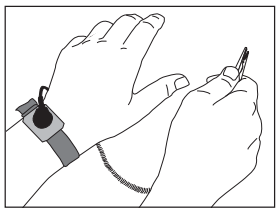
- Choose a brightly-lit, clean and dry area such as the kitchen table, and remove any crumbs, cereal, dust, milk, small children, pets, etc.
- Protect the table surface from scratching, or better yet, use an anti-static mat.
- Put on your safety glasses.

Procedure:

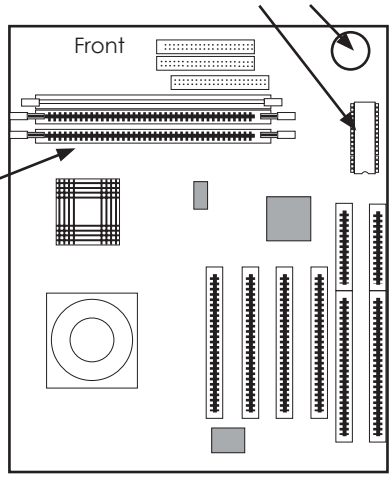
1. Turn the power off, and remove the power cord and all external cables from the unit.
2. Place the unit on your table, and remove the top cover by undoing the host of screws shown in this diagram. Just loosen the rack handle screws enough to remove the cover. **Note**: Do not touch any of the electronic parts.



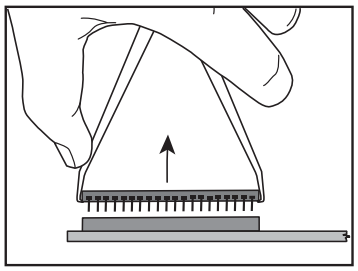
3. Put on the wrist-strap and connect the end of the cord to the metal chassis area of your HDR, where you can see bare metalwork to make a good electrical contact.



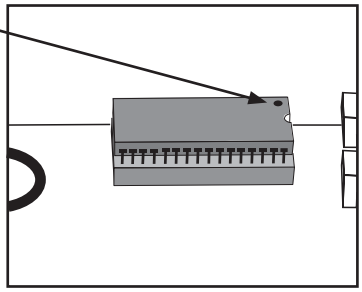
4. The battery and the 32-pin BIOS chip (U20) are located in the front left corner of the motherboard.



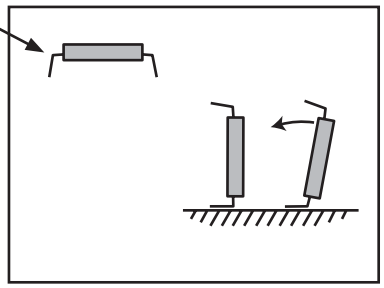
5. Push back the tab of the battery holder and catch the battery as it pops out.
6. If required, add 128 MB of RAM for a total of 256 MB. Follow all instructions which come with your RAM.
7. With no battery fitted, leave the HDR overnight, or 8 hours minimum, to drain the CMOS memory. Put the top cover back on, without the screws (keep the screws in a safe place). Don't forget to take off your safety glasses and ESD wrist strap.
8. Next day, put on the ESD wrist strap (see step 3), put on your safety glasses and remove the HDR top cover.
9. ⚠ Carefully install the new battery with the "+" side up.
10. Fit the chip-puller over the old BIOS chip and gently pull it straight up and out of its IC socket. Note that your puller may not look exactly like this, but they all grip the chip, and then you gently tease the chip out of its socket. (The chip-puller is not used to install the new chip.)



11. Remove the new BIOS chip from its anti-static bag. Always hold it by the plastic case, and do not touch the metal pins with your fingers.
12. Install the new BIOS chip, making sure that the notched end is pointing away from the battery. It is easy for it to go in the wrong way, so you must take care or you will damage your unit. Make sure that all pins are fully inserted into their sockets, then press down firmly (without touching the pins).



Note: If the pins of the new chip are not perpendicular to the body and won't fit into the socket, you can straighten them up as follows:



Hold the BIOS chip so all pins on one side are touching your table. Then gently rotate the body to the upright position, straightening all the pins on that side at once. Do not over-rotate or the pins will be bent inwards. Repeat for the other side. The chip should now fit.

13. Carefully wrap up the old BIOS chip in the anti-static bag, as you might need it again one day.
14. Remove the wrist-strap and save it and the chip-puller in a safe place.
15. Replace the top cover and secure all screws.
16. Remove your safety glasses. You look lovely.

After the upgrade

17. Plug in the HDR, connect a keyboard and monitor, and turn the system on.
18. While the HDR scans the memory, press the Delete key to enter the CMOS Setup.
19. Set the CMOS as shown on the following pages. Save your changes and exit the CMOS setup.
20. The HDR will restart and boot into the HDR OS. Your update is complete and your HDR will now support large external drives!
21. Right about now, it's a good time to relax with a nice cup of tea and a cheese sandwich.

Troubleshooting

- If your unit appears to be dead, or operating strangely, or your pet hamster is missing, please repeat steps 1 to 3 to open the unit.
- Check the new BIOS chip is in the right way, and that all pins are fully inserted.
- Check the new battery is fitted correctly, with the PLUS(+) sign on top.
- Check that no cables or wires have been disconnected or pinched.
- Check that any new RAM is fully inserted.
- Check your HDR OS is version 1.4 or higher.
- Please contact Mackie Technical Support at 800-898-3211 if you have any questions.

HDR 24/96 large external drive support BIOS settings

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Setting the CMOS

- See steps 17 and 18 to enter the CMOS setup.
- Use the HDR arrow keys to navigate through the CMOS options, and use the PgUp and PgDn keys to change the settings.

Standard CMOS Setup:

Date (mm:dd:yy) : ***Current Date***
Time (hh:mm:ss) : ***Current Time***

Hard Disks:	Type:	Size:	Cyls:	Head:	Precomp:	Landz:	Sector:	Mode:
Primary Master	Auto	0	0	0	0	0	0	Auto
Primary Slave	***None***	0	0	0	0	0	0	-------
Sec Master	Auto	0	0	0	0		0	Auto
Sec Slave	***None***	0	0	0	0		0	-------

Drive A: 1.44M, 3.5 in.
Drive B: None

Video: EGA/VGA
Halt On: All, But Keyboard

Base Memory:	640 K
Extended Memory:	261120 K
Other Memory:	384 K
Total Memory:	262144 K

(Note this table is for RAM upgraded to 256 MB)

Notes

- DO NOT use the IDE HDD AUTO DETECTION utility located in the main BIOS screen to mount IDE hard drives unless instructed by tech support. Instead, set the "Type" field for the Primary Master and Secondary Master drives in the drive setup menu above to "Auto." This will cause the BIOS to automatically detect any changes in drive status each time the HDR boots up.
- DO NOT select LOAD BIOS DEFAULTS or LOAD SETUP DEFAULTS utility located in the main BIOS screen. This will incorrectly set the CMOS values and may render certain HDR functions inoperable.
- Items on this page and the next, which are printed in ***italics*** usually require changes from the user.

BIOS Features Setup:

Virus Warning : Disabled
CPU Internal Cache : Enabled
External Cache : Enabled
CPU L2 Cache ECC Checking : Enabled

Quick Power On Self Test : ***Disabled***
Boot Sequence : A,C,SCSI
Swap Floppy Drive : Disabled
Boot Up Floppy Seek : ***Disabled***
Boot Up NumLock Status : On
Gate 20 Option : Fast
Typematic Rate Setting : Disabled
Typematic Rate (Chars/Sec) : 6
Typematic Delay (Msec) : 250
Security Option : Setup
PCI/VGA Palette Snoop : Disabled
OS Select For DRAM > 64MB : Non-OS2
Report No FDD for Win95 : Yes

Video BIOS Shadow : Enabled
C8000-CBFFF Shadow : Disabled
CC000-CFFFF Shadow : Disabled
D0000-D3FFF Shadow : Disabled
D4000-D7FFF Shadow : Disabled
D8000-DBFFF Shadow : Disabled
DC000-DFFFF Shadow : Disabled

Notes

- Choose ***Disabled*** for the "Quick Power On Self Test" to perform a comprehensive system test on boot, and choose ***Enabled*** for faster booting.

Chipset Features Setup:

Auto Configuration	: Enabled
EDO DRAM Speed Selection	: 60ns
EDO CASx# MA Wait State	: 2
EDO RASx# Wait State	: 2
SDRAM RAS-to-CAS Delay	: 3
SDRAM RAS Precharge Time	: 3
SDRAM CAS latency Time	: 3
SDRAM Precharge Control	: Disabled
DRAM Data Integrity Mode	: Non-ECC
System BIOS Cacheable	: Disabled
Video BIOS Cacheable	: Disabled
Video RAM Cacheable	: Disabled
8 Bit I/O Recovery Time	: 1
16 Bit I/O Recovery Time	: 1
Memory Hole At 15M-16M	: Disabled
Passive Release	: Enabled
Delayed Transaction	: Disabled
AGP Aperture Size (MB)	: 64

Power Management Setup:

Power Management	: User Define
PM Control by APM	: Yes
Video Off Method	: ***DPMS***
Video Off After	: ***Suspend***
MODEM Use IRQ	: ***NA***
Doze Mode	: Disable
Standby Mode	: Disable
Suspend Mode	: Disable
HDD Power Down	: Disable
Throttle Duty Cycle	: 62.5
PCI/VGA Act-Monitor	: Disabled
Soft-Off by PWR-BTTN	: Instant-Off
Resume on Ring	: ***Disabled***
IRQ 8 Break Suspend	: Disabled

** Reload Global Timer Events **

IRQ [3-7, 9-15], NMI	: Disabled
Primary IDE 0	: Disabled
Primary IDE 1	: Disabled
Secondary IDE 0	: Disabled
Secondary IDE 1	: Disabled
Floppy Disk	: Disabled
Serial Port	: Enabled
Parallel Port	: Disabled

PNP/PCI Configuration:

PNP OS Installed	: No
Resources Controlled By	: Manual
Reset Configuration Data	: Disabled
IRQ-3 assigned to	: PCI/ISA PnP
IRQ-4 assigned to	: PCI/ISA PnP
IRQ-5 assigned to	: PCI/ISA PnP
IRQ-7 assigned to	: PCI/ISA PnP
IRQ-9 assigned to	: PCI/ISA PnP
IRQ-10 assigned to	: ***Legacy ISA***
IRQ-11 assigned to	: PCI/ISA PnP
IRQ-12 assigned to	: PCI/ISA PnP
IRQ-14 assigned to	: PCI/ISA PnP
IRQ-15 assigned to	: PCI/ISA PnP
DMA-0 assigned to	: PCI/ISA PnP
DMA-1 assigned to	: PCI/ISA PnP
DMA-3 assigned to	: PCI/ISA PnP
DMA-5 assigned to	: PCI/ISA PnP
DMA-6 assigned to	: PCI/ISA PnP
DMA-7 assigned to	: PCI/ISA PnP

Used MEM Base Addr	: N/A
PCI Latency Timer (CLK)	: ***40***

Integrated Peripherals:

IDE HDD Block Mode	: Enabled
IDE Primary Master PIO	: Auto
IDE Primary Slave PIO	: Auto
IDE Secondary Master PIO	: Auto
IDE Secondary Slave PIO	: Auto
IDE Primary Master UDMA	: Auto
IDE Primary Slave UDMA	: Auto
IDE Secondary Master UDMA	: Auto
IDE Secondary Slave UDMA	: Auto
On-Chip Primary PCI IDE	: Enabled
On-Chip Secondary PCI IDE	: Enabled
USB Keyboard Support	: Disabled
Init Display First	: ***AGP***
KBC Input Clock	: 8 MHz
Onboard FDC Controller	: Enabled
Onboard Serial Port 1	: 3F8/IRQ4
Onboard Serial Port 2	: 2F8/IRQ3
UART Mode Select	: Normal

Onboard Parallel Port : ***Disabled***

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