

# HDCD<sup>®</sup> UPGRADE FOR THE LINK DAC III USERS MANUAL



14251 PESCADERO RD. LA HONDA, CA 94020  
(650) 747-0400 F.(650) 747-0405  
[WWW.MSBTECH.COM](http://WWW.MSBTECH.COM)

HDCD<sup>®</sup> is a registered trademark of Pacific Microsonics, Inc. in the United States and/or other countries. HDCD system manufactured under license from Pacific Microsonics, Inc. This product is covered by one or more of the follow US Patents: 5479168, 5638074, 5640161, 5808574, 5838274, 5854600, 5864311, 5872531, and Australia patent 669114. Other patents pending.

Thank you for purchasing the “HDCD Upgrade” for your LINK DAC. You should be very pleased with it’s performance. It adds several new features to your LINK. If you ordered the option factory installed, a storage and shipping box is included for the upgrade in case you ever need to return it to us for service. Please retain this box.

## Major Level Change with HDCD

The HDCD algorithms include a feature called peak extension. To accommodate this feature, the output level for non-HDCD and HDCD material without peak extension is reduced by about 50%. HDCD material with peak extension will remain at the normal level. Do not be alarmed if you notice a major reduction in output level with this option installed. It will have little effect on the quality of the sound, once the level has been compensated for in your volume control. HDCD recommends a variable gain amplifier to always provide the same output level but these are detrimental to good sound, so were not included.

## Automatic Decoding and Indicator

The HDCD upgrade automatically decodes and processes HDCD source material. The OPTION LED lights when HDCD material is present.

## Optional Phase Invert

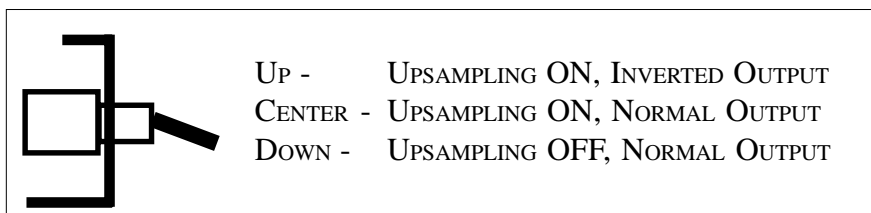
A small header (J3) is provided on the HDCD board. With a factory installation of just the HDCD upgrade, it is attached to the toggle switch on the rear of the unit. When the switch is DOWN or in the CENTER position, the phase is normal. When the switch is UP, the phase is inverted. If you made this installation and chose not to install the switch, the phase can be inverted by installing one of the jumpers removed from the LINK header to invert the phase. With no jumper or switch, the phase is normal.

## Upsampling Upgrade

The Upsampling upgrade can be installed at the same time as the HDCD upgrade. HDCD decoding cannot take place when upsampling is turned on. When the HDCD upgrade is installed and the upsampling upgrade is turned off, the option LED will light up whenever HDCD material is played, at full brightness, as opposed to the half brightness of the upsampling option. This way you can tell the difference between upsampling on, and HDCD.

## Special Toggle switch case with both Upgrades

If both the HDCD and Upsampling Upgrades are installed at the Factory, the toggle switch has the following function.



## Other Upgrades

This upgrade is compatible with the Nelson upgrade, but not the Virtual 3D upgrade. If you have not already tried the P1000 power base, this is another clear performance booster for any LINK. To go even beyond, please consider the Gold or Platinum LINK. MSB generally offers a full trade-in credit when upgrading to the Gold or Platinum.



# INSTALLATION

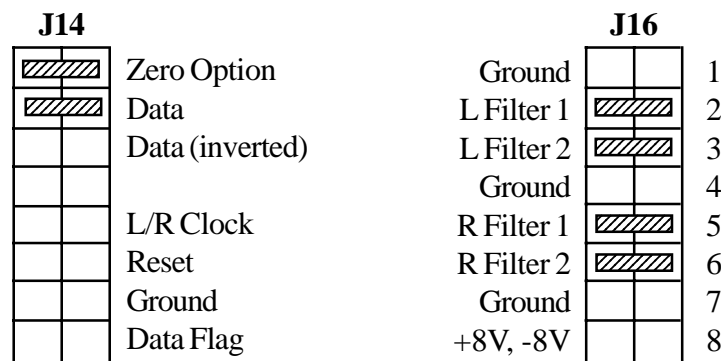
This section describes how to install the HDCD Upgrade in a LINK III. Disregard this section if the upgrade was factory installed.

## LINK III Preparation

Place the LINK III on a soft surface like a tablecloth or carpet. Disconnect the power supply. Remove the three philips screws on the back edge of the cover. Turn the LINK over and remove the three philips screws from the front edge of the cover. Carefully separate the base from the cover. Pick up the base and flip it over, placing it inside the cover. Take care not to disconnect the ribbon cable to the front panel. Place the LINK so that the RCA connectors are facing AWAY from you. This way all the diagrams will be oriented correctly.

## Remove the jumpers and install the board

Locate the headers near the right side of the LINK III board labeled J14 "DAC OPTION" and J16. Six jumpers are installed as shown. Remove these jumpers. Tape them to the inside of the base so they will not be lost. Install the upgrade board by plugging its sockets into these two headers. The board should be oriented so the writing is in the same direction as on the LINK board. Make sure the pins line up both up and down and right and left. It is very easy to shift the board one pin position in any direction. Before seating the board, inspect from all directions to confirm position. The board can then be pressed down firmly.

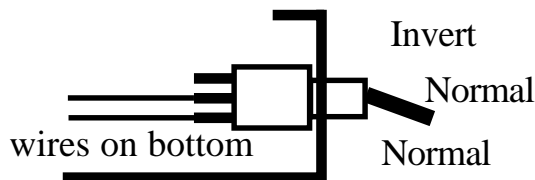


NORMAL POSITION OF LINK III JUMPERS

# INSTALLATION, CONT.

## Switch Installation

On the back of the LINK III is a 1/4" hole with a plastic plug in it, next to the power connector. Remove the plastic plug. Install the switch in the hole oriented as shown. The two wires attached to the switch are oriented down, and the empty pin on the switch goes up. Plug the switch into J3 "Phase". The connector can be oriented either way in J3. If you do not want to use the switch, or the upsampling upgrade is already installed, J3 may be left empty for normal phase, and a jumper may be installed in J3 for inverted phase. (Use one of the jumpers removed from headers).



## Reassemble the LINK III

Flip the base over, taking the twist out of the ribbon cable going to the front panel board. Slide the base into the front flange, aligning the base and front. Install the three philips screws in the bottom front. Flip the LINK over and install the three screws in the cover.

## Test Upgrade

If anything does not conform to this test procedure, immediately disconnect the power and call or email MSB for help. Plug power into the LINK III. The power light should come on. Apply a digital source. The source should be indicated with an LED and you should hear a small click. You should immediately hear audio from the analog outputs. As you turn the toggle switch on and off, music should be heard in either position. The level of the audio should be about half what it was before the upgrade was installed. When an HDCD CD is played, the option LED should light.

## MORE WAYS TO ACHIEVE INCREDIBLE SOUND... FROM MSB

### THE NELSON UPGRADE (FACTORY INSTALLED ONLY)

A major audiophile upgrade to the LINK III, adding a professional balanced digital input, all new analog output stage and beefed up power supplies. Must hear to believe! **\$485**

### UPSAMPLING (USER INSTALLABLE)

MSB has created a way to upsample from ANY lower audio standard to 24 bit - 96 kHz. Includes extra jitter reduction and back panel switch. **\$199**

### 192 KHZ

In keeping with MSB's goal of providing clients with the most up-to-date technology, the Link III circuits are fully upgradable. As 192 kHz software and hardware becomes available, we plan to offer an upgrade.

### VIRTUAL 3D (USER INSTALLABLE)

This upgrade allows those with two speaker setups to enjoy Pro Logic through a series of digital filters that project five "virtual speakers" into space. **\$149**

### MSB GOLD LINK DAC

The GOLD LINK DAC provides an unparalleled sound experience with virtually any available digital source. Four internal stereo DA converters give improved signal-to-noise and channel separation characteristics, providing outstanding signal quality to your preamplifier. The Gold has little output filtering for the best possible sound, electromagnetic shielding of all the key components and high performance, high slew rate operational amplifiers. This DAC delivers incredible "focus" and depth of soundstage to the listening environment.

*(Full value LINK trade-in offered!)* **\$1295**

### MSB PLATINUM LINK DAC

This 46 bit - 384 kHz sign magnitude R2R ladder DAC with four independent discrete converters goes way beyond any other DAC. It can handle greater resolution and higher sampling frequencies than any existing format, for maximum S/N and channel isolation. The Platinum upsamples lower sampling rate sources to 24 bit - 96 kHz. It has up to 5 digital inputs (ATT glass, Toslink optical, Coaxial SP/DIF, Balanced AES/EBU and IEEE 1394 Firewire) as well as balanced and single-ended analog outputs. Selectable digital filter response (interpolation and slope) give you complete control. The painstaking detail, care and phenomenal sound you demand from a high-end DAC.

*(Full value LINK or Gold LINK trade-in offered!)* **\$3395**

### MSB INTERCONNECTS

*HIGH QUALITY, AFFORDABLE CABLE PRODUCTS*

6 RCA to DB-25	<b>\$95</b>
Digital Audio	<b>\$35</b>
AC3-RF - for LD	<b>\$35</b>
Audio - Triple Shielded	<b>\$45</b>
S-Video - 2m	<b>\$35</b>
Video	<b>\$35</b>
Toslink Optical 1m - also 2m, 15m	<b>\$45</b>
Red Hawk Optical 1m - also 3m, 20m	<b>\$95</b>
MSB Custom Digital	<b>call</b>

