

# PLATINUM

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## BY MSB TECHNOLOGY



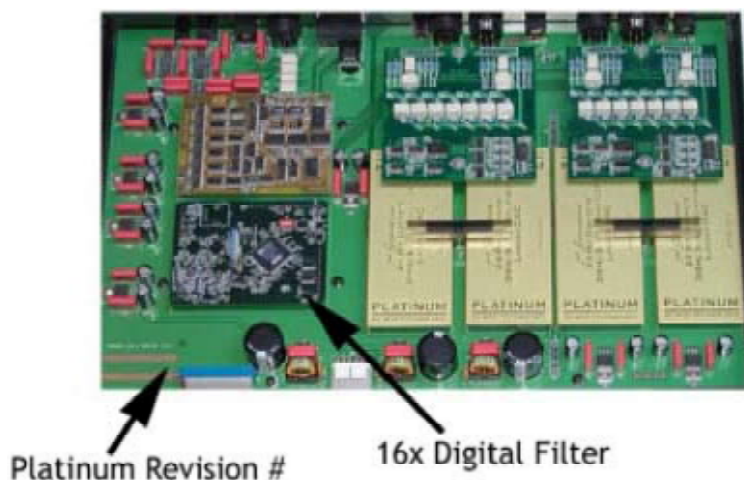
# SIGNATURE 32X DIGITAL FILTER USERS MANUAL

REV 1 (4/08)

### 16x Digital Filter Installation Procedure:

- 1) Remove one Side Panel (End Cap) by removing 4 Allen Screws as shown.
- 2) Remove 6 Philips screws from top and bottom of cover. Remove cover, and disconnect ribbon cable that attaches the Front Display to the Platinum Main Board. Reference CD Players will have more than one ribbon cable; both will have to be removed. Set cover, Screws and End cap aside.
- 3) Remove old Digital Filter Board, and install your new 32x Digital Filter. Be sure to properly align the board so the pins of the filter board are properly mated to the socket on the Main Board. Depending on your Platinum, there may be extra pins on the Filter Board. This is OK.  
Note: The DIP switch on the 32x Digital Filter board is pre-set by MSB. It does allow you certain options; please see the "Operation" section of this manual.
- 4) Locate the Revision Number of the Platinum Main Board. If your Board Revision is 6.0 or above, you may skip the rest of this installation and proceed to the "Operation" section of this manual.

*For Revision 5.2 and below please check the Serial Number on the back of the machine. If the Serial Number is followed by the letter "T" then you may proceed to the "Operation" section of this manual. If the Serial Number does not contain the letter "T" you will need to replace the DAC Modules in your machine at this time for proper operation. If you did not receive new DAC Modules with this upgrade, please contact MSB to make proper arrangements. For the best performance gain of your new upgrade, we highly recommend that you upgrade your DAC Modules at this time to the latest Generation II DAC, or the Platinum Signature DACs. It is possible to use your first generation DAC Modules but they must be sent to MSB to be modified for proper operation with this upgrade. NOTE: If you have a Rev. 5.2 or earlier Main Board, and have previously Installed Generation II or Signature DACs as part of another upgrade, you will need to send these Modules to MSB for modification or exchange.*



### **The Filter Option Button**

On most Platinum products, the Platinum DAC, Platinum Plus, Platinum DAC II, III and the Platinum Reference CD Player, a single front panel button allows some control over the DSP. The Filter Option button allows you to select each of the two standard filters programmed into the DSP. The Filter Option button also allows you to cancel any temporary filter that has been loaded.

The Filter Option Button Out is the preferred filter setting of MSB. The output levels of MSB DACs are quite high to accommodate passive preamps. If you are using an active preamp, switch the filter button which will result in a 6 dB level cut, making the MSB DAC meet standard output level requirements.

Toggling the Filter Option Button will cancel any externally loaded Temporary Custom Filter which may be active.

### **The Onboard Option Switch**

The MSB 32x Digital Filter includes an onboard option DIP switch, which is a small multiple position switch on the 32x Digital Filter board that allows additional configuration. With this switch you may select the onboard Ultra Clock operation, Dither, Mute Mode, Single Ended Operation and the Motherboard Revision.

#### **Switch 1, Clock Replacement Mode:**

Switch 1 ON = Clock Replacement Mode

Switch 1 Off = Low Latency Synchronized Mode, or no onboard clocks installed.

Switch 1 allows you to enable the onboard Ultra Clock option. When enabled this option will completely replace the incoming clock with an ultra low jitter TCXO based clock. The DSP monitors the incoming sample frequency and detects standard sample rate signals, 44.1Khz, 96Khz, 176.4Khz, 192Khz and 384Khz. The onboard clock then completely replaces the incoming clock. Other sampling frequencies use the incoming clock from the source. The DSP allocates a huge internal FIFO buffer (1/4 second) that stores the incoming audio to decouple the incoming and outgoing data streams. Long absolute digital silences in the music stream, such as between tracks and during pauses, are selectively shortened or lengthened by the DSP to maintain data synchronization. This results in a significant delay between the audio source and the analog audio. You will not normally notice this delay unless video is synchronized to the audio. For this reason the 48Khz sampling rate (which is 99% video) only operates in Low Latency Mode with no clock replacement. While using the onboard clock some very long musical performances greater than one hour with no silences, pauses or track skips may cause a buffer overflow when using a standard transport. This will sound like a small CD skip. You will probably never encounter this case but if you do MSB can install a special ultra high accuracy clock in your transport or other audio source to totally eliminate this possibility.

#### **Switch 2, Dither Mode:**

Switch 2 ON = Dither On

Switch 2 Off = Dither Off

Switch 2 allows you to enable the onboard dither generator. With the dither activated the MSB 32x Digital Filter continuously adds a tiny amount (-110db) of random ultrasonic dither to the Output. We have found through extensive listening tests that this tiny amount of dither greatly increases the perceived resolution of the audio without harming the music in any way. The dither is added separately in common



mode to the positive and negative DACs in the Platinum and mostly cancels itself on playback helping to linearize the DACs. The dither is generated by a highly random, non-repeating white noise generator and is then digitally filtered to remove all dither content close to the audio band. All of the dither between 0Hz and 40Khz is removed. Unlike some noise shaping algorithms like DSD the very low level of the ultrasonic dither involved should never cause system high frequency related problems. MSB highly recommends that you keep the dither enabled.

### **Switch 3, Reserved:**

Switch 3 ON = Future Upgrade Feature On

Switch 3 Off = Future Upgrade Feature Off

Switch 3 is reserved for future upgrades. Please keep this switch off.

### **Switch 4, Mute Mode:**

Switch 4 ON = Play any Source

Switch 4 Off = Mute Data Sources

Switch 4 allows your Platinum to play audio marked as data. If the digital source marks the audio as data, as sometimes happens, and this switch is off no sound will be produced by the Platinum. Turning this switch off will allow the Platinum to mute unwanted data such as Dolby Digital data. Turning this switch on will allow the Platinum to play audio from any source.

### **Switch 5, Balanced Mode:**

Switch 5 ON = Normal Balanced and SE Mode

Switch 5 Off = Special Single Ended Only Mode

Switch 4 allows manipulation of the individual data streaming to each DAC. If the switch is ON, the Platinum operates normally with both the balanced and single ended outputs active. If this switch is OFF, the Platinum reverts to a special mode in which all four DACs in the Platinum reproduce the same analog phase. This allows some interesting custom analog outputs from the Platinum. Each phase on the balanced XLR connector is the same allowing the connection of a Platinum to three single ended components. This mode also gives MSB the ability to custom modify your Platinum to sum together each pair of DACs. This upgrade increases the sound quality of the single ended RCA output while disabling the balanced XLR jack. If you are interested in this custom upgrade contact MSB for details.

### **Switch 6, Mother Board Revision:**

Switch 6 ON = Motherboard Revision 6.0 or Higher

Switch 6 Off = Motherboard Revision 5.9 or Lower

Motherboard Revisions 5.x and below require this switch to be OFF. Motherboard revisions 6.x and higher require this switch to be ON. You may read the motherboard revision at the lower right corner of the motherboard or as the second digit from the right in you Platinum's serial number. The serial number is located on the lower right rear corner of the Platinum's jack panel.

The MSB 32x Digital Filter allows you to load custom filters and software from a standard CD transport with MSB's CD update service. Special features and filters are available to customize your MSB 32x Digital Filter. If you have special requirements please contact MSB Technology.