



The Sound That Will Move You

# MB1 Digital Bass Synthesizer Installation Manual



Earthquake Sound Corporation  
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### **CAUTION:**

Earthquake products are capable of generating high sound pressure levels. You should exercise caution when operating these products. Long term exposures to high levels of sound pressure will cause permanent damage to your hearing. Sound pressure levels exceeding 85dB can be dangerous with constant exposure. Set your audio system to a comfortable loudness level. Earthquake Sound Corporation does not assume liability for damages resulting from the direct use of Earthquake amplifiers or other Earthquake products, and urges users to play their music at moderate listening levels.

### SOUND LEVEL      DURATION IN HOURS

90	8	This chart shows Permissible Noise Exposure according to the US Governments' Occupational Safety and Health Administration (OSHA) regulations that were in effect at the time of this publication (as per 29 CFR 1910.95, Table G-16).
92	6	
95	4	
97	3	
100	2	
102	1 - 1 1/2	
105	1	
110	1/2	
115	1/4 or less	

## OUR THANKS

Thank you for choosing Earthquake Sound's MEGA BASS digital bass synthesizer for superior enhancement of your vehicle's audio system. With proper installation and responsible listening, your bass synthesizer will give you years of phenomenal listening enjoyment.

We strongly recommend having your new bass synthesizer installed by an authorized Earthquake Sound dealer. Installation professionals employed by your dealer have the correct tools and knowledge to install your product neatly and successfully. Also, when your new products are installed by an authorized dealer, your product will include a FIVE (5) YEAR LIMITED WARRANTY. If you choose to perform your own installation, your warranty will be subject to limitations. Dealer policies on handling warranty requests may vary from one dealer to the next. Please read the warranty information (page 10-11) in its entirety and use good judgment when making these vital decisions.

## CARE AND MAINTENANCE

Your Earthquake MB1 bass synthesizer is an example of superior design and craftsmanship. The following advisories will help you care for your bass synthesizer so you can enjoy it for years to come:



Keep the bass synthesizer dry. If it gets wet, wipe it dry immediately. Liquids contain minerals that can corrode electronic circuits. Additionally, liquids can cause severe electrical shock.



Use and store the bass synthesizer only in normal temperature environments. Temperature extremes can shorten the life of electronic devices and warp or melt plastic parts.



Handle the bass synthesizer gently and carefully. Dropping it can damage the circuits or cause components to break or become loose. These kind of actions can cause the units to work poorly or improperly.



Keep the bass synthesizer away from dust and dirt, which can cause premature wear of parts.

## WHY THE MB1 MEGA BASS?

The bass response in a system is affected by four (4) factors:

1. The acoustics of the vehicle
2. The location of the speakers
3. The music being played
4. The speakers and/or speaker enclosures

Due to the variations in the recording process, the MB1 is engineered with amazing features to help restore any low frequencies lost during the process or cause by the source unit, regardless of the different environment acoustics.

### **ADVANCED DIGITAL BASS RESTORATION SYSTEM**

The MB1 MEGA BASS Digital Synthesizer contains a bass maximization circuit that perfectly reproduces and pumps low frequency back into the voltage line. Therefore, this synthesizer will enhance bass impact when using CDs, tapes and portable media players.

### **SUBWOOFER MAXIMIZATION CONTROL CIRCUITRY**

The MB1's advanced bass equalization circuit contours the restored bass to your speaker system.

### **EASY ACCESS DASH MOUNT CONTROL CENTER**

The MB1 is designed to be mounted anywhere in the vehicle, with the exception of the obvious places like the bumpers and gas tank. Each MB1 comes with a dash mount control center which allows you to control the intensity of the system's bass output right from the driver's seat. In addition, the dash mount unit comes with a built-in dual LED that dims and brightens as the bass increases and decreases.

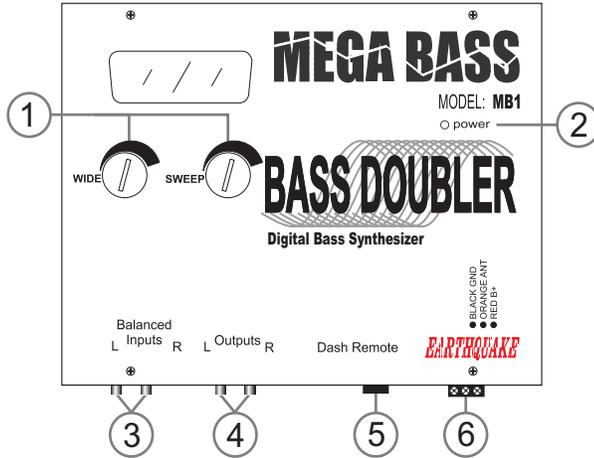
### **DPF (DC PROTECTION FILTER)**

The MB1's DPF overdrive circuitry allows the user to have massive, hard hitting, concrete shattering bass while protecting the speakers from DC failures, commonly found in other bass enhancement devices.

### **BASS EXPANDER LIMITER**

The MB1's Bass Expander Limited circuitry allows it to enhance the bass output of any audio system while controlling damaging burps.

## MB1 OVERVIEW - EXTERNAL



### ④ OUTPUT CONNECTIONS

These RCA connectors should be connected to the next component after the MEGA BASS, such as a crossover, equalizer or amplifier.

NOTE: The MB1 should be in line before a crossover.

### ⑤ DASH INPUT CONTROL

This allows you to connect the MB1's remote control knob. You can mount the knob anywhere you want. However, it is commonly mounted in the front of the vehicle.

NOTE: The remote control knob **must be** connected for the MB1 to operate properly.

### ⑥ POWER CONNECTIONS

This connector allows you to connect the Ground and Remote TURN-ON signals to the MB1. Carefully remove the connector. In a well lit area, properly connect all the wires. Once you decide the mounting location of the MB1, plug the connector back to the MB1.

### ① BASS CONTROLS

The WIDE knob adjusts how wide of a frequency range the MB1 will affect. The SWEEP knob allows you to pick the center frequency (between 27Hz and 63Hz) that you want the MB1's restoration circuit to maximize.

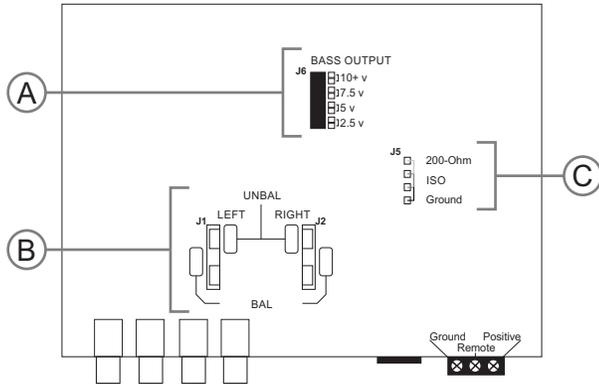
### ② POWER INDICATOR

Indicates that all the wires are properly connected. If it does not light up, please check all wiring.

### ③ BALANCED INPUTS

Designed to handle very high signal voltage up to 15 Volts, these balance inputs also help minimize feedback.

## MB1 OVERVIEW - INTERNAL



### **(A) BASS OUTPUT CONTROL JUMPERS**

Not all systems are designed the same way, some systems are designed strictly for SPL while others are for average use. The MB1's maximizer circuit can either increase or decrease the signal voltage of the bass restoration circuit. We recommend that you try the factory setting before any other since in most systems, the factory setting will suit you fine. If the factory setting does not suit your system, you may want to change these jumpers to a higher or lower setting to maximize the bass output and protect the speakers. Please refer to pages 7 and 8 for both recommended and factory settings.

### **(B) INPUT GROUNDING**

For most systems, you can leave this jumper set in the BALANCED position. In some systems, the source unit may look for a ground through the RCA connectors. If that is the case, you should go ahead and change the jumper to the UNBALANCED position.

### **(C) GROUND ISOLATION JUMPERS**

Occasionally, alternator whine may appear in a system because the source unit and amplifier may use different grounding. To help in this situation, we have provided alternative grounding connections.

**WARNING:** Make sure your system is turned off before you alter these jumpers.

## PRE-INSTALLATION PROCEDURE

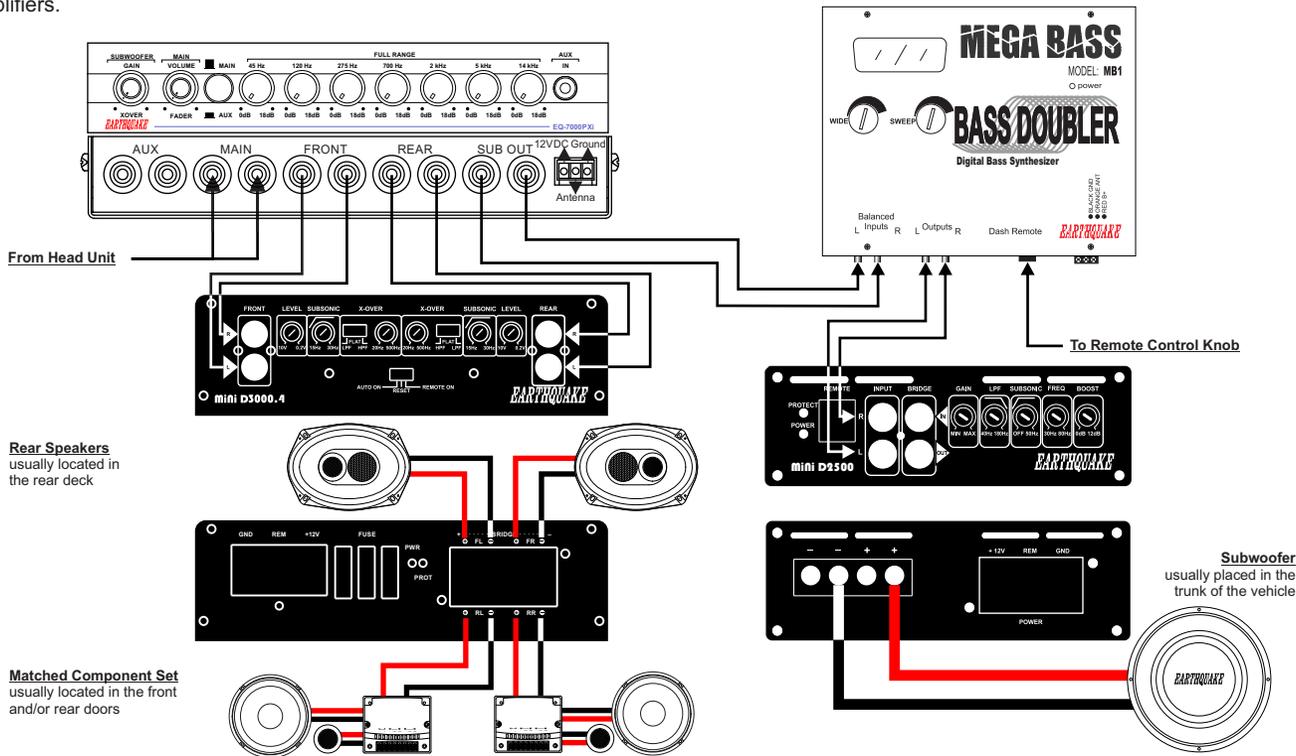
### **(!) DISCONNECT THE NEGATIVE TERMINAL OF YOUR BATTERY PRIOR TO INSTALLATION**

**WARNING:** Failure to disconnect the negative terminal of your battery prior to installation may result in severe shock and/or damage to the components in your system.

## INSTALLATION & WIRING CONFIGURATION

MB1 MEGA BASS Digital Synthesizer needs to be installed in the signal path as close as possible to the source unit (between a head unit and an external amplifier), before any crossover circuit. Although the MB1 is close to the source unit's signal, it is usually mounted in the rear of the vehicle, as close as possible to the amplifiers.

If you are using an equalizer, connect the MB1 to the SUB OUT of the equalizer and use it to drive the bass amplifier, as shown below.



### REMOTE IN

Connect a 22-gauge to 18-gauge wire from the head unit's remote turn-on to the REMOTE-IN connector of the MB1.

### POSITIVE (+12V)

Insert an 18-gauge or larger wire into the connector labeled POWER on the connector of the MB1. Connect it to a good 12V source, fused at 1 Ampere.

### GROUND CONNECTION

Use the same gauge wire as you did for the 12V connector on the MB1's NEGATIVE terminal of the battery, a ground bus, or a verified ground location. The factory head unit ground is not a good ground.

When all connections are complete, you may connect the negative battery terminal to its original state.

## ADJUSTING THE BASS OUTPUT SETTING

The MB1 is the most powerful bass component on the market. It is able to dramatically enhance any audio system to audiophile preference status. It is equipped with several different bass output selections.

We recommend that you first try the factory setting (5V) as it may just be what you are looking for. Should you need to make adjustments to the factory setting, please use the below chart for guidance.

Bass Output Setting	Amp Input Voltage	Minimum Speaker Size
2.5V	3V or less	8-inch
5V	5V or less	10-inch
7.5V	7.5V or less	12-inch
10+V	10V or less	Some Kind of Beast

## SPECIFICATIONS, FACTORY SETTINGS & OPTIONS

Maximum Input Level.....15 Vrms  
Maximum Output Level.....13.5 Vpeak  
Frequency Response.....10Hz - 80kHz  $\pm$ 0.3dB  
Total Harmonic Distortion.....0.001%  
Balanced Input Noise Rejection.....> 60dB  
Input Impedance.....10 kOhms  
Output Impedance.....150 Ohms  
Power Supply.....High headroom PWM  
Power Draw.....160 mA  
Recommended Fuse Rating.....1 Ampere  
Dimensions (H x W x D).....1-1/8" x 8" x 5-3/4"  
(including RCAs)  
Weight..... 1.7 lbs

All specifications are measured at 14.4 VDC.

Adjustable Settings	Factory Setting	Other Options
Bass Frequency.....	40Hz.....	27Hz - 63Hz
Bass Bandwidth.....	Wide.....	30Hz - 250Hz
Bass Output Setting.....	5 Volts.....	2.5V, 7.5V and 10+V
Input Circuit.....	Balanced.....	Unbalanced
Ground Isolation.....	Isolated.....	200-Ohm, Ground
Subsonic Filter.....	33Hz.....	25Hz, 30Hz, 35Hz, 40Hz, 45Hz

## TECH SUPPORT

US Toll Free  
E-mail

1-800-576-7944  
tech@earthquakesound.com

## **Troubleshooting**

### **NO POWER**

If the LED on the dash remote is off, check the POWER light on the chassis of the MB1.

If the POWER light is on, then check to make sure the cable connecting the remote to the MB1 is not pinched or disconnected.

If the POWER light is off, then check to make sure the power and remote turn on wires are connected, or the fuse is not blown.

### **NO BASS RESTORATION**

When the system is playing but there is no difference in the sound/bass, try turning the dash remote knob clockwise. If there is no change, then make sure that the MB1 is installed in the right part of the signal path.

### **SOUND IS DISTORTED**

If the speakers are moving way too much and produce distorted sound, then decrease the amount of bass restoration by turning the dash remote knob counter-clockwise. Be sure to adjust the DPF frequency (higher or lower) accordingly to the setting of your Bass Control.

### **STILL NO GOOD**

Adjust the Bass Controls by turning the SWEEP control clockwise to raise the center frequency. If distortion remains, power down the MB1 and change the bass output settings inside the unit (see page 5).

## WARRANTY GUIDELINES

Earthquake warrants the original purchaser that all Factory Sealed New Audio Products be free from defects in material and workmanship, under normal and proper use, for a period of five (5) years from the date of purchase (as shown on the original sales receipt with serial number affixed/written on it).

The five (5) years warranty period is valid only if the product is properly installed by an Earthquake authorized party, and the warranty registration card is properly filled out and sent to Earthquake Sound Corporation. If the product is installed by a non-authorized party, a ninety (90) day warranty period applies.

### (A) Five (5) years limited warranty plan coverage guidelines:

- First year: Earthquake pays for labor, parts, and ground freight (only in US mainland, not including Alaska and Hawaii) back to customer.
- Second, third, fourth & fifth year: Earthquake pays labor only. Customer must pay for parts and freight both ways.

### (B) Warning:

Products (sent for repair) that are tested by Earthquake technicians and deemed to have no problem, will not be covered by the five (5) years limited warranty. Customer will be charged a minimum of one (1) hour of labor (ongoing rates) plus shipping charges back to customer.

### (C) Earthquake agrees to repair or replace - at our option - all such defective products/parts subject to the following provisions:

- Defective products/parts have not been altered or repaired by anyone other than an Earthquake factory approved technician.
- Products/parts are not subjected to negligence, misuse, improper use, or accident.
- Products/parts are not damaged by improper line voltage or used with incompatible products.
- The serial number or any part of it has not been altered, defaced or removed.
- Products/parts have not been used in any way that is contrary to Earthquake's written instructions.

### (D) Warranty Limitations:

Earthquake warranty does not cover products that have been modified and/or abused, including but not limited to the following:

- Damages to enclosure or parts due to misuse, abuse, or improper use of cleaning materials/methods.
  - Bent frame, broken speaker connectors and burnt tracers on PCB.
  - Fading/deterioration of components and finish due to improper exposure to elements.
  - Product/part damaged due to poor packaging or abusive shipping conditions.
  - Subsequent damage to other products.
- A warranty claim will not be valid if the warranty registration card is not properly filled & returned to Earthquake with a copy of the sales invoice.

### (E) Service Request:

To receive product(s) service, contact Earthquake Sound's service department at (510) 732-1000 and request an RMA number (Return Material Authorization), item(s) shipped without a valid RMA number will be refused. Make sure you provide us with your complete and correct shipping address, a valid phone number, and a brief description of the problem you are experiencing with the product. In most cases, our technicians might be able to resolve the problem over the phone, thus eliminating the need to ship the product.

### (F) Shipping Instructions:

Product(s) must be packaged in its original protective box(es) to minimize transport damage. Shipper claims regarding item(s) damaged in transit must be presented to the carrier. Earthquake Sound Corporation reserves the right to refuse improperly packed product(s). A copy of original sales receipt must accompany product(s) returned for service.

We encourage you to include a written description of the problem inside the package. Ship product to:

Earthquake Sound Corp.  
2727 Mc Cone Avenue  
Hayward, CA 94545

You are responsible for the cost of shipping the product to Earthquake Sound Corporation.

(G) Disputes Resolution:

All disputes - between clients and Earthquake Sound Corporation - resulting from the five (5) years limited warranty policy must be resolved according to the laws & regulations of the county of Alameda, California.



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Earthquake Sound reserves the right to amend details of the specifications without notice.