



**GUIDE**

**2003**  
EDITORS' CHOICE  
PLATINUM AWARD



*Simply  
The  
Most  
Amazing  
Subwoofer  
I've  
Ever  
Tested.*

*There  
Might  
Be  
Better  
Subwoofers  
On  
The  
Planet,  
But  
I Haven't  
Heard  
Them.*

*For  
The  
Ultimate  
In  
Gut  
Wrenching  
Bass.*

# ***Nova***

*Power From The Heavens*

*SperNova  
MKIV-10  
&  
MKIV-12  
Powered  
Subwoofers  
Operation  
Manual  
&  
Technical  
Guide*

## On A Personal Note...

Dear Valued Customer,

Welcome to the eclectic world of Earthquake High Fidelity sound systems; you are about to experience the SuperNova subwoofer. This system is designed to dramatically enhance your enjoyment of music and films at home, by adding power and impact to low frequency sound effects.

Earthquake Sound Corporation is located in the heart of the Silicon Valley. It specializes in manufacturing high end Home and Car audio products ranging from the smallest driver to the loudest subwoofer system. In its dedication to excellence, Earthquake has maintained extensive programs in research and development to provide you with the highest quality audio products.

This owners manual is designed to better acquaint you with the SuperNova subwoofer system, and to guide you through the phases of system design and application. It is imperative that you read this manual in its entirety. EARTHQUAKE technicians and staff are looking forward to answer any questions you might have, please call (1-800-576-7944).



**CAUTION:** the SuperNova subwoofer system is capable of generating high sound pressure levels. You should exercise caution when operating this subwoofer system. 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. The SuperNova subwoofer system is designed to generate high levels of low frequencies (110 dB to 128 dB at 15 Hz to 20 Hz) and this will transmit a tremendous amount of vibration into walls, shelves and the structure; thus causing sheet rock flexing, glass and other objects to fall off shelves. Earthquake Sound Corporation does not assume liability for damages resulting from the direct use of the SuperNova, and urges users to play the SuperNova in moderate levels.

Joseph J. Sahyoun, Vice President and inventor of the SLAPS, proudly showing off a SLAPS112 at one of the subwoofers assembly lines.



## Safe & Proper Handling Of Your SuperNova.

The SuperNova subwoofer system weighs over 60 Lbs. It is considerably heavy for an average person to carry or maneuver. To prevent injuries, and eliminate any possible damage to your SuperNova, we encourage you to employ the help of a friend when unpacking the unit; further we suggest the following:

#1. Always wear a back support belt when carrying / lifting the SuperNova.

#2. If possible, get someone to help you move the SuperNova around.

#3. Do not apply pressure or push against the face of the speaker; this will cause irreparable damage to the cone and suspension.

#4. When carrying the SuperNova, make sure that the speaker is on the other side, away from your chest (eliminating the chance of pushing against the face of the speaker).

#5. Do not drop the SuperNova, or subject it to sudden shocks. This will damage the external finish and weaken the enclosure, creating air leaks.

#6. Avoid exposing the SuperNova to moisture. Water will damage the wood structure as well as the amplifier and speakers.

#7. Cleaning the SuperNova is best done using soft cloth; if needed, use mild detergent with water. Like with any other electrical unit, always unplug the SuperNova before cleaning it.

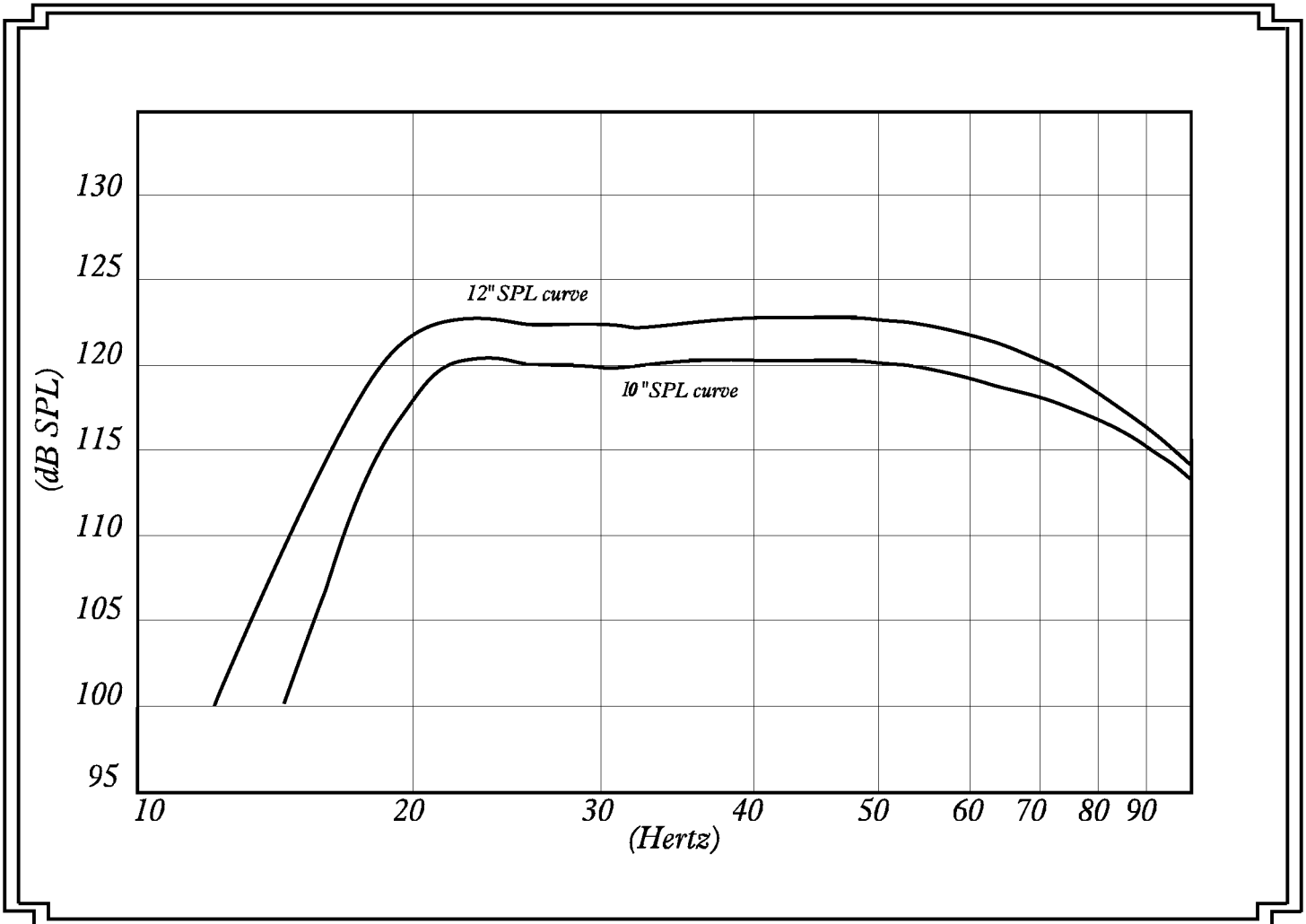
### Unpacking Your SuperNova

Always wear a back support, and get someone to help you carrying / lifting the subwoofer



Do not apply pressure or push against the face of the speaker. When carrying the Kompressor, make sure the speaker is on the other side away from your chest.

## MKIV 10" & 12" Performance.



### Independent Test Report:

*dB measurements as tested by WIDECRREEN REVIEW, Buyer's Guide, 2000.*

	MODEL	DRIVER	dB@40Hz	dB@35Hz	dB@30Hz	dB@25Hz	dB@20Hz	dB@18Hz
EARTHQUAKE	MKIV 15	15"	117	117	116	115	102	98
B & W	4000 ASW	15"	115	115	115	114	102	N/A
BAG END	S 18E	18"	110	112	110	108	100	N/A
TRIAD	PLATINUM	18"	N/A	110	N/A	106	92	90
VELODYNE	F 1800R	18"	112	112	113	110	98	N/A
ENERGY	ES 18XL	18"	114	112	112	106	98	90
PARADIGM	SERVO 15	15"	112	110	110	106	96	90
BAG END	INFRA 18	18"	108	108	106	102	90	N/A
EARTHQUAKE	MKII 12	12"	113	113	113	106	98	
M & K	MX 5000	12"	N/A	110	N/A	106	92	
VELODYNE	HGS 12	12"	106	105	108	102	90	
LINN	AV5150	12"	N/A	110	N/A	104	N/A	

## Connecting Your Subwoofer

### Low level -RCA- audio input connection:

This is the best way to drive an audio signal into the Kompressor subwoofer. Today, all signal processors (5.1/6.1 and more advanced ones) come equipped with built-in pre-amplifier outputs (RCA) that include a subwoofer output.

Generally, the SUB/OUT is in mono format. As shown in the photos across, connect the SUB/OUT from the processor to the Kompressor using a "Y" connector to feed both RCA inputs of the subwoofer.

We strongly recommend that you use the best available RCA connectors and cables. High quality cables are normally triple shielded, and the connectors are gold plated with forceful grasping (refer to Earthquake line of accessories- SI superior Interconnect -at [www.earthquakesound.com](http://www.earthquakesound.com)).



*RCA connection from Processor to a Kompressor using a "Y" connector.*

### High level audio input connection:

This is the least desired way to drive an audio signal into the subwoofer. Older stereo systems are not equipped with pre-amplifier audio outputs, normally they come with stereo speaker outputs (left & right).

Using "banana" plugs, connect the speaker outputs to the corresponding Subwoofer high level inputs (marked "FROM RECEIVER"). In this configuration, the front stereo speakers (towers) can be powered up by connecting them to the subwoofer speaker outputs (marked "TO SPEAKERS"). The amount of power (watts) driven into the stereo speakers (towers) is identical to the amount of power (watts) fed into the SuperNova from the stereo system (ratio 1:1).

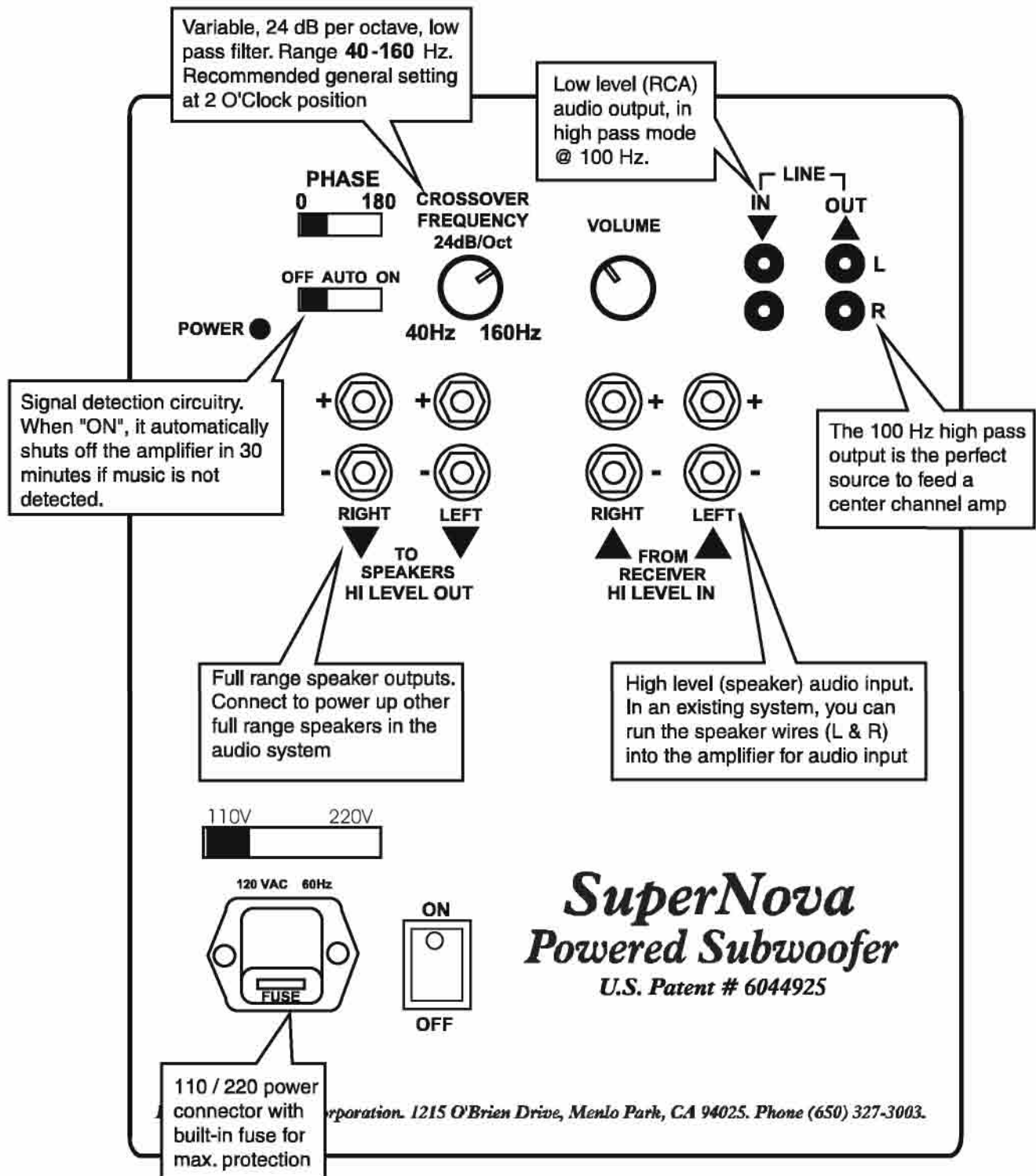


### AC power connection:

The SuperNova subwoofer is available in two models: 110V and 220V/24. The power socket is fused to protect the amplifier from surges. Do not over-fuse; replace the fuse with identical value.



## 200 Watts Class A/B High Efficiency Amplifier.



- \* 200 watts class "AB", high efficiency power amplifier.
- \* 24 dB / Octave variable filter from 40 Hz to 160 Hz.
- \* Automatic signal detection circuitry, When "ON", it automatically turn on the subwoofer when an audio signal is detected. It also shuts the subwoofer off after 30 minutes if no signal is detected.
- \* High level (speaker) audio inputs + Low level (RCA) audio inputs.
- \* Full range speaker outputs that can be used to power up other full range speakers in the system.

## SLAPS Patented Technology.

Beside its many advanced features, the SuperNova is armed with the Symmetrically Loaded Audio Passive System - SLAPS (patented by Earthquake Sound Corporation). The SLAPS is capable of moving more than 4" peak to peak at 15Hz. More air movement translates to higher SPL; the new passive system adds in excess of 5dB at 15Hz, that is more than twice as loud at that frequency.

How is that possible? Current passive woofer technology relies upon non linear, limited movement suspension. In contrast, the SLAPS employs dual (identical) suspensions, allowing the passive driver to move the same amount of air in either direction. Further, the components used to build the suspension allow for long excursions with no physical deformation or limitations.



SLAPS used in SuperNova are tuned by adding mass to the structure of the passive radiator. Steel cylinders are used to tune the SLAPS to the desired frequency.



## Long Excursion High Power Driver.

Every component of the XLT driver is designed for accurate reproduction of bass and sub-bass frequencies. With a massive moving structure, the XLT operates with extremely low distortion and impressive transient response. Its performance is attributed to a non-conventional motor structure design, that integrates components such as:

- \* Thick, high-gauss magnets, with a total height of 1.2 inches.
- \* Over 7 inch (D), epoxy coated super spider. Chill-plated for long lasting linear performance.
- \* 2.5" diameter, high temperature voice coil, with 1.85" copper winding (height).
- \* 1.5" thick, single layer, thermally pressed poly-ether foam surround.

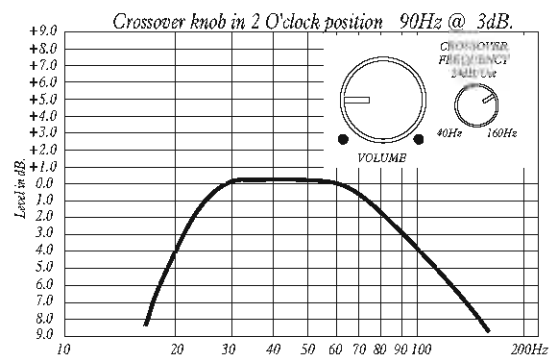
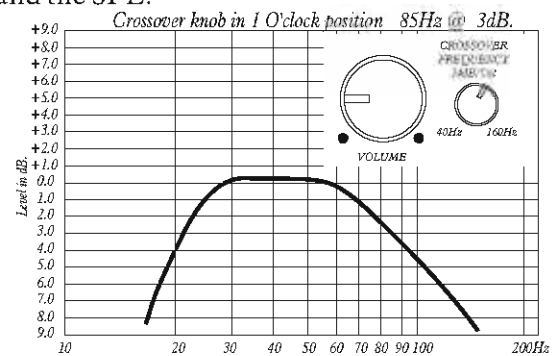
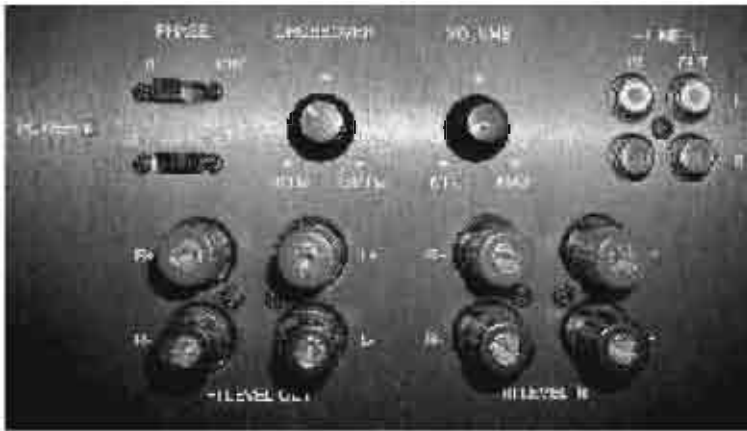
The XLT structure allows for extreme excursions (19 to 21mm) without physical deformation or running out of Reactive Electromagnetic Coupling.



## Setting Up Your Subwoofer.

The SuperNova is a "true" subwoofer, it must never be operated above the sub-harmonic / harmonic frequency range. The SuperNova frequency response is limited by the built-in crossover (with an upper end of 160 Hz); however, in most applications, the crossover should not be set above 80Hz to 95Hz. It is equipped with a fourth-order Linkwitz-Riley filter which will block vocals from interfering with its performance.

When setting up the SuperNova as a part of a home audio system, users must understand that the subwoofer requires different settings: one for music, and one for playing movie tracks. In order to set up the SuperNova for music, users must recognize the frequency response of their existing speakers (tower & surround sound) and the limitations of these speakers, i.e. the diameter (size) of the speakers and the SPL.



### For music setting:

- 1- Position the SuperNova in the corner of the living room.
- 2- Turn the unit around to expose the controls.
- 3- Turn on your audio system, and switch your surround sound processor to "MUSIC" mode, and equalize the rest of your audio system.
- 4- Connect the SuperNova to the processor, using high quality (triple shielded) RCA cables.
- 5- Set the crossover to 150Hz - maximum position, volume at minimum (0).
- 6- Gradually raise the main volume knob ( between the 10 O'clock to 2 O'clock) position, optimizing for the subwoofer performance. That is when the Optical Compression Circuitry works best, allowing the amp maximum output with minimal distortion.
- 7- With the crossover open to 160Hz, you will hear vocals coming out of the subwoofer. Gradually reduce the crossover point until vocals are eliminated (typical crossing point of 80Hz).

To control the volume level of the SuperNova, use the surround sound processor output controls; do not use the main volume knob on the SuperNova (keep it between 10 & 2 O'Clock position). Once you set up the proper mix of low frequencies and sub-harmonic response, that does not encroach on the rest of the speakers. Now you are ready to set up the SuperNova for home theater use.

### For movie viewing:

The SuperNova can be set up to your liking. There are no rules of thumb to how much bass is required. Often, users like to feel the overwhelming bass, it brings the actions and events closer to real life. When viewing movies, a 10dB gain above music setting is often pleasant, it brings movie viewing close to life.

If you desire to have a crossover setting for music, different than the setting for movie viewing. We suggest to cross the SuperNova at higher frequency setting, and use the processor to control the desired lower crossing point.

# Low Pass Filter Settings For MKIV-10 & MKIV-12.

The SuperNova MKIV frequency response is limited by the built-in filter (with an upper end of 160 Hz); for most applications, the crossover should not be set above 80Hz. It is equipped with a fourth-order Linkwitz-Riley (24dB per octave) filter which will block vocals from interfering with its performance.

When fine tuning the SuperNova MKIV, set the crossover to 160Hz as a starting point, you will hear vocals coming out of the sub; gradually reduce the crossover point until vocals are eliminated.

