

AudioControl

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Phase Coupled Activator" Owner's Manual

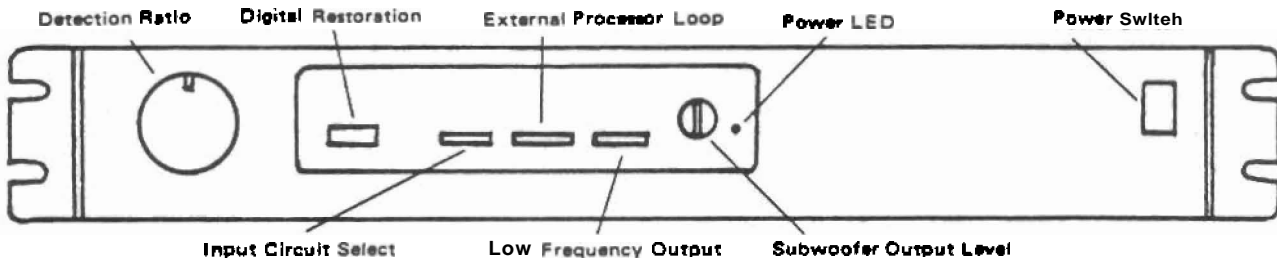
Congratulations.

You've just bought a patent pending product that's going to significantly improve the sound of your system and every source you play into it (with the exception of certain heavy metal records which are beyond help). The Audio Control Phase Coupled Activator is the only audio product which can digitally restore musical notes lost or seduced in the recording and reproduction processes.

We know you're dying to fire the box up and start fracturing your foundations, but cool thy jets a few minutes and read the first couple portions of this manual. The Phase Coupled Activator is SO DIFFERENT, that its controls need a bit of explaining.

What you can expect from your Phase Coupled Activator:

- Depth and impact restored to cassettes, LP's, FM and CD's via patent pending Circuitry.
- ~~QUALITY FOR VIDEO~~ because of a special video audio circuit.
- A Programmable, Electronic Crossover with an 18 dB/octave slope.
- Highest Quality and Five Year Warranty, built in the U.S.A. by an award winning manufacturer.



A GUIDED TOUR OF THE PHASE COUPLED ACTIVATOR'S FRONT PANEL

Power LED and Power Button.

Pretty self-explanatory. The Phase Coupled Activator's ON/OFF switch does not control the extra outlet on the back of the unit. The Phase Coupled Activator may be plugged into a switched outlet on your pre-amp or receiver. If one isn't available, you can plug what was in the switched outlet into the extra outlet in the back of the Phase Coupled Activator and have two switched outlets. The Phase Coupled Activator adds a mere 8 watts to the load on the switched circuit; most switched sockets are rated at 500 watts. If the power LED ever comes on when the power switch is off, you're either being visited by extra-terrestrials or have one heckuva case of static electricity.

Tape Monitor/External Processor.

This is another tape monitor loop just like the one(s) on your preamplifier or receiver. Since the Phase Coupled Activator goes in your tape monitor loop, we have provided a replacement. It is also a good place to hook other signal enhancement devices such as equalizers, noise reducers, expanders, etc. Pushed IN, this button sends out and receives the return of any signal that came into the Phase Coupled Activator. In the OUT position, the loop is out of the circuit.

Remember, when this button is IN, the Phase Coupled Activator's signal is heading out to something and then coming back before returning to your preamplifier or receiver. If the device is turned off, or there's nothing hooked in the loop, you're gonna get The Sounds of Silence. You wouldn't believe how many impassioned calls we get, claiming our products have suddenly failed, that are instantly cleared up by asking the owner what position the tape monitor button is in.

Input Circuit Select.

Your Phase Coupled Activator is designed to enhance video soundtracks as well as FM, tape, records and CD's. Along with extra inputs on the back of the Phase Coupled Activator, the Circuit Select button controls which source the Phase Coupled Activator is detecting and restoring. We added this selection capability due to the different restoration needs of video and hi-fi sources. Make sure the selection button is in the proper position or you will get no sound or possibly Madonna while watching Rambo.

Digital Restoration.

Allows instant comparison of the unrestored signal with your current Detection Ratio control setting. Also great for impressing your friends. Seriously though, we designed the Phase Coupled Activator to provide a realistic floor or fundamental music that you can enjoy for years to come, and not just bowl people over instantly with lets of shudder and boom.

When comparing the IN and OUT positions, listen to music for a few minutes with the button IN and then take it OUT. The car is much better at detecting the LACK of very low sounds. When demo-ing for someone else, just let them enjoy your system and then ask "Now want to hear how it used to sound"? The difference will be immediately noticeable.

CAUTION: When using the Phase Coupled Activator do not use the loudness control. Leave the loudness button out. With the Phase Coupled Activator the loudness control is not necessary.

Detection Ratio Control.

This controls the restorative action of the Phase Coupled Activator, both in terms of what kind of "trace elements" the circuits are looking for, and how much they restore these artifacts to their original volume. This is a sensitivity control and should be used sparingly.

When first using your Phase Coupled Activator, begin with the knob in the middle. For a majority of sound sources, this is "How It Should Have Been in the First Place". Turning the Detection Ratio Control to the right toward +200% will help compensate for 1) small speakers, 2) program material that doesn't even have the normal stingy amount of bass in it. Rotating the knob to the left reduces the sensitivity of the Phase Coupled Activator's restoration action. VERY well recorded Compact Discs are one instance you might want to cut the Detection Ratio. Massive woofers or the addition of a subwoofer is another. Generally, we recommend leaving the control at the 12 o'clock position.

Subwoofer Section: Low Frequency Output and Low Frequency Level Control.

The Phase Coupled Activator is really two separate devices in one: the digital fundamental restoration system, and an audiophile-quality, phase-coherent, programmable electronic crossover. We put them both together because the extra fundamentals returned to music by the Phase Coupled Activator can tax woofers under 8" in diameter, making the addition of a subwoofer very valuable. A subwoofer is a specialized supplementary woofer system used to augment regular speakers. The Phase Coupled Activator's electronic crossover splits up the full frequency spectrum into two parts: Above 90Hz and below 90Hz. The higher part goes to your regular amplifier and speakers which now don't have to play as low. The frequencies under 90Hz are routed to a second power amplifier and to the subwoofer which can better handle really low bass.

The ON/OFF switch activates the crossover. OFF, the whole signal is routed out the Phase Coupled Activator's normal "PCA OUTPUT" sockets. IN, the signal is also sent to "LOW OUT" and "HIGH OUT" output sockets if crossover is connected. Please read the section on the electronic crossover portion of the Phase Coupled Activator carefully before making any connections.

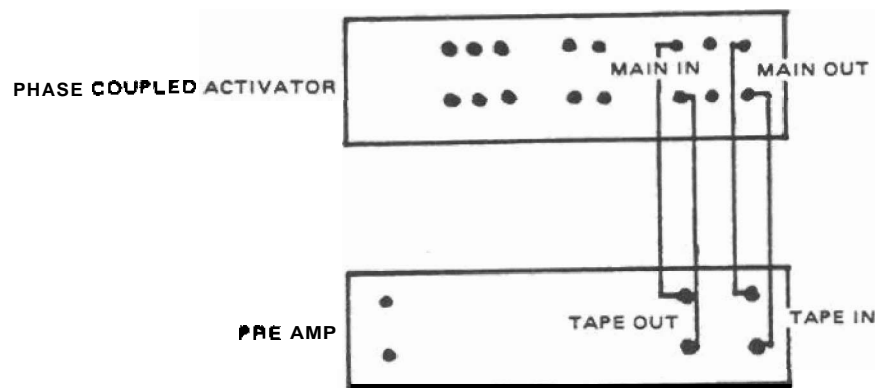
HOOKING UP THE AUDIO CONTROL PHASE COUPLED ACTIVATOR

A. General Instructions:

First **FILL OUT THE WARRANTY CARD!** Please write us some comments and opinions, stamp the card and mail it to us.

Next, **PUT THE SALES RECEIPT IN A SAFE PLACE** and record the serial number of your Phase Coupled Activator. This is **very important** in the highly unlikely event that your Phase Coupled Activator gets ill. It's also your proof of ownership should a burglar ever take a sudden midnight liking to your stereo system. Not pleasant to think about, but neither is hassling with an insurance company.

Finally, **SAVE THE BOX.** You'll need it if you move; we require it if you ship the unit back to us for service.

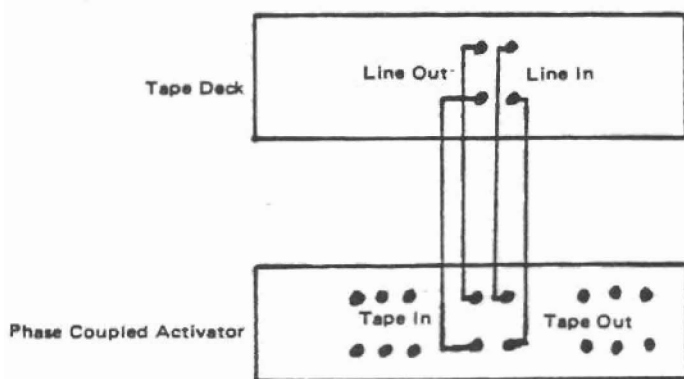


B. Hooking The Phase Coupled Activator Up To a Receiver, Pre-amplifier or Integrated Amplifier.

- [] 1. Locate the tape monitor sockets on the back of your receiver. They should be marked IN and OUT, or MON and REC, or REC and PLAYBACK. There may be two sets of them. You can use either set. Also, some components have an additional set of sockets marked EXTERNAL PROCESSOR. That's an excellent place to put the Phase Coupled Activator without tying up a tape monitor loop.
- [] 2. On the back of the Phase Coupled Activator, locate the three sets of sockets marked MAIN PHASE COUPLED ACTIVATOR CONNECTION. Find the set of sockets marked MAIN INPUT and the set on the far end labeled PCA OUTPUT. Notice that the LEFT and RIGHT sockets are above one another.
- [] 3. Now, after all that looking, you get to DO something. Plug one end of a set of connection cords into the TAPE OUT or REC sockets on your receiver. Plug the other end into the MAIN INPUT sockets on the Phase Coupled Activator, That forms the circuit TO the Phase Coupled Activator.

- [] 4. Plug one end of another set of connection cords into the Phase Coupled Activator" PCA OUTPUT sockets, and the other end into your receiver's TAPE IN or MON sockets. That completes the circuit from the PCA BACK TO your receiver or preamplifier,

Now every time you press the TAPE MONITOR button on your receiver (or the EXTERNAL PROCESSOR button, if you have one), the PCA will be activated. If you *don't* have any other equipment, or run your cassette deck through a different tape monitor circuit, you're ready to sit back and enjoy.

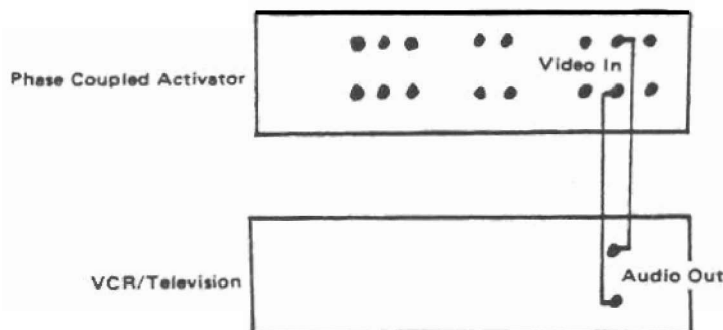


C. Hooking up a cassette deck or other signal processing device.

Whether you've hooked the Phase Coupled Activator up to your tape sockets or the external processor sockets, they're now filled and can't be used for other things. That's why we added a separate TAPE/EXTERNAL PROCESSOR LOOP to the Phase Coupled Activator.

- [] 1. ON the Phase Coupled Activator, locate the INPUT and OUTPUT sockets just to the right of center marked TAPE/EXTERNAL PROCESSOR LOOP.
- [] 2. Find the IN and OUT sockets on the back of your cassette deck or other signal processing device.
- [] 3. Connect the Phase Coupled Activator's OUTPUT sockets to the tape deck or processor" INPUT sockets.
- [] 4. Connect the tape deck or processor's OUTPUT sockets with the Phase Coupled Activator's INPUT sockets.

That's it! Now when the TAPEJEXTERNAL PROCESSOR button is pushed on the Phase Coupled Activator, the signal will go to and from your tape deck *or* cassette deck. The cassette deck may be used just like you normally would. If you don't want a tape to have the benefits of the Phase Coupled Activator, put the Phase Coupled Activator's IN/OUT button in the OUT position.



D. Hooking Up Your Video System With The Phase Coupled Activator.

We've added special inputs so that you can hook your VCR or TV tuner into the Phase Coupled Activator and thus an through your stereo and loudspeakers. The Phase Coupled Activator *does* fantastic things with soundtracks, especially those with lots of music or special effects sound effects. Rock videos and MTV are also fantastic.

- [] 1. Locate the AUDIO OUT socket(s) on your VCR, TV tuner, satellite receiver or video monitor, If you have one of those nifty, complicated switching boxes, you're way ahead of us anyway and have probably already finished this hookup.
- [] 2. On the far right side of the Phase Coupled Activator, locate the center set of jacks marked VIDEO AUDIO INPUT, (They're between MAIN INPUT and PCA OUTPUT).
- [] 3. Hook a set of connection cords from the video source's AUDIO OUT sockets to the PCA's VIDEO/AUDIO INPUT sockets.

Now, when you press the CIRCUIT SELECT button on the Phase Coupled Activator, your video will be sun through your hi-fi after some real serious enhancements courtesy of the Phase Coupled Activator, Put on Star Wars and hold onto your laser swords. Don't however, leave this button in when you're not watching TV or you'll get serious silence when you go to play a record or tape.

E. Taking Advantage of The Phase Coupled Activator's Independent Electronic Crossover.

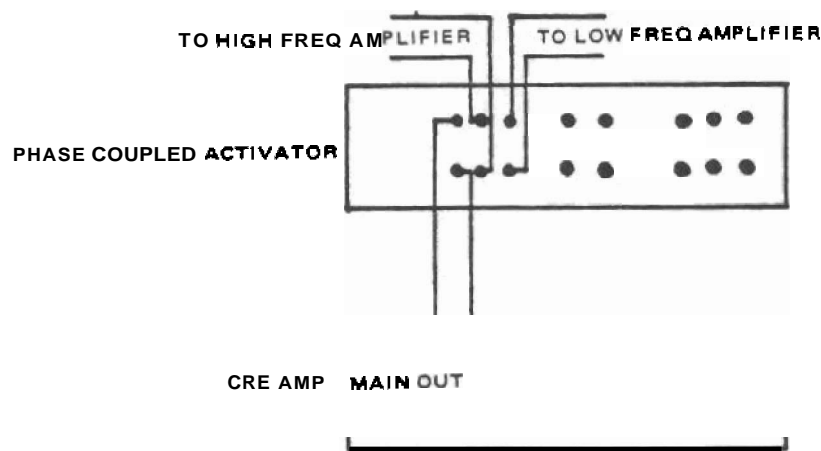
We've added a totally separate—but very handy—hi-fi component which can let you take maximum advantage of the rich, added sound which the Phase Coupled Activator can restore. It divides the frequency spectrum up into two parts.

This allows you to either:

- 1). Augment the performance of your existing speakers with a subwoofer. This approach lets your speakers operate over the full frequency range and uses the crossover to ADD an extra low bass output which is sent to an amplifier and subwoofer.
- Relieve your speakers completely of having to reproduce ultra-low bass signals. This approach uses the electronic crossover to actually divide the full-range signal into two parts. The subwoofer gets everything under 90Hz and your regular speakers breathe a sigh of relief since they only have to reproduce signals above 90Hz. Greg Mackie, our Director of Engineering, "highly recommends" this approach.

Consult with the dealer, where you bought your Phase Coupled Activator, about suitable subwoofers and which of the above approaches will fit your existing speakers, new subwoofer, listening room and musical tastes.

E True Electronic Crossover Approach.



- [] 1. Run a set of patch cords from the OUTPUT sockets of your pre-amplifier to the INPUT sockets in the Phase Coupled Activator's INDEPENDENT ELECTRONIC CROSSOVER section.
- [] 2. Connect the INDEPENDENT CROSSOVER HI OUT sockets on the Phase Coupled Activator to your regular power amplifier. ▪

- [] 3. Connect the INDEPENDENT CROSSOVER LOW OUT sockets on the Phase Coupled Activator with the new amplifier which will drive your subwoofer.

"Great", you're saying, "But, I have a receiver (or integrated amp), not tweaky pre-amp and power amp separates. I don't HAVE any OUTPUT sockets."

Well, actually 99% of you receiver and integrated owners DO. They have little metal "U's" in them row. They're labeled PRE and MAIN and you've probably never even given them a thought until now. Simply take the little U-shaped pieces of metal out. The PRE sockets represent a preamplifier's OUTPUT sockets. The MAIN sockets lead to the power amplifier section of your receiver or integrated.

NOTES ON OPERATING THE PHASE COUPLED ACTIVATOR

Big No-No Department:

Do not turn up bass tone controls or under any circumstance activate your system's LOUDNESS button.

Big Ohh-Wow Department:

One of the most interesting and practical uses for the Phase Coupled Activator is as a REPLACEMENT for the LOUDNESS button we just told you not to ever use again.

Try it for yourself. Put on some background music. Mantovani, Sex Pistols, Wagner--whatever your taste is, with the Digital Restoration button engaged. Then turn the volume down to background level. Now switch the Phase Coupled Activator out. You will find a staggering change in sound quality. Not volume. Just quality. Finally, you can listen to music as a background source and still hear a full range of frequencies. No equalization or loudness button can achieve this.

What Kinds of Music You can Expect The Best Results With:

Rock music, electric jazz/rock/fusion, most acoustic jazz and alder classical recordings all have less low frequency fundamentals than they started out with and are all prime candidates for the Phase Coupled Activator's restorative effects.

When you come to think of it, that's just about every recording ever made with the exception of a few new classical records and CD's that art 100% digitally recorded from start to finish. It's virtually every record in a record start, almost the whole Schwann catalog, most foreign records, EVERYTHING recorded before around 1980, and even those Folkways recordings of Brazilian nose flute concertos your old roommate left you when he dropped out of college back in '70.

Some extremely well-recorded classical selections played through extremely flat response systems may not need the Phase Coupled Activator. For everything else, we know you'll find it useful simply because something is missing that deserves to be put back.

To Venture Where No Audio/Video System Has Gone Before...

If you haven't mated your stereo system with your video system, you're missing a whole lot. Even if they're currently in different rooms, it's worth getting a separate amp and speakers to go with your TV monitor.

But remember to get a spare Phase Coupled Activator. Because enhancing video soundtracks is one of its *most* exciting uses. Particularly impressive are the effects on movies with special effects soundtracks like Star Wars, Dune, 2010, movies with lots of violence, like Clint Eastwood flicks, mercenaries re-fighting Vietnam epics, any musical or movie with a big, expansive, well-recorded soundtrack.

Concert tapes and rock videos are fantastic.
Even all-dialogue, stage-bound movies sound better.

The Phase Coupled Activator will restore bass to regular TV reception, satellite, cable and of course video cassettes. If you're a videophile with a VHS or Beta Hi-Fi deck, you can even enhance soundtracks DURING RECORDING for playback on the decks of those less fortunate than yourself.

Playback Systems and The Phase Coupled Activator:

Since the Phase Coupled Activator restores fundamentals, you must have a speaker system that can reproduce the results. Systems with 8", 10", 12", or 15" woofers work fine. Under 8", you might consider the use of a subwoofer and/or pay particular attention to making sure the Phase Coupled Activator doesn't overdrive your woofers, (See below.)

In some cases, speaker designers have designed a response peak in their speakers. Not that they show it in those flat little response graphs that come with it. But a big, bonky bump can be there, right at 60Hz where the Phase Coupled Activator is partially active. The result can be an over-accentuation of the Phase Coupled Activator's correction. The solution is NOT to turn down the Detection Ratio knob, but to remove the speaker response bump with a frequency-selective *tone* control, or good graphic equalizer (we make those, too). Of course, nothing will cure really flabby, boomy bass in a speaker except a better quality speaker-

There are two extremes which should be considered. One is a speaker with lots of big, boomy bass like *wdve* discussed above. The other potential problem is the small speaker whose woofer can be called on to move farther than it is able. To make low bass, the woofer cone has to move out and in. That's called its excursion. A few of the most respected speaker brands (Sorry, awfully old chaps, but many of them are British), have woofer excursions too short to fully reproduce a true, low bass fundamental. Ditto for small speakers with 5" and 6" woofers.

If you hear a fluttering or clacking sound during bass notes, **BACK OFF** the Detection Ratio knob. Or get bigger speakers. Or stick to chamber music.

Room Acoustics and the Phase Coupled Activator:

If a room is boomy all by itself, low fundamental reproduction will sound muddy and boomy, too. Start by moving your speakers out away from back walls and corners. Raise them up using speaker stands. This takes some experimentation, but can yield dramatically differing results.

You can also move yourself. When your listening position is close to a wall or corner, you are focusing low bass and reverberations in on yourself. Move farther into the center of the room.

Well, that's all there is to it. By now, you should be enjoying music as when you hear it live. It is our pleasure to bring this pleasure to you.

SPECIFICATIONS

Total Harmonic Distortion0005%
Signal: to Noise Ratio	-118dB
Input Impedance	100k ohms
Output Impedance	150 ohms
Frequency Response	30Hz to 20kHz \pm 0.5dB
Frequency Response, Crossover	20Hz to 20kHz \pm 0.5dB
Crossover Slope	18dB/Octave
Crossover Frequency	Programmable*
Site (inches)	2.5 H x 19 W x 9.25 D
Warranty5 years
Country of Origin	U.S.A.
Maximum Output Lev _d (into 606 ohms)	+16dBm

* The Phase Coupled Activator's crossover comes pre-set at 90Hz; it can be programmed by your dealer for almost any frequency from 60Hz to 8000Hz.

THE AUDIO CONTROL LIMITED WARRANTY

People are scared of warranties. Lots of fine print. Lots of non-cooperation. Months of waiting around.

Well, don't be scared of this warranty. It's designed to make you rave about us to your friends. It's a warranty that looks out for you and helps you resist the temptation to have your friend "who's good with electronics", try to repair your Audio Control Phase Coupled Activator. So go ahead *and* read through this warranty, then enjoy your new component for a few days before sending in the warranty card and comments.

"Conditional" doesn't mean anything ominous. The Federal Trade Commission tells all manufacturers to use the term to indicate certain conditions have to be met before they'll honor the warranty. If you honor these conditions, we will warrant all material *and* workmanship on your Phase Coupled Activator for FIVE YEARS from the date you bought it, and will fix or replace it, at our option, during that time.

Here are the conditions that make this warranty conditional:

1. You have to fill out the warranty card and send it to us within 15 days after you purchased your unit.
2. You must keep your sales slip or receipt so you have proof when *and* from whom you bought your unit. We're not the only company to require this, so it's a good habit to get into with any stereo purchase.
3. Your Phase Coupled Activator has to have been originally purchased from an authorized Audio Control dealer. *You do not have to be the original owner to take advantage of the Five Year warranty, but the date of purchase is still important, so be sure to get a copy of the sales slip from the original owner.*
4. You cannot let anybody who isn't: (a) The Audio Control factory; (b) An authorized service center; or (c) Someone authorized in writing, by Audio Control, to service your unit. If anyone other than (a), (b), or (c), messes with your Phase Coupled Activator, that voids the warranty,
5. The warranty is also void if the serial number has been altered or removed, or if the Audio Control Phase Coupled Activator is used improperly. Now, that sounds like a big loophole, but here is all we mean by it. Unwarranted abuse is: (a) Physical damage, (our products are not meant to be used as jack stands for your car); (b) Improper connection. We have done the best we can to protect the inputs; however, 240 volts into the jacks can fry the innards of the poor beastly.
(c) Sadistic things. This is the best product we know how to manufacture, but if you use it for the front bumper of your Baja Bug and get it full of water and dirt, things will go wrong.

Assuming you conform to numbers 1 - 5, and it isn't all that hard to do, we get the option of deciding whether to fix your old unit or replace it with a new one.

Legalese Section

This is the only warranty given by *Audio Control*. This warranty gives you specific legal rights which vary from state to state. Promises of how well your Phase Coupled Activator will work are not implied by this warranty. Other than what we've covered in this warranty, we have no obligation, express or implied. Also, we will not be obligated for direct or indirect consequential damage to your system caused by hooking up *Audio Control* Phase Coupled Activator.

Failure to send in a properly completed warranty card negates any service claim.



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