**Matrix Specifications**

- **Maximum input/output level:** 9.5Vrms/13V peak
- **Frequency response:** 10Hz-10kHz ±1dB
- **Total harmonic distortion:** <0.005%
- **Signal to Noise ratio:** >110dB
- **Input impedance:** 24 dB to 24 dB
- **Output impedance:** 50 Ohms
- **Frequency response:** 10Hz-100kHz;±1dB
- **Power supply:** Transformer isolated PWM DC/DC converter
- **Power draw:** 100mA

**Features of the Matrix:**
- High signal voltage capability:
- 24 dB of gain
- Six channels of input and output
- Balanced differential inputs
- Low-impedance outputs
- PFM Subsonic filter
- Output level controls
- Ultra-low distortion, ultra-quiet operation
- Selectable ground isolation
- Optimum voltage indicator LED's

**Congratulations:**
You have just purchased a high-performance autosound product; the AudioControl Matrix six channel line driver. The Matrix allows you to utilize every last bit of performance and sound quality that you’ve always strived for from your vehicle’s sound system. So find a nice dry spot (we can’t recommend any near us), take a load off and spend a few moments reviewing this Enjoyment Manual for the Matrix line driver.

**Input Circuit:**
The input circuit, which can cancel noise that radiates into the signal path, allows the Matrix to accept any level input. This means it will work with source units that have six channels of voltages over 3 volts without clipping. If in doubt, check with the AudioControl component that you connect after the Matrix Line Driver.

**Power:**
There are two main ways to use the Matrix’s power.

1. **5 Volt:** These lights will tell you when the signal level is at 1 volt, 2 volts or 5 volts. You’ll most likely want at least the 2 volt light to flicker, more if the rest of your components can handle it. Any AudioControl component that you connect after the Matrix Line Driver won’t mind the 5 volt light flickering. Go ahead. Light it up!

2. **Power Connector:** This convenient little connector allows you to hook up all the power and turn-on wires for your Matrix Line Driver in the convenience of a well-lighted area and then plug them in by feel all at once in your trunk’s cavernous darkness. Screws on top of the connector should face up. But if you put the plug in upside down, nothing will be damaged, the Matrix just will not power up.

3. **6, 1, 2, & 5 Volt:** These lights will tell you when the signal level is at 1 volt, 2 volts or 5 volts. You’ll most likely want at least the 2-volt light to flicker, more if the rest of your components can handle it. Any AudioControl component that you connect after the Matrix Line Driver won’t mind the 5-volt light flickering. Go ahead. Light it up!
Signal-To-Noise: An Up and Coming Rock Group?
Your systems signal-to-noise (S/N) ratio is the measurement between your audio signal level, which contains music, and your system’s noise floor, which contains hiss, pops, buzzes, and whines. If you are listening to your buddies’ car audio systems and it has all of the above obnoxious sounds... even when the music is playing, we call that LOW signal-to-noise. On the other hand if you have your volume control cranked up and on quiet songs, and you hear almost ZERO background noise, that is considered a HIGH signal-to-noise ratio. Most serious sound-off competitors have high signal-to-noise ratios (at least the ones that take home the trophies).
When you talk about signal-to-noise ratios, the higher the signal, the better. Since you really can’t reduce the noise floor, signal-to-noise ratio can be readily improved by raising the signal level with a component like the Matrix.
What About High Voltage Head Units?
Many car audio head unit manufacturers are starting to pull their heads out (a little pun) and realizing that they should provide head units with higher signal voltage on the outputs. Not only will this increase a system’s S/N, but it will also allow you to drive your amplifiers more effectively. However, since the output voltage on a source unit will rise and fall as the volume is adjusted, low signal voltage will always be an issue.
Level Matching
Level Matching is about making sure you run just the right amount of signal into an audio component. If you send too much, you’ll experience the not so joyous sound of clipping. At the same time, you want the highest possible signal levels for best signal-to-noise ratio. Since all AudioControl products are capable of high-voltage input and output, it is important that you MATCH the input voltage of your components. Most crossovers and amplifiers can handle up to about 2 volts before they clip. AudioControl signal processors can all produce at least 7.5 volts RMS, and can accept anywhere from 5 to 9 volts RMS. LED voltage indicators on many of our products make it a snap to set levels! Look at Tech Note 1006 on our website at www.audiocontrol.com for more information.
INSTALLING THE MATRIX
Up to this point everything you have read has served to educate you on the operations of the Matrix. We are sure that you are chomping at the bit to install the Matrix so we recommend you read the following sections very carefully.
Placement: Depending upon your application the Matrix should be installed in the signal path as close to your source unit as possible, but definitely before any long cable runs.
Mounting: Once you have selected a permanent mounting location, position the unit and mark the appropriate mounting holes with a felt-tip pin or scratch awl. Before doing anything else, make sure you are not about to drill a hole in a gas tank or pierce any existing wiring. Nothing ruins your day more than an expensive repair bill. Drill a small pilot hole and secure the mounting tabs of the Matrix with self-tapping screws.
Electrical Connections:
WARNING: Failure to disconnect the negative terminal of your battery prior to the installation of the Matrix can result in a warm tingly feeling.
Remote In: Connect a 22 to 18 gauge wire from the head-unit’s remote turn-on to the “Remote” connector on Matrix.
Positive (+12V) Connection: Insert an 18 gauge or larger wire into the connector labeled “+12” on the nifty connector of your Matrix. Connect it to a good constant source of 12 volts (we suggest the battery), fused at 1 amp.
Ground Connection: Use the same gauge wire as you did for the positive connector and run it from the “Ground” connector on Matrix to the negative terminal of the battery, a ground box, or a verified ground location. The factory head unit ground is not a good ground!
When the electrical connections are complete, you may reconnect the negative terminal to your battery.
Car Theater - Level Matching
The individual gain adjustment controls of the Matrix ensures a consistent volume level when switching between different A/V sources.
Six-channel Source Unit
Head units with separate front, rear and subwoofer outputs are easily accommodated with the Matrix.
Maximum SPL System
The input channel linking feature allows the Matrix to receive a two channel signal and produce six channels of output.

The WARRANTY
People are scared of warranties. Lots of fine print. Months of waiting around and leaving messages in some stranger’s voice mail. Well, fear no more, this warranty is 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 AudioControl product. So go ahead, read this warranty, then take a few days to enjoy your new Matrix 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 that certain conditions have to be met before they’ll honor the warranty. If you meet all of these conditions, we will warranty all materials and workmanship on the Matrix for one year from the date you bought it (five years if it is installed by an authorized United States AudioControl dealer). We will fix or replace it, at our option, during that time.
Here are the conditional conditions:
1. You have to fill out the warranty card and send it to us within 15 days after purchasing the Matrix.
2. You must keep your sales receipt for proof of purchase showing whom and from whom the unit was bought. We’re not the only ones who require this, so it’s a good habit to get into with any major purchase.
3. Your Matrix must have originally been purchased from an authorized AudioControl dealer. You do not have to be the original owner, but you do need a copy of the original sales slip.
4. You cannot let anybody who isn’t: (A) the AudioControl factory or (B) somebody authorized in writing by AudioControl to service your Matrix. If anyone other than (A) or (B) messes with your Matrix, that voids your warranty.
5. The warranty is also void if the serial number is altered or removed, or if the Matrix has been used improperly. Now that sounds like a big loophole, but here is all we mean by it.

Unwarranted abuse is: (A) physical damage (don’t use the Matrix for a car jack); (B) improper connections (120 volts into the power jack can fry the poor thing); (C) sadistic things. This is the best mobile product we know how to build, but if you mount it to the front bumper of your car, something will go wrong.
6. If an authorized United States AudioControl dealer installs the Matrix, the warranty is five years.

Assuming you conform to 1 through 6, and it really isn’t all that hard to do, we get the option of fixing your old unit or replacing it with a new one.
Legalese Section
This is the only warranty given by AudioControl. This warranty gives you specific legal rights that vary from state to state. Promises of how well your Matrix will perform are not implied by this warranty. Other than what we have 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 the AudioControl Matrix.
Failure to send in a properly completed warranty card negates any service claims.