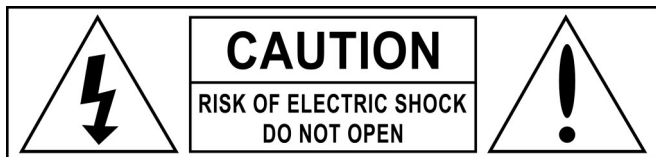




# **AT500nc SERIES CLASS D 2 TO 8-CHANNEL POWER AMPLIFIER OWNER'S GUIDE**

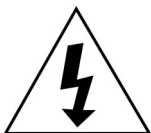


## PLEASE READ FIRST



**CAUTION:** To reduce the risk of electrical shock, do not remove the cover (or back). No user serviceable parts inside. Refer servicing to qualified service personnel.

**WARNING:** To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.



The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operation maintenance (servicing) instructions in the literature accompanying the appliance.

**California Proposition 65 Warning:** This product may contain chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm. (California law requires this warning to be given to customers in the State of California.)

## PRECAUTIONS

The AT500NC amplifier is a wide-band design with substantial power output capability. Certain precautions must be taken to ensure proper operation.

1. Never expose the amplifier to moisture.
2. Never plug an input cable into the amplifier while the unit is turned on.
3. Never apply the “thumb test” (touching the “hot” lead of the input cable with your finger) to the tip of the input cable or input jack of the ATI amplifier. RF rectification and/or hum will be created and could cause damage to the loudspeakers. ATI will not be responsible for damage to the loudspeakers due to improper use of the equipment.
4. Under no circumstances should the output terminals of the AT500NC be short-circuited.
5. Avoid restricting the airflow around the AT500NC amplifier. Good airflow is necessary to ensure proper cooling and trouble-free operation.
6. Ensure that the rated power handling of the loudspeakers connected to the AT500NC amplifier can handle the output power of the amplifier. The warranty of the AT500NC does not cover damage to loudspeakers with inadequate power handling capability.
7. Do not stack other system components or any other materials on top of the AT500NC amplifier. The amplifier is convection cooled and air must be free to circulate around its chassis.

## SAFETY INSTRUCTIONS

Read all the safety and operating instructions before connection or using the AT500NC amplifier.

All warnings on the unit and in this operating manual should be adhered to.

All operating and use instructions should be followed.

Do not place/use the unit near water; for example, near a bathtub, washbowl/sink, laundry tub, decorative water features (waterfalls/fountains), in a wet basement or near a swimming pool.

This unit is not intended for outdoor use.

This unit should be installed so that its location or position does not interfere with its proper ventilation. For example, it should not be situated on a bed, sofa, rug or similar surface that may block its ventilation openings. It should also not be placed in a built-in enclosure, such as bookcase or cabinet, that may impede the flow of air through its ventilation openings.

The unit should be situated away from heat sources such as radiators, fireplaces, hot air ducts, heat registers, stoves and/or other devices (including amplifiers) that produce heat.

The unit should be connected to a power-supply outlet only of the voltage and frequency marked on its rear panel.

The AC power cord should be routed so that it is not likely to be walked on or pinched, especially near the plug, convenience receptacles or where the cord exits from the unit.

Clean the unit only as recommended in this instruction manual.

The unit’s AC power cord should be unplugged from the wall outlet when the unit is to be unused for a long period of time.

Care should be taken so that objects do not fall, and liquids are not spilled, into the unit through any openings.

The unit should be serviced by qualified service personnel only when:

- A. The power cord or plug has been damaged; or
- B. Objects have fallen, or liquid has been spilled, into the unit; or
- C. The unit has been exposed to rain or liquids of any kind; or
- D. The unit does not appear to operate normally or exhibits a marked change in performance; or
- E. The device has been dropped or the enclosure damaged.

To prevent electric shock, do not use a ground lift plug/adaptor. Also, do not use the polarized plug with an extension cord, receptacle or other outlet unless all the blades can be fully inserted to prevent blade exposure.

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## Amplifier Identification Record

This information is for your records and for future identification of the AT500NC. Please take a moment to fill out all pertinent data now. **Whenever inquiries and/or repairs are requested, the serial number will be required.**

**MODEL NUMBER** \_\_\_\_\_  
**SERIAL NUMBER** \_\_\_\_\_  
**DATE PURCHASED** \_\_\_\_\_  
**DEALER'S NAME** \_\_\_\_\_  
**DEALER'S ADDRESS/PHONE** \_\_\_\_\_  
\_\_\_\_\_

## AT500NC Series Power Amplifiers

Congratulations! Thank you for purchasing an ATI AT500NC Power Amplifier, one of the most advanced audio components available. Designed, engineered and manufactured in the United States, it has been carefully designed and tested to deliver the best possible audiophile-grade performance as well as the most reliable operation.

The AT500NC Series is comprised of ten models; the AT522NC & AT542NC two-channel amplifiers, the AT523NC & AT543NC three-channel amplifiers, the AT524NC & AT544NC four-channel amplifiers, the AT525NC five-channel amplifier, the AT526NC six-channel amplifier, the AT527NC seven-channel amplifier and the AT528NC eight-channel amplifier. This manual covers all ten models.

In order to receive the maximum performance from your new amplifier, please take a few minutes to read this manual. This important information will help you make certain that the amplifier is properly configured for operation with the rest of the equipment in your system.

If you have any questions about this product, its installation or operation, please contact us via e-mail at [support@ati-amp.com](mailto:support@ati-amp.com) or via telephone at 323-278-0001.

### Features and Testing

Your AT500NC amplifier was designed to provide a state-of-the-art listening experience and is suitable for use with associated components of the highest order. The amplifier uses the N-Core® NC-500 class D amplifier modules with an ATI designed custom gain stage and linear power supply to deliver superior performance.

Additional features include:

- Custom soft-start circuitry to minimize any turn-on power surge;
- Complete protection from overload, DC faults, over-voltage or over-temperature conditions.
- ATI's proprietary voltage-sensing power supply which automatically selects the proper voltage and is suitable for use with AC supply of 100V to 260V.
- Extruded aluminum heatsinks to aid in cooling the N-Core® class D amplifier modules.

This AT500NC amplifier has been put through a rigorous and unique testing procedure ensuring that each amplifier will last for many years with minimal service

requirements. This procedure includes the following:

- All assembled circuit boards are given a thorough visual inspection and are then performance tested.
- The tested, assembled circuit boards are then installed in a new AT500NC and the whole unit is tested for every function and parameter.
- The unit is put on a burn-in torture rack to test for any possible component failures.
- The amplifier then undergoes a critical listening and functional test.

### Unpacking

Your amplifier is a precision electronic instrument and should be properly packaged any time shipment is made. The carton and packing materials used in shipping your new amplifier were specially designed to protect it from the shock and vibration of shipping. We strongly suggest that you save the carton and packing materials to use if you move, or if the unit ever needs to be shipped back to us for any reason. Should you discover that your amplifier has been damaged during shipping, please contact your dealer or ATI immediately and request the name of the carrier so a written claim may be made.

THE RIGHT TO A CLAIM AGAINST A PUBLIC CARRIER CAN BE FORFEITED IF THE CARRIER IS NOT NOTIFIED PROMPTLY IN WRITING AND IF THE SHIPPING CARTON AND PACKING MATERIALS ARE NOT AVAILABLE FOR INSPECTION BY THE CARRIER. SAVE ALL PACKING MATERIALS UNTIL THE CLAIM IS SETTLED.

### Placement

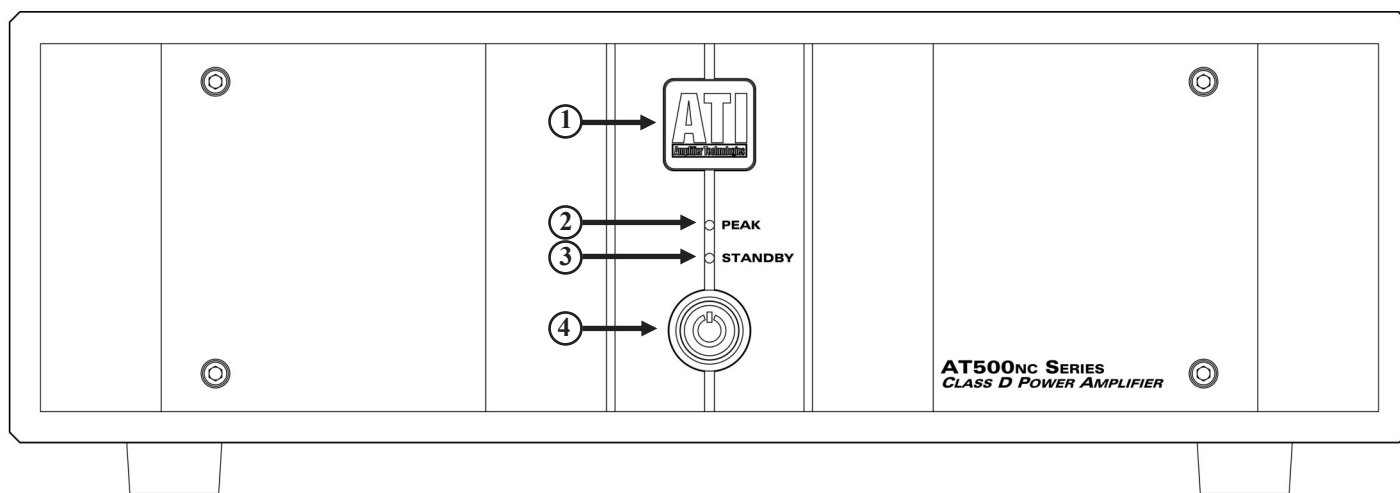
During normal home operation the heat sinks on the amplifier will become warm. However, there are instances during high level playback into low impedance speakers when the heat sinks will become warmer than usual. To ensure the amplifier's trouble-free operation, it is necessary to provide adequate ventilation for the heat sinks. Your amplifier should be kept away from external sources of heat such as radiators and hot-air ducts. The amplifier should never be placed with other heat-producing components in a cabinet or enclosure lacking free airflow. Do not stack other components on top of your amplifier.

**Note:** While the AT500NC amplifier is an advanced Class-D design and generates little heat, it is imperative that the amplifier be operated in a well-ventilated environment and that the immediate external temperature be maintained as specified.

## Handles and Rack Mounting

The AT500NC Series amplifiers can be rack mounted into a standard 19-inch rack with the addition of rack ears and handles. There are four kits available for the AT500NC amplifiers, two for the small, shallow chassis amplifiers; AT522NC, AT523NC, AT524NC and AT542NC and two for the large, deep chassis amplifiers; AT525NC, AT526NC, AT527NC, AT528NC, AT543NC and AT544NC. The kits are available in black and silver to match the handles to the front panels. The kits are available separately for an additional charge and include instructions and hardware for proper mounting of the parts to the amplifier.

## Front Panel Layout



- 1. ATI LOGO.**
- 2. PEAK POWER LED.** Illuminates RED when any amplifier channel reaches full output.
- 3. STANDBY LED.** When the **MAIN POWER** switch is pressed, the **STANDBY LED** illuminates until the amplifier has completed the turn-on process and enters the playback mode. When the playback mode is reached, the **STANDBY LED** turns off. After 10 minutes (approximately) with no input signal, the **STANDBY LED** illuminates indicating the amplifier has entered **SLEEP MODE**. While in **SLEEP MODE**, internal processes are scaled back reducing power consumption. When a signal is again present at any of the inputs, the **STANDBY LED** will turn off and playback resumes instantaneously.
- 4. ILLUMINATED POWER SWITCH.** When the amplifier is plugged in and idle, the **ILLUMINATED POWER SWITCH** pulses slowly and dimly. When the **ILLUMINATED POWER SWITCH** is depressed, the illumination of the switch becomes constant, the **STANDBY LED** illuminates and the amplifier begins the turn-on process. When the turn-on process is complete, the **ILLUMINATED POWER SWITCH** brightens fully, the **STANDBY LED** turns off and the amplifier begins playback.

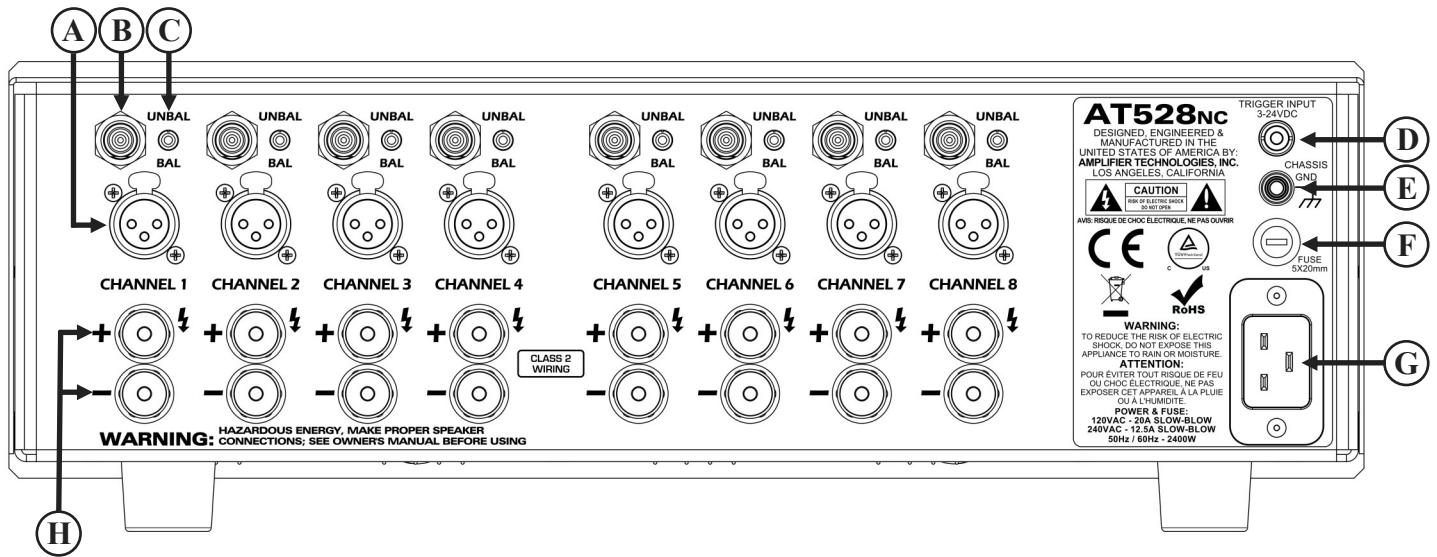
To order, call your dealer or ATI and order SKU # / Model "NC RMK". You will need to specify which model and color of AT500NC you own so we can provide you with the correct length of rack ear and the correct color of handle and hardware.

## Owner's Guide Conventions

For clarity purposes, references to buttons and LED's will be shown in bold capital letters.



## Rear Panel Layout



### A. Balanced (XLR) Audio Inputs

Use the BALANCED INPUT jacks to connect to the outputs of a preamplifier or other control device with XLR outputs. The XLR jack is wired Pin 1 - Ground, Pin 2 - Hot, and Pin 3 - Cold.

### B. Unbalanced (RCA) Audio Inputs

Use the UNBALANCED INPUT jacks to connect to the outputs of a preamplifier, receiver with preamp-out connections, CD player, or other source device with RCA style outputs.

### C. Input Selector Switch

Selects either the BALANCED INPUT (XLR) or the UNBALANCED (RCA) INPUT jack.

### D. Remote Trigger Input

Use the REMOTE TRIGGER jack to connect to a compatible preamplifier, source device, or other product with a 3-24 VDC output.

### E. Chassis Ground Terminal

Use to connect to other chassis where necessary.

### F. Fuse

Replace only with the correct type and rating. The rating is shown on the rear panel next to the IEC power inlet. See Appendix B for fuse ratings.

### G. AC Inlet

Use the included power cord to connect your amplifier to an AC power source.

### H. Speaker Outputs

Use the OUTPUT binding posts to connect the amplifier to your speakers. The post with the red band is positive. The post with the white band is negative.

## Amplifier Channel To Speaker Map

Amplifier Channel	Speaker
CHANNEL 1	
CHANNEL 2	
CHANNEL 3	
CHANNEL 4	
CHANNEL 5	
CHANNEL 6	
CHANNEL 7	
CHANNEL 8	

## Connecting Your Amplifier

When making connections between any source components and the amplifier, or when making connections to any speaker, be certain that both the input devices and the amplifier are turned off. To assure that there will be no unwanted signal transients that can damage equipment or speakers, it is always best to unplug all equipment before making any connections.

### Input Connections

Connecting the amplifier to your source equipment is simple. Using high-quality audio interconnect cables, match the output channel designations on the rear of your source equipment to the input jacks on the rear panel of your amplifier that have the same channel name. The AT500NC amplifiers have both XLR and RCA input connections on the rear panel. Use the toggle switch to the right of each RCA jack to select the desired input for each channel. When making connections with RCA type plugs on interconnect cables, make certain to gently, but firmly, insert the plug into the jack. Loose connections can cause intermittent sound and may damage your speakers. Some quality RCA plugs may be very tight, and it is important to assure a proper connection between the interconnection cable and the input jack.

### Speaker Connections

**Warning:** There are two versions of the AT500NC Series amplifier. One is a conventional single-ended ground referenced configuration. These are the AT522NC - AT528NC. The other is a balanced bridge amplifier in which the negative speaker terminal is NOT a ground and cannot be connected to a system ground or to a loudspeaker system with a common ground. *The balanced bridge amplifiers are: AT542NC; AT543NC and AT544NC.*

**Before connecting speakers to any of the AT54XNC models, consult your speaker manufacturer to ensure that any speaker in your system that will be connected to these balanced bridge amplifiers does NOT have internal circuitry with a common ground.**

To assure that the high quality signals produced by your amplifier are carried to your speakers without loss of clarity or resolution, we recommend that you use high quality speaker wire. Many brands of wire are available; the choice may be influenced by the distance between your speakers and the amplifier, the type of speakers you use, personal preferences, or other factors.

Regardless of the brand or type of speaker wire selected, we recommend that you use a wire constructed of fine, multi-strand copper with a gauge of 14 or less. In specifying wire, the lower the number, the thicker the

cable. Wire with a gauge of 16 may be used for short runs of less than twenty feet. We do not recommend that you use any wires with an AWG equivalent of 18 or higher due to the power loss and degradation in performance that will occur.

To connect the amplifier to your speakers, a pair of binding posts is provided for each channel output. These posts will accept bare wire, spade lugs or banana type plugs. If bare wire is used for the connections, strip approximately 1/2 inch to 3/4 inch of insulation from the end of each wire and carefully twist the strands of each conductor together. Be careful not to cut the individual strands or twist them off. All strands must be used for optimal performance.

Correct polarity of connections are important to maintain proper speaker phasing. When speaker phasing is correct, all speakers move in and out at the same time, preserving the imaging of the program material. Out-of-phase connections mean that some speaker cones will be moving in, while others move out. This will cause indistinct or confused imaging, and muddled and cloudy sounds. To avoid incorrect phasing or polarity, be certain to use wire that has distinct markings, colors, stripes, wording, or grooves on each side of the speaker cable. When making connections to the amp and speakers, adhere to a consistent pattern of using one side of the wire to the red terminals and the other side to the black terminals. When using cable with markings on one side only, traditional convention is to consider the marked side of the wire as the red, or positive (+) connection, and the non-marked side as the black or negative (-) connection.

Next, loosen the knobs of the amplifier's speaker output terminals, far enough so that the pass through hole is revealed. Follow the proper connection instructions for your system with regard to which terminals are used. Once the connections are made, twist the cap back so that the connection is secured, but do not over tighten or use tools, as this may break the delicate wire strands and decrease system performance.

If you are using spade lugs, connect them to the speaker wire using the manufacturer's instructions, and then loosen the caps on the speaker terminals. Place lugs between the plastic cap and the back of the terminal. Be sure to observe proper polarity, using the appropriate speaker hook-up icons for your system's configuration. Using your fingers, tighten to obtain a positive contact.

When using banana plugs, connections may be made by simply inserting the jack affixed to your speaker wire into the hole provided on the rear of the colored screw caps on the binding posts. Before using banana type jacks, make certain that the plastic screw caps are firmly tightened down by turning them in a clockwise direction until they are snug against the chassis. This

will insure that the maximum surface area of the plug is in contact with the jack. Be certain to observe proper polarity.

Run the cables to the speaker locations. Do not coil any excess cable, as this may become an inductor that creates frequency response variations in your system. Finally, connect the wires to the speakers, again being certain to observe proper polarity. Remember to connect your negative, or black wire, to the matching terminal on the speaker. The positive, or red wire, should be connected to the matching terminal on the speaker.

**NOTE:** While most speaker manufacturers adhere to an industry convention of using red terminals for positive connections and black terminals for negative, some manufacturers may vary from this configuration. To assure proper phase connections, and optimal performance, consult the identification plate on your speaker terminals, or the speaker's manual to verify polarity. If you do not know the polarity of your speaker, consult the speaker's manufacturer for further information.

## Power Control Connections

Your amplifier features a built-in remote turn-on system that will automatically switch the amplifier on when another device in the system is switched on.

### **Remote Turn-On Using Products Equipped With a Low Voltage Trigger Jack**

Press the front panel power switch on the amplifier so that it is in the ON position. Then, using an accessory cable with a 3.5mm mono mini-plug on each end, connect the trigger-output jack on the rear of the source device to the trigger input jack on the back panel of the amplifier. When these connections are made, the amplifier will automatically turn on and off with the triggering device. The trigger is compatible with a 3 - 24 VDC steady state signal.

### **Remote Turn-On Using External AC to DC Power Converter**

If your source device does not have a dedicated trigger jack, it is still possible to activate the unit for automatic turn on when a Switched Outlet is available on the rear of the source device. To control the amplifier in this fashion, you will need a small AC to DC power converter, capable of delivering a 3.3 to 24 volt DC signal. The DC voltage should terminate in a standard 3.5mm type mini plug. This type of converter may be obtained as a Power Adapter from many electronics retailers.

When installing, press the Main Power Switch on the front panel of the amplifier in so that it is in the ON position. Plug the AC adapter into a switched outlet on the source device that will be activated when you wish to have the amplifier turn on. This may be the switched outlet at the rear of an AC receiver or other audio equipment. Connect the 3.5mm mini-plug from the

adapter to the trigger-input jack on the back panel of the amplifier. The amplifier will now turn on and off automatically, based on the status of the controlling device.

## Power Connection

Once all audio and system connections have been made, connect the supplied power cord to the amplifier first, and then connect it to an AC power source. Please make certain that the amplifier is turned off and that the device connected to the remote trigger input is off when connecting the power cord and plugging it into an AC outlet.

When the power cord is plugged into the wall outlet, the front panel power switch will dimly illuminate and pulse slowly. The amplifier is in the standby mode and draws less than 1 watt from the wall outlet.

**CAUTION:** Do not plug the amplifier directly into the "Switched Accessory" outlet of another device! These outlets are intended for use with low current draw products having a low current draw, such as tuners, CD players or cassette decks. These cannot handle the high current draw of a power amplifier. Using these outlets for a power amplifier is a significant safety hazard.

**NOTE:** It is not recommended that you connect other power amplifiers, or products with a high current draw, to the same AC power circuit as the amplifier. If this is unavoidable, the Ultra-Soft-Start circuitry of your amp will prevent excessively high inrush current.

## Amplifier Operation

Before turning on the AT500NC, ensure that all precautions and warnings have been carefully reviewed and adhered to. Damage to the amplifier caused by improper operation, wiring and/or ventilation will not be covered under warranty and ATI will not be liable for any consequential damage or loss.

After all connections have been made you are ready for operation. First, turn on the source components and processor in your system. It is always a good idea to turn on your amplifier LAST. This avoids the possibility of any turn on pops or transients from other equipment being amplified and sent to your speakers where they may cause damage. Always start with a low volume level on your controller or preamp to avoid damage to your speakers.

## Manual On

Simply press the front panel power switch. There will be a short pause from the time the power is turned on until power is applied to the speakers. This is intentional, and protects your speakers from damage while the amplifier stabilizes. The switch will stop pulsing and the **STANDBY LED** will illuminate. After the turn-on



process is complete, the front panel switch will illuminate fully, the **STANDBY LED** will turn off and the amplifier will enter playback mode. To turn the unit off, press the Power button again. The power switch indicator light will dimly illuminate and pulse slowly.

## Automatic On

Make certain that the connection to the controlling device is correct. Whenever the controlling device is turned on, the amplifier will automatically turn on after a short pause. This pause is intentional, and it protects your speakers from damage while the amplifier stabilizes. You may also hear a relay click as during start up. This is also normal.

To turn off your amplifier, simply turn off the device feeding the amplifier its audio signals. The amplifier will automatically go into a standby mode in a few moments.

## Peak Indicator Light

This indicator circuit continually monitors the output level of your amplifier. This light will come on if the amplifier exceeds its maximum output capability on any channel. While this will not harm the amplifier, it does warn of potential harm to your loudspeakers if the light stays illuminated continuously for more than ten seconds. The volume setting from your preamp or source device must be turned down if this occurs.

## AC Line Connector and Power Cord

Your amplifier is supplied with an internationally approved (IEC) power line connector that accepts the supplied detachable, high-current capacity power cord.

**WARNING:** *Under no circumstances should the round third prong on the plug be cut, bent or in any other way defeated as this may result in severe shock.*

**WARNING:** *Always turn off the amplifier and unplug the power cord before making any electrical connections.*

## ATI Service Information

The AT500NC series does not contain any user serviceable parts inside. If you suspect a problem that may require service assistance, contact us at support@ati-amp.com, or by phone at 323-278-0001. It is important that only an authorized service agent carry out any repairs. This will assure proper service and preserve the protection of your Limited Warranty. Keep your sales slip or receipt in a safe place with this manual so that it will be available to verify the purchase date, should you experience a problem covered by our warranty.

## Care and Maintenance

### Cleaning

When the unit becomes dirty, wipe it with a clean, soft, dry cloth. If necessary, first wipe the surface with a soft cloth slightly dampened with a mild soapy water, then with a fresh cloth dampened with clean water. Wipe dry immediately with a dry cloth. Never use benzene, thinner, alcohol or any other volatile cleaning agent. Do not use abrasive cleaners, as they will damage the finished of the metal parts. Avoid spraying insecticide, waxes, polishing agents, or any aerosol product near the unit.

### A Few Words About Hum and Noise

Audible hum, or a discernable low frequency noise, is one of the most common problems in audio/video systems. This hum, which may be present even when the volume is at a low level, is usually caused by a problem known as “ground loops”. A ground loop occurs when there is a difference in ground voltages between two or more components that are connected electrically. This, in turn, creates multiple current paths and causes the low-level noise, or hum.

The growing sophistication and complexity of home audio/video systems, and the increased number of components used to create these systems has dramatically increased the potential for the possibility of ground loops. While it is natural to suspect that the components in your system are the cause of the hum, in many cases the cause may be due to other conditions. In particular, cable TV connections from outside the house have become a major source of hum.

In most cases, one of the following suggestions should help you to solve a hum problem in your system. Please try these steps in the sequence shown, proceeding from one step to the next if the prior suggestion does not eliminate the problem.

### Potential Ground Loops in a Complex A/V System

#### **Suggestion #1:**

To determine if a cable TV connection is responsible for the hum, first turn all components off. Disconnect the cable TV feed to your system at the first place where it connects to your components. Alternatively, disconnect the cable TV wire where it is connected at the wall outlet. Turn your system back on, and listen if the hum has disappeared. If removing the cable TV feed has eliminated the hum, you will need to insert a Ground Loop Isolator before reconnecting the cable TV feed, or contact your cable TV operator to see if they can better isolate your cable feed.

### ***Suggestion #2:***

Turn off all components in your system, and then disconnect the input cables at the amplifier. Turn the amplifier back on, and see if the hum is still present. If the hum disappears, the fault may be in the input cables used. Try replacing them with cables that have better shielding, and make certain that the input cables are not running on top of any AC power cords. Change the cables one at a time to determine if one, or all cables is responsive. If the hum disappears when the input cables are disconnected, but returns after the cables are changed and the system re-connected, the problem may be caused by your source device.

### ***Suggestion #3:***

Ground loop problems may also be caused by poor grounding of the electrical system in your home, particularly when there are multiple components with three prong, grounded, power cords. Try unplugging these components one at a time, and see if one or all of them is causing the problem. The ultimate solution to this type of problem is to re-wire your house with an isolated, star type-grounding configuration. We recognize, however, that this may be impractical and expensive. In some cases, the use of an approved AC Power Isolation Transformer of sufficient capacity may solve this problem.

***WARNING:*** *If you suspect that the grounding system in your home's electrical wiring is causing the hum problem, it is important that you do not make any changes to the wiring yourself. Only a licensed electrician should make any changes to household wiring, and they must be made in full compliance with all local building, safety and electrical codes.*

### ***Suggestion #4:***

Hum may also be caused by faulty earth grounds in your home's electrical system. In the past, cold water pipes were often used for the earth ground, so it is important to make sure that your ground connection is still valid and has not become loose or corroded. The cold water pipe method may no longer be valid in some locations due to requirements that the water meter be isolated from the water mains with a length of PVC pipe, thus interrupting the ground circuit. The safest, and most reliable, approach may be to provide your own ground. This can be accomplished by having a licensed electrician drive at least five feet of copper-jacketed steel grounding rod into the earth, and using that for your grounding connection. If the hum persists after all of the above suggestions have been tried, contact the ATI customer service department for assistance.

## Appendix A - Troubleshooting Guide

Your ATI amplifier is designed for trouble free operation. If you follow the instructions in this manual you should enjoy many years of high quality listening enjoyment. However, as with any sophisticated electronic device, there may be occasional problems upon initial installation, or during the life of the unit. The items on the list below are a brief guide to the minor problems that you may be able to correct yourself. Please be sure to thoroughly check all other connected components such as speakers and preamplifiers, as well as cables. If the problem persists, please consult your installer, dealer, distributor or us for assistance.

Problem	Possible Cause(s)	Solution
No power or front panel lights	The power cable is not inserted 100% into the AC input connector.	Ensure that the AC cord is fully inserted into the amplifier and that the wall outlet is active.
No power or front panel lights	Circuit breaker is open (AC wall outlet)	Check the AC outlet circuit breaker and reset, if necessary, or contact your dealer.
No power or front panel lights	Chassis Fuse is open	Replace chassis fuse with the same type and current rating.
Amplifier will not turn on or off when a trigger cable is connected.	Improper wiring of remote trigger	Check voltage , polarity and connection of trigger wire.
Amplifier turns on, but there is no audio from one or more channels.	Input cables are not connected to proper jack or are loose.	Check all input connections.
Amplifier turns on, but there is no audio from one or more channels.	Input select switches are in the wrong position.	Check all input select switches and make sure they are in the correct position for the connection type, XLR or RCA
Amplifier turns on, but there is no audio from one or more channels.	Speakers are not connected properly.	Check speaker connections at the amplifier and speaker.
Audio levels differ.	Improper settings or output levels from processor or controller.	Check the settings on you preamp, processor or controller.
No audio output	Overheating, DC at output, Catastrophic failure	The amplifier will turn off. For any but a catastrophic failure, the amplifier can be reset by removing the fault and completing the turn-on sequence again.

## Appendix B - Model Fuse Ratings

All fuses are 5×20mm Time-Lag surge withstand ceramic body cartridge fuses. If needed, replace the fuse with the same type and current rating for your model. Please contact ATI customer service if you need more information.

Model	AT528NC	AT527NC	AT526NC	AT525NC	AT524NC
Fuse Rating (120VAC)	20A	20A	16A	16A	12.5A
Fuse Rating (240VAC)	12.5A	10A	8A	8A	6.3A

Model	AT523NC	AT522NC	AT544NC	AT543NC	AT542NC
Fuse Rating (120VAC)	10A	6.3A	20A	16A	12.5A
Fuse Rating (240VAC)	5A	4A	12.5A	8A	6.3A

## Appendix C - Specifications - (Specifications subject to change without notice)

<b>Analog Audio Inputs</b>	One Single-ended (RCA) jack per channel & One Balanced (XLR) jack per channel Toggle Switch to choose jack			
<b>Input Impedance</b>	20 k $\Omega$ Balanced for each phase			
<b>Input Sensitivity</b>	AT52Xnc - 1.5V input for 200W RMS 8 ohms		AT54Xnc - 2.35V RMS input for 500W 8 ohms	
<b>Gain</b>	28.5dB			
<b>Polarity</b>	(Single-Ended) Non-Inverting Balanced; Pin-2 = Positive, Pin-3 = Negative for Non-Inverting Output			
<b>Speaker Output</b>	Binding posts; 1 pair per channel			
<b>Mode / Process</b>	Standby: Amplifier is ready to be turned on via front panel switch or remote trigger. Overcurrent, D.C., and/or thermal protection: Amplifier will cycle. Catastrophic D.C. or output stage failure: Amplifier will shut down.			
<b>Power Output - 8 ohms</b>	AT52X <sub>NC</sub>		AT54X <sub>NC</sub>	
Per Channel	8 Channels	2 Channels	2 Channels	1 Channel
20 Hz-20 kHz, < 0.02% THD	200W	200W	500W	600W
1 kHz, 0.02% THD, (Watts)	200W	225W	550W	650W
1 kHz, 1% THD	210W	250W	600W	700W
CEA 2006 1 kHz Burst Power	300W	300W	700W	800W
<b>Power Output - 4 ohms</b>	AT52X <sub>NC</sub>		AT54X <sub>NC</sub>	
Per Channel	4 Channels	2 Channels	2 Channels	1 Channel
20 Hz-20 kHz, < 0.02% THD	300W	300W	500W	900W
1 kHz, 0.02% THD, (Watts)	350W	350W	550W	950W
1 kHz, 1% THD	375W	400W	600W	1000W
CEA 2006 1 kHz Burst Power	450W	500W	700W	1000W
<b>Distortion</b>	AT52Xnc		AT54Xnc	
THD + N, 20 Hz - 20 kHz	0.02%		0.02%	
THD + N @ 1 kHz, 1W	0.005%		0.005%	
Intermodulation Distortion (SMPTE or Twin-tone)	Less than 0.03%		Less than 0.03%	
<b>Frequency Response</b>	+0, -5 dB, 5 Hz to 20 kHz, load independent			
	AT52Xnc		AT54Xnc	
<b>Damping Factor - 8<math>\Omega</math> load</b>	>4000 at 100 Hz; >1600 up to 20 kHz		>2000 at 100Hz; >800 up to 20 kHz	
<b>Damping Factor - 4<math>\Omega</math> load</b>	>2000 at 100Hz; >800 up to 20 kHz		>1000 at 100Hz; >400 up to 20 kHz	
<b>Signal to Noise Ratio</b>	123 dB referenced to rated output (A-Weighted)			
<b>Slew Rate</b>	>60V per microsecond			
<b>Crosstalk</b>	>90dB			
<b>Trigger Input</b>	3-24 VDC; Steady State			
<b>Dimensions (W x H x D)</b>				
AT522, AT523, AT524, AT542	17" x 5 11/16" x 10 5/8" (432 mm x 145 mm x 270 mm)			
AT525 - AT528, AT543, AT544	17" x 5 7/8" x 15 1/2" (432 mm x 150 mm x 394 mm)			
	Add 1 inch (25mm) depth for connectors.			
<b>Weight</b>	Model dependent: 39 lbs. to 65 ½ lbs.; 17.8 to 29.8 kg			

## Appendix D - Power Requirements & Consumption<sup>1</sup>

<b>Power Requirements</b>	117V AC (90V-132V) or 230V (200V-260V); 50/60 Hz Amplifier automatically selects proper voltage range
<b>Power Consumption</b>	Less than 1W at Standby; 1800W maximum

	AT522NC	AT523NC	AT524NC	AT525NC	AT526NC
<b>Standby</b>	<1 Watts				
<b>Idle<sup>2</sup></b>	30W	35W	40W	55W	60W
<b>Sleep<sup>2</sup></b>	20W	20W	20W	30W	30W
<b>@ Rated Power (8Ω)</b>	5.7A	8.25A	11A	13A	17A <sup>3</sup>
<b>All Channels unless noted</b>	675VA	975VA	1280VA	1600VA	2050VA
	500W	725W	980W	1200W	1675W
<b>@ Rated Power (4Ω)</b>	8.3A <sup>3,4</sup>	11.8A <sup>3,4</sup>	16.5A <sup>3,4</sup>	22A <sup>3,4</sup>	16.5A <sup>5</sup>
	1000VA	1440VA	1925VA	2275VA	2000VA
	775W	1150W	1600W	1900W	1500W

	AT527NC	AT528NC	AT542NC	AT543NC	AT544NC
<b>Standby</b>	<1 Watts				
<b>Idle<sup>2</sup></b>	70W	80W	40W	60W	80W
<b>Sleep<sup>2</sup></b>	35W	40W	20W	30W	40W
<b>@ Rated Power (8Ω)</b>	18.5A	21A <sup>3</sup>	14A <sup>3</sup>	22A <sup>3</sup>	27A <sup>3</sup>
<b>All Channels unless noted</b>	2200VA	2500VA	1680VA	2500VA	3200VA
	1700W	2000W	1350W	1950W	2600W
<b>@ Rated Power (4Ω)</b>	16.8A <sup>5</sup>	17A <sup>5</sup>	14A <sup>3,6</sup>	22A <sup>3,6</sup>	27A <sup>3,6</sup>
	2050VA	2050VA	1680VA	2500VA	3200VA
	1500W	1500W	1350W	1950W	2600W

1 - All measurements taken within the 117VAC line voltage range. For 230VAC line voltage range, current draw will be ~0.5X the currents listed in the table. Measurements taken while driving amplifier channels with 1kHz sine wave.

2 - Nominal reading, ±5W.

3 - We do not recommend running the amplifiers for extended periods of time over the fuse rating. This was done for testing purposes only.

4 - All channels driven at 300W per channel

5 - 4 channels at 300W per channel.

6 - All channels at 500W per channel.



## 90-Day Limited Warranty

### Terms and Conditions

#### (7-Year Optional Extended Warranty)

This ATI product is warranted against defects in materials and workmanship for a period of 90 days from the date of purchase by the original owner. The date of purchase shall be established by the original owner presenting to the ATI Customer Service Facility the original owner's purchase receipt or sales slip showing from whom the product was purchased, the date of purchase and the unit's purchase price.

In the event that proof of purchase cannot be established as stated in the preceding paragraph, the warranty period shall commence on the date of manufacture, provided the serial number on the unit has not been altered in any manner.

During the warranty period, ATI will repair, or at its sole option, replace at no charge, components that prove to be defective provided the product is returned in accordance with the shipping instructions that are contained in the unit. The unit is to be sent FREIGHT PREPAID in the original carton and packing along with a detailed description of the problem to ATI in the event it needs factory servicing. ATI will return the unit prepaid to you upon completion of the service.

### Optional Extended Warranty Program

The standard 90-Day Limited Warranty will be extended to a 7-Year Limited Warranty if the following conditions are met: The ATI product is purchased from an authorized ATI reseller; The customer completes and returns the registration card to ATI or the ATI distributor (if the unit is purchased outside the United States) or completes the warranty registration process at: [www.ati-amp.com](http://www.ati-amp.com) AND submits a copy of the original bill of sale to ATI within 14 days of purchase.

This extended warranty is transferrable to subsequent owners of the ATI component as long as all of the Optional Extended Warranty conditions are met.

**PLEASE RETAIN A COPY OF THE ORIGINAL PROOF-OF-PURCHASE.** It will be necessary should in-warranty service ever be required.

## Transferability

The above warranties are transferable to subsequent owners as long as all of the conditions are met under the Optional Extended Warranty Program. The warranty is not transferable if the unit was originally purchased from an unauthorized seller.

The above warranties do not apply if the product has been damaged by accident or misuse or as a result of modification by other than the ATI factory service facility.

ATI shall not be held liable for incidental or consequential damages of any kind arising from the sale or use of its products. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

THERE ARE NO WARRANTIES GIVEN BY ATI THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. ALL IMPLIED WARRANTIES OF FITNESS FOR PURPOSE SOLD, MERCHANTABILITY, DESCRIPTION, QUALITY PRODUCTIVENESS OR ANY OTHER MATTER ARE LIMITED TO THE TERM OF THE EXPRESS WARRANTIES HEREIN STATED.

Some states do not allow limitations on how long an implied warranty may last, so the above limitations may not apply to you.

## Obligation to Make Changes

Products are sold on the basis of specifications applicable at the time of sale. ATI shall have no obligation to modify or to update products once sold.

This warranty gives you specific rights and you may also have other rights that vary from state to state. This warranty is applicable only in the United States.

## Warranty Outside the United States

ATI has formal distribution agreements in many countries. The ATI importer in those countries has assumed the responsibility for servicing ATI products. Please contact the dealer or distributor in the country where you purchased your product for any service issues.



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