ASHLY

ne 4250

ne 8250

ne 4250.25

ne 8250.25

ne 4250.70

ne 8250.70

ne 4250.10

ne 8250.10

Network Enabled
Multi Channel Power Amplifiers

Operating Manual

Important Safety Instructions
Consignes de sécurité à lire atten-

The lightning flash with arrowhead symbol, 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 electric shock to persons. The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the device.

Le symbole de la flèche dans un triangle équilateral symbolisant la foudre est prévu pour sensibiliser l'utilisateur à la présence de tension de voltage non isolée à l'intérieur de l'appareil. Elle pourrait constituer un danger de risque de décharge électrique pour les utilisateurs. Le point d'exclamation dans le triangle équilatérale alerte l'utilisateur de la présence de consignes qu'il doit d'abord consulter avant d'utiliser l'appareil.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
6. Do not use this apparatus near water.
7. Clean only with dry cloth.
8. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
9. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus.
10. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
11. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
12. Only use attachments/accessories specified by the manufacturer.
13. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
14. Unplug this apparatus during lightning storms or when unused for long periods of time.
15. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

1. Lisez ces instructions.
2. Conservez ces instructions.
3. Observez les avertissements.
4. Suivez ces instructions.
5. Pour réduire le risque de feu ou la décharge électrique, ne pas exposer cet appareil pour pleuvoir ou l'humidité.
6. Ne pas utiliser l'appareil près de l'eau.
7. Le nettoyer à l'aide d'un tissus sec.
8. Ne pas bloquer les ouvertures de ventilation, installer selon les consignes du fabricant.
9. Eloigner des sources de chaleur tel: radiateurs, fourneaux ou autres appareils qui produisent de la chaleur.
10. Ne pas modifier ou amputer le système de la mise à terre. Une prise avec mise à terre comprend deux lames dont une plus large ainsi qu'une mise à terre: ne pas la couper ou la modifier. Si la prise murale n'accepte pas la fiche, consulter un électricien pour qu'il remplace la prise désuète.
11. Protéger le cordon de secteur contre tous bris ou pincement qui pourraient l'endommager, soit à la fiche murale ou à l'appareil.
12. N'employer que les accessoires recommandés par le fabricant.
13. N'utiliser qu'avec les systèmes de fixation,chariots, trépied ou autres, approuvés par le fabricant ou vendus avec l'appareil.
14. Débrancher l'appareil lors des orages électriques ou si inutilisé pendant une longue période de temps.
15. Un entretient effectué par un centre de service accrédité est exigé si l'appareil a été endommagé de quelque façon: si il a été exposé à la pluie,, l'humidité ou s'il ne fonctionne pas normalement ou qu'il a été échappé.

FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in both a commercial and residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
> - Reorient or relocate the receiving antenna.
> - Increase the separation between the equipment and receiver.
> - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Table Of Contents

WARNING:
THIS APPARATUS MUST BE EARTHED

1. INTRODUCTION

Thank you for your purchase of this **NE** (network enabled) multi channel power amplifier. The **NE** power amplifiers combine lightweight, state of the art, high efficiency switching technology with integrated Ethernet control, and use optional modular expansion cards to provide comprehensive internal DSP processing, AES/EBU input, and networked digital audio (Cobranet) input. Please read the entire manual to fully understand the features and capabilities of this product.

About Ashly

Ashly Audio was founded in 1974 by a group of recording engineers, concert sound professionals, and electronics designers. The first products were elaborate custom consoles for friends and associates, but business quickly spread to new clients and the business grew. The philosophy we established from the very beginning holds true today: to offer only the highest quality audio tools at an affordable cost to the professional user – ensuring reliability and long life. More than thirty years later, Ashly remains committed to these principles.

Ashly's exclusive Five Year, Worry- Free Warranty remains one of the most liberal policies available on any commercial-grade product. The warranty covers every product with the Ashly brand name, and is offered at no extra cost to you, our customer.

FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference

2. This device must accept any interference received, including interference that may cause undesired operation.

2. UNPACKING

As a part of our system of quality control, every Ashly product is carefully inspected before leaving the factory to ensure flawless appearance. After unpacking, please inspect for any physical damage. Save the shipping carton and all packing materials , as they were carefully designed to reduce to minimum the possibility of transportation damage should the unit again require packing and shipping. In the event that damage has occurred, immediately notify your dealer so that a written claim to cover the damages can be initiated.

The right to any claim against a public carrier can be forfeited if the carrier is not notified promptly and if the shipping carton and packing materials are not available for inspection by the carrier. Save all packing materials until the claim has been settled.

3. THE NE MULTICHANNEL AMP SERIES

Model:

ne4250 - Four Channels, 250W per channel into 4 ohms

ne8250 - Eight Channels, 250W per channel into 4 ohms

ne4250.70 - Four Channels, 70 volt output, 250W per channel

ne8250.70 - Eight Channels, 70 volt output, 250W per channel

ne4250.25 - Four Channels, 25 volt output, 250W per channel (special order)

ne8250.25 - Eight Channels, 25 volt output, 250W per channel (special order)

ne4250.10 - Four Channels, 100 volt output, 250W per channel (special order)

ne8250.10 - Eight Channels, 100 volt output, 250W per channel (special order)

The basic NE multichannel amplifiers come in either four channel or eight channel configurations, with Euroblock input connectors standard or optional XLR connectors. Output connectors are Euroblock only. Standard features on all models include balanced analog inputs, bridge mono mode per channel pair, full ethernet control using **Protea**^{ne} software, remote standby for power up, contact closure preset recall, remote control through micropocessor based devices such as the Ashly WR-5, RD-8C, or other custom control, and DC remote level control using an Ashly WR-1.

Additional hardware options for the **NE** multichannel power amplifiers include the following:

1) Internal DSP Processing - With this factory installed option, and using **Protea**^{ne} (network enabled) software, each amplifier input channel can be configured with pluggable DSP blocks to have its own dynamics control, gain functions, graphic and/or parametric EQ, Hi-pass/Lo-pass filters, time delay, metering, and test signal generator. A mixer section with assignable routing allows any input to drive any or all amplifier outputs. Outputs have the same DSP functions as inputs, with the addition of a fast, automated crossover setup. Both inputs and outputs can copy/paste their settings to other channels, or can link with one or more other channels to track their settings.

Presets can be used to store and retrieve global parameters of an entire amplifier's control surface and DSP section from a file. In addition, Sub Presets allow for a collection of individual DSP function parameters within and across multiple channels of an amplifier to be stored and recalled as a set, affecting only those parameters and channels which have been tagged. Up to 35 presets/subpresets can be stored within the amplifier, and can be recalled in real time from a computer, WR-5 remote control, or contact closure switches (up to four).

2) AES/EBU Input - Using an optional four or eight channel input card, NE multichannel amplifiers can accept AES/EBU digital inputs. This protocol allows 2 channels of digital audio to be transmitted over a single cable, thus maintaining a completely digital signal path until just before the power amplification stage. 48kHz & 96kHz data rates are supported.

3) MIC Inputs - In conjunction with the factory installed DSP option, four analog MIC inputs can be installed (instead of AES/EBU) for full gain, mixing, and dsp processing capabilities using Proteane software.

4) Network Digital Audio (Cobranet) - This option allows the NE multichannel amplifier to be part of a networked audio distribution system. CobraNet is a technology developed and supported by Cirrus Logic (www.cirrus.com). It is a combination of software, hardware and network protocol which allows distribution of multiple channels of real-time, high quality digital audio over a standard Ethernet Network. For detailed information about CobraNet or its implementation or installation please visit www.cobranet.info.

Protection

Ashly **NE** multichannel amplifiers come standard with several protection circuits:

Over Current Protection - Is controlled in the output stage.

Thermal Protection - When the internal temperature is below 40°C the fan runs at its slowest speed. Above 40°C the speed is increased until it reaches its maximum value. If the temperature exceeds 100°C, the input on that channel is reduced. If the temperature exceeds 120°C, the power supply is switched off.

Mains Protections – protection within the power supply includes: Inrush Current Limitation during power up, Mains Over Voltage Detection, and internal Mains Fuse Protection. To protect the Mains fuse against AC overcurrent due to excessive audio output current, there is a protection scheme controlled in **Protea**^{ne} software and indicated on the amplifier front panel which reduces audio output level until the overcurrent condition is no longer present.

Physical Description

Each model in the NE Multichannel series is 2RU, and weighs 22 pounds (10kg) or less. The model number is indicated in the lower left corner of the front panel.
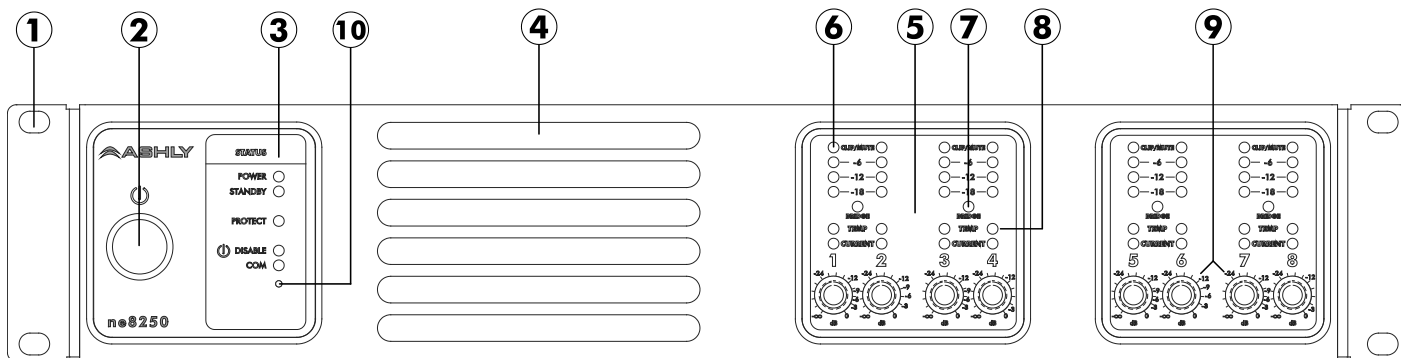
Amplifier Front Panel

1. Mounting Holes – For rack mounting.

**2. Power Switch** – Switches the unit on or off. *Note: The power switch can be disabled from* **Protea**^{ne} *Software*

3. Status LEDs – Indicate status of: Power, Standby, Protect, Power Switch Disable, and Comm activity

4. Air Inflow Vents – Cool air enters here

5. Channel Controls – Channel control area

6. Signal LEDs – The lowest LED will begin to light when the output voltage reaches -18dBu below rated output. The Clip LEDs will begin to flash when output voltage is 1/2 volt below the output power supply voltage.

7. Bridge – This LED indicates that the channel pair is selected to BRIDGE mode from the back panel switch, and that only the odd input channel level control is active

8. Temp and Current LEDs – The Temp LED indicates that the amplifier has reached an excessively high operating temperature. The Current LED confirms that the amplifier output is delivered to a speaker load.

9. Channel Attenuators – These control the input signal level to the amp, and can be disabled from software.

10. Factory Reset – To reset all internal configurations (including passwords) back to their original factory settings, press and hold this recessed front panel tact switch during power up until all channel LEDs are lit. Upon reset completion, the LEDs will turn off and the amp will be in normal operating mode.

Amplifier Rear Panel
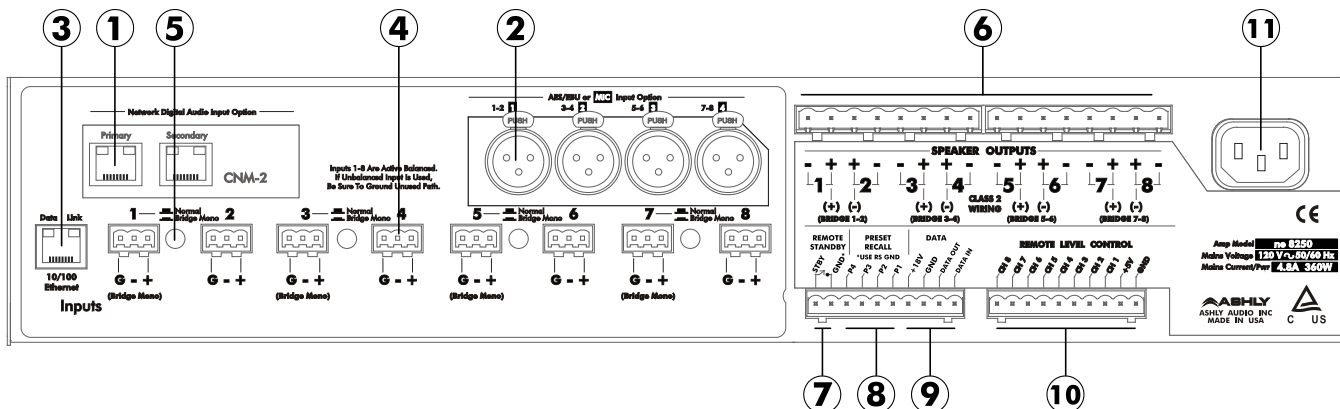
Amplifier Rear Panel

1. Optional Cobranet Card CNM-2 – Installation of this option allows this amplifier to be part of a Cobranet audio network.

2. Optional AES/EBU or MIC Input - This slot allows for installation of an AES/EBU digital input or MIC input.

3. Ethernet Port - This jack offers ethernet control and monitoring of basic amplifier functions using **Protea**^ne software.

4. Input Connector - This is used for a three wire (G, +, -) balanced input. Standard connectors are two-piece euroblock, with XLR connectors optional equipment.

5. Normal/Bridge Switch - This switches the channel pair to Bridge Mode

6. Euroblock Speaker Connectors - Used to connect the speakers

7. Remote Standby - These two contact closure pins are wired to a switch to remotely place the amp in standby.

8. Preset Recall - These four pins (and GND) can be wired to remote contact closure switches to recall up to four amplifier presets.

9. Data - These four pins can be wired to remote microprocessor based controllers such as the WR-5 or RD-8C.

10. Remote Level Control - These pins can be wired to remote potentiometers such as the WR-1 for level control of individual channels

11. AC Inlet - Used for the detachable AC cord.

WARNING: Do not remove or lift the mains connector ground.

Installation

Before connecting to mains power, make sure that the switches and wiring are all set to the configuration needed for your particular application. Failure to do so could result in damage to the unit or other components in your system. **CAUTION:** When mounting or connecting the amplifier, always disconnect it from the mains. Use four screws and washers when mounting the amplifier to the front rack rails. Rear support is also recommended, especially for mobile or touring use. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

Requirements

NE-series multichannel amplifiers have specific physical, electrical and signal requirements for proper operation. These requirements will vary depending on your specific application, setup, and the settings on the amplifier. When setting up and testing your system, please take special care to double check all connections and settings. Please refer to the specifications section of this manual for specific input, output and other figures.

Constant Voltage Models (25V, 70V, and 100V) and High Pass Filters

The 25V, 70V, and 100V amplifiers include internal, factory installed High Pass Filter hardware. This allows for software selectable filters on each channel that prevent low frequency energy from saturating the core of low cost speaker tap transformers. Available settings are 80Hz (12dB/oct), 400Hz (6dB/oct), and OFF. The 400Hz setting is commonly used in paging systems with horn speakers. *Note that with the HPF hardware installed, that amplifier can not have any of the optional AES/EBU input, MIC input, or DSP hardware*.

The DSP option can be factory installed in lieu of the HPF hardware, with HPF frequencies set in software to any value from 20Hz to 20kHz with a slope of 12dB/oct to 48dB/oct and various response options. In order to have AES/EBU capability in a constant voltage amplifier, the DSP option must be installed.

4. REMOTE AMPLIFIER CONTROL

ON/OFF/Remote Standby

The NE multichannel amplifiers have three possible states, OFF, ON, and STANDBY, each with a status LED on the front panel. Control for these three states is managed by the following:

1) **Power Switch** - When the power switch is turned off the amplifier is completely off, UNLESS the power switch has been disabled from within **Protea^{ne}** software, in which case the power switch on the amplifier has no effect at all. If the power switch has been disabled from software, the front panel DISABLE LED will be lit. *Even if the AC power is removed, the amplifier's internal memory will maintain the <power switch disabled> status until changed again from* **Protea^{ne}** *software. Performing a factory reset will clear and restore all internal amplifier memory to factory settings.*

2) **Remote Standby Contact Closure** - When these two euroblock pins on the back of the amplifier are wired to a switch and *connected*, the amp will go into Standby mode, whereby the amp is active but not fully powered up. For Remote Standby to work, the power switch must be turned on OR be disabled through **Protea^{ne}** software.

Remote Standby on
Amplifier Back Panel

Close Switch To Put Amplifier
Into Remote Standby Mode
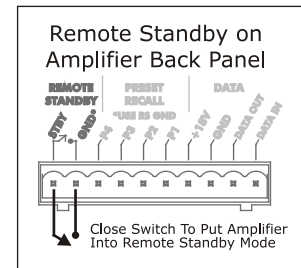
3) **Protea^{ne} Software On/Standby** - On/Standby in the **Protea^{ne}** PE multichannel amp software functions the same as the hardware based Remote Standby Contact Closure on the back panel. Clicking on STANDBY places the amp in standby mode. The On/Standby in software does not override the hardware Remote Standby, they both remian active.

4) **Protea Software Power Switch Enable/Disable** - Use this software feature to disallow use of the front panel power switch. If the power switch has been disabled from software, the front panel DISABLE LED will light. The power switch will remain inactive until enabled again from software, even if the amp is removed from power.

Preset Recall

The four contact closure connections on the back panel euroblock allow for four different amplifier stored presets to be loaded at the instant a remote switch is closed. Presets are configured from **Protea^{ne}** software and can include gain settings, mute status, polarity, as well as the full set of DSP functions if the amp has the DSP option installed.

The NE amplifier will store up to 35 named internal presets, each preset storing control data for all channels and audio functions. While working in **Protea^{ne}** software, changes to an individual preset can be saved to the amplifier using <Preset Options/Save Preset To Protea>, or saved to the PC using <Preset Options/Save To Disk>. Sub Presets (collections of DSP parameters individually selected from software) are saved in a similar fashion. Individual preset files use the extension (*.pmc).

The only way to load presets to an amplifier is by using **Protea^{ne}** software to recall files saved on either the PC or the amplifier itself, through the use of contact closures, or with a WR-5 wall-mounted remote control. Contact closures can load presets 1-4 from the amplifier memory using switches wired to the rear panel contact closure euroblock connector.

Caution: A new preset may have dramatically different settings capable of damaging sound system components, so be careful not to recall the wrong preset while the system is on.

Data Control

The Data Control euroblock connector on the back of the amplifier is used for the Ashly WR-5 programmable zone controller and Ashly RD-8C (or RW-8C) remote level controller. The Data Control interface provides data and phantom power for these devices in remote installations, using four conductor wire.

WR-1 Remote Level Control -   The WR-1 is a dual potentiometer remote volume control designed to fit in a standard wall electrical box, and is wired to the amplifier (with *or* without DSP installed) back panel Euroblock connector labeled "Remote Level Control" using four conductor wire. If wiring a custom potentiometer assembly other than the WR-1, connect +5V from the Remote Level Control Euroblock connector to the potentiometer's CW pin, GND to the CCW pin, and the channel under control to the wiper. *Do not connect the WR-1 remote level control ground to any other external grounds.*
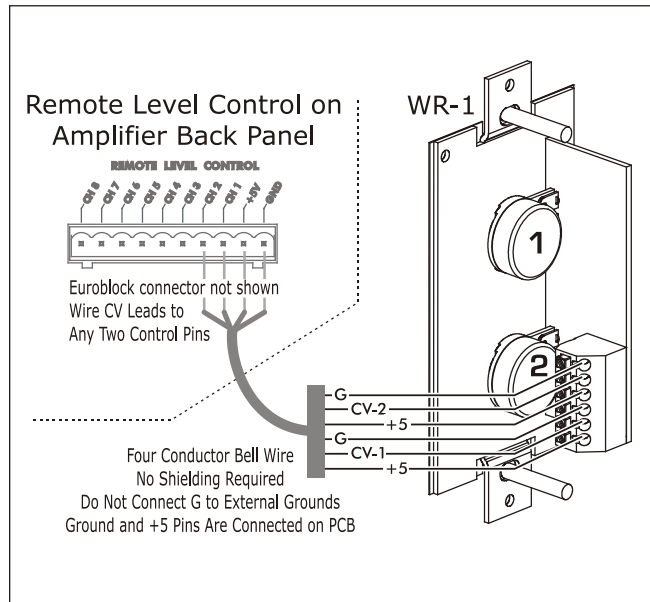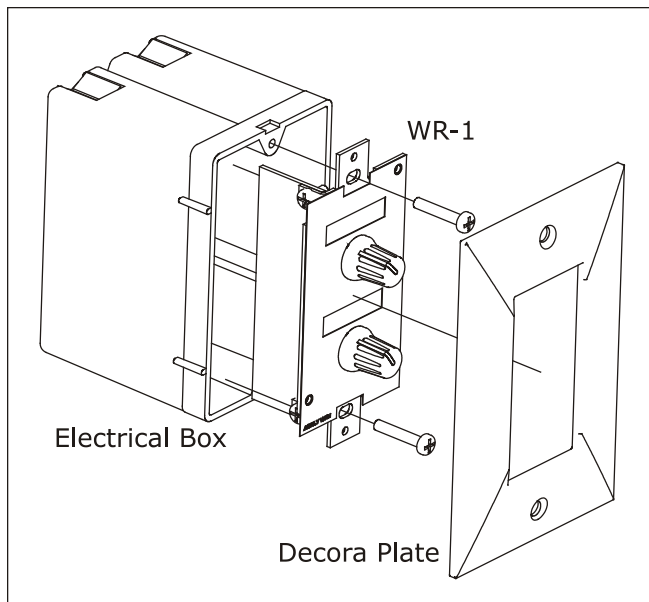
WR-2 Remote Preset Recall Switches - The WR-2 allows selection of one of four presets via interlocking pushbutton switches. Each pushbutton switch can be connected to a Preset Recall Pin on the back panel of the amplifier. The terminal numbers correspond to the first 4 Preset Memory locations in the controlled amplifier. Pressing a button will select the corresponding preset. Windows are provided by each switch for a user-generated label.
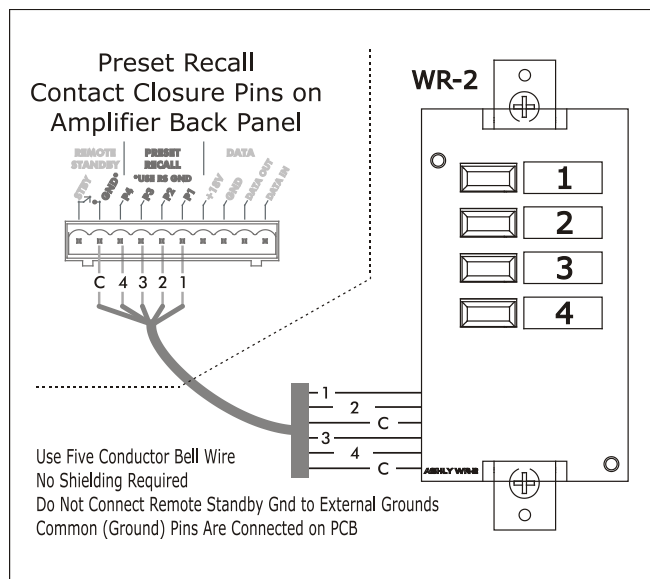
RD-8C or RW-8C Remote Control - The RD-8C and RW-8C are remote level controllers which are connected to the amplifier's Data Port, and are phantom powered from the amplifier. They can only be used in NE amplifiers which have DSP installed, and are used in conjunction with the "Remote Gain" pluggable DSP tool placed in an input or output in software.

Maximum cable length is 1000 ft using #24 gauge twisted pair. The RD-8C is a desktop controller, while the RW-8C is electronically the same but mounts as a wall plate using a standard North American 4-gang electrical box and connects using a Euroblock.. There are eight channels and a master, each with a fader control and an on/off button. *Note: Only one RD-8C can be used per amplifier, and use of an RD-8C will exclude the use of the data port for a WR-5. One or the other remote control device may be connected, but not both*
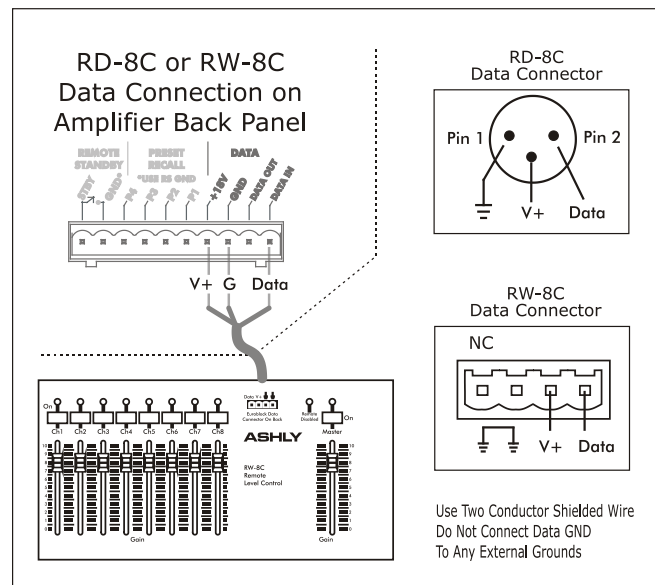
WR-5 Programmable Remote Control - The WR-5 is a programmable button remote control which mounts into a standard North America electrical wall box and connects to an amplifier data port using four conductor wire. Maximum cable length is 1000 ft using #24 gauge twisted pair. A decora cover plate (not included) can be purchased at hardware stores to cover the WR-5 electrical box and satisfy the aesthetic needs of the installation. The WR-5 is phantom powered from the amplifier. Up to four different WR-5 remotes can be wired in series, and more can be added by using an Ashly RPS-18 remote power supply.
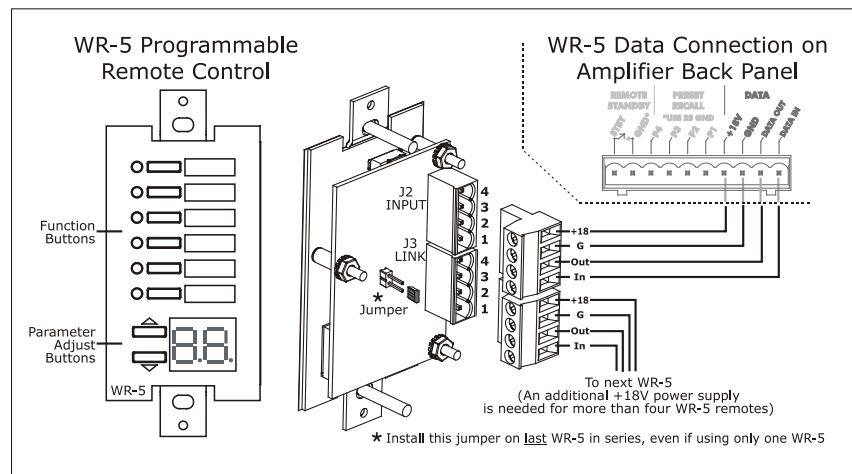
WR-5 buttons are programmed from Protea[ne] software after the WR-5 is wired to an amplifier and assigned a unique ID number in its WR-5 device window. Each button has a status LED. Controlled functions include preset recall/scroll, and *in amplifiers with DSP installed*, functions include mute, zone source selection, individual channel and matrix point level control. *Note: To use the WR-5 as a remote level control, a (ne)WR-5 Remote Gain tool must be placed in one of the DSP processing blocks of the channels(s) to be controlled. presuming that amplifier has DSP installed.* A windowed mylar pocket is available to insert custom function button labels.

The Ashly **RPS-18 remote power supply** is required when more than four WR-5 remotes are connected to one amplifier.

 neWR-5 Networked Programmable Remote Control - The neWR-5 remote control is a networked version of the WR-5,
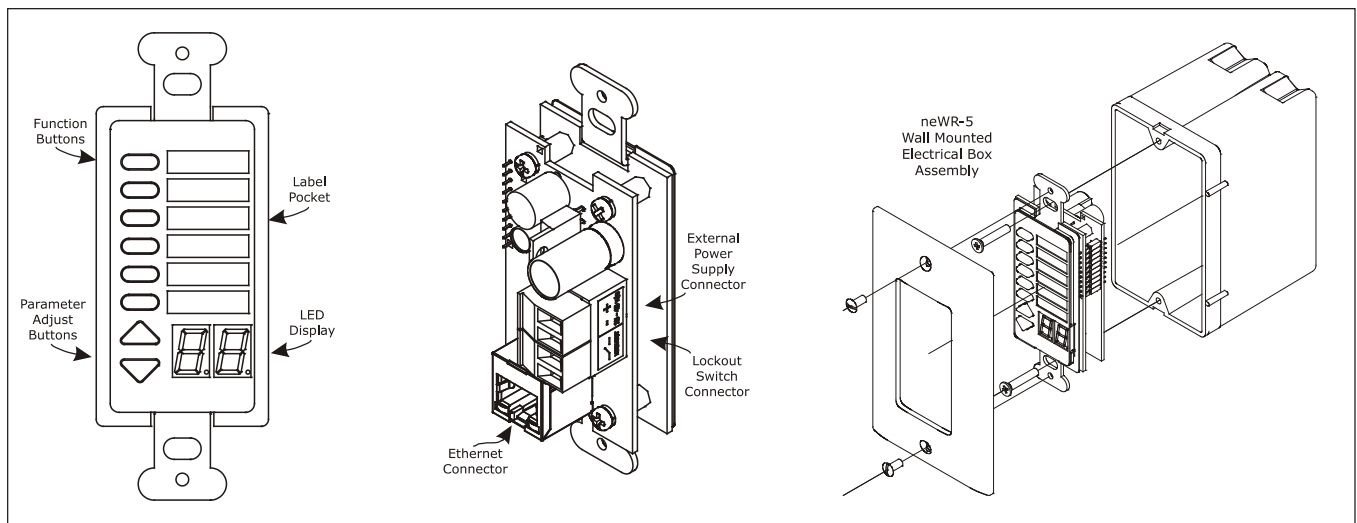
using Ethernet instead of the Data Port to communicate with the amplifier. Connecting and powering the neWR-5 is done using Cat-5 Ethernet cable and an IEEE 802.3af Power over Ethernet (PoE) switch, hub, or in-line PoE injector. If PoE is unavailable, the Ashly RPS-18 (sold separately) is a 15-48VDC power supply capable of at least 2 watts per neWR-5 and can be hard wired to the back of the neWR-5. PoE current draw is 38mA @48VDC and 80mA@15VDC. A decora cover plate (not included) can be purchased at hardware stores to cover the neWR-5 electrical box and satisfy the aesthetic needs of the installation.

The neWR-5 appears in the Protea^{ne} software device menu tree and must be assigned, within its neWR-5 device window, to a specific amplifier under control. The neWR-5 has six programmable function buttons which can light up green, red, or amber to display status. Further information on LED status is found in the neWR-5 owner's manual. To the right of the function buttons is a pocket in the mylar overlay for a printed function label to be inserted. The two other buttons are used to adjust function parameters such as gain or preset number, and are indicated by the LED display. As with the WR-5, neWR-5 functions are limited without DSP installed in the amplifier. *Note: To use the neWR-5 as a remote level control, a (ne)WR-5 Remote Gain tool must be placed in one of the DSP processing blocks of the channels(s) to be controlled. presuming that amplifier has DSP installed.*

There is a hard-wired Lock-Out feature on the neWR-5, where the closing of a switch wired to the lockout Euroblock renders all buttons inactive.

INA-1 Inline RS-232 Adapter - The amplifier Data Port uses a proprietary serial communications protocol which can be converted to RS-232 using the Ashly INA-1 RS-232 adapter. This allows the use of custom designed third party RS-232 controllers.

5. PROTEA^{ne} SOFTWARE

Protea^{ne} software offers a comprehensive suite of tools for controlling Ashly NE multichannel amplifiers as well as other Ashly products. The standard NE multichannel amplifiers allow for ethernet control and monitoring of power functions, level, mute, and polarity. With the DSP option installed, software control and monitoring of major audio functions can be custom configured on a per channel basis, as well as through linked channels. *More in depth discussion of software features can be found in the Protea^{ne} software online help.*

The base amplifier comes with software provisions for an audio control surface, password protected security functions, and network property management. Furthermore, Link Group Configuration and Power On Delay are set up under the Device Options menu tab. In addition, provisions for implementing DSP modes, AES/EBU Inputs, and Cobranet inputs are made available, presuming the necessary hardware has been installed in the amplifier. Protea^{ne} software will auto-detect the installed amplifier hardware options and display the resultant menu items as soon as it recognizes the amp on the network.

Link Group Configuration - Linking allows the controls for multiple signal processing function "blocks" to track each other. For example - if two graphic equalizers are "linked", any change made to a control within either of the equalizers will result in an identical change to the other. Blocks may be linked within a **Protea^{ne}** device, or across multiple devices (assuming that devices are networked). Linking of multiple devices is managed through LINK GROUPS.

Each Protea^{ne} device will support up to eight Link Groups. DSP function "blocks" may be assigned to these groups though Protea^{ne} Software. Once assigned to a group all LIKE functions within the group will track parameter changes. However more than one function type may be assigned to a group. Each LINK GROUP may be assigned a name by the user, and also be assigned a color for easy identification. For further details about linking, see the online help in Protea^{ne} Software.

Preset Options - The Preset Options tab in the main amplifier window allows amplifier setups to be saved to and recalled from the amplifier as well as a computer. Presets are a snapshot of all current settings on a given amplifier.

Sub Presets - Sub Presets are user defined groups of DSP functions within one channel or across multiple channels. Sub Presets allow the end user to instantly recall a pre-determined set of DSP parameters to quickly address changing environmental conditions, without the risk of making undesirable or irrecoverable system changes.

The Amplifier Control Surface Tab

This is the main user interface for the NE multichannel amplifier. Key features of this window include:

1) Channel/Offset Link Group Faders - The level control provides up to 40dB of analog input attenuation. More than 40dB of cumulative attenuation causes the channel to mute. If a channel has been assigned to an offset link group, a colored triangular marker appears on the left side of the fader graticule for secondary level control of all channels in that group. The main level control faders can not be linked to a group.

2) Mute button - This mutes the input channel

3) Polarity button - This inverts the phase of the input channel

4) Offset link group - Up to eight groups are available for the purpose of linking similar function parameters across multiple channels. In addition to the control surface secondary level control (not the main fader), most DSP functions have a link group check box in their work window to assign a specific parameter to one of the eight link groups if desired. Link groups can be renamed by clicking on any group name and entering the new name then pressing <enter> on the keyboard.

5) Attenuators - These two dials indicate the physical position of hardware controls on either the amp front panel or the remote level control (if present). Note that these will display the position of attenuators even when DISABLED in software.

6) Total Attenuation - This indicates the total amount of attenuation being applied to the channel. This is the sum of the following attenuators: main fader, offset link group attenuation, front panel and remote attenuators (if enabled).

7) Meters - Input and Output meters display the real time activity per channel, in dB below rated output. Also, the amplifier's operating temperature and output current are shown. Output current shows that the amplifier channel is actually delivering output to a connected speaker load.

The Amplifier DSP Tab

If the amplifier has DSP installed, the DSP tab automatically appears. The DSP tab includes an input side and an output

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side, with a cross linking matrix mixer in between. Key features of the DSP window include:

Input Channel Number - Right click on this to bring up Clear, Copy/Paste, Link, and Sub Preset for that input channel.

Input Channel Name - The user can name each input channel.

Input Mute Button - Mutes the input.

Pluggable DSP Tools - Six blocks are available on both inputs and outputs for custom configuration of pluggable DSP processing blocks. Total DSP usage for the four input and output channels is indicated as a percentage at the bottom of each input section in the DSP tab. Increasing the number and complexity of applied DSP tools increases the DSP usage. ***Note:*** *The total DSP usage per group of four channels is limited, and cannot exceed 100%.* Available DSP tools include:

1) **Dynamics controls** - Brick Wall Limiter, Compressor, Autoleveler, Ducker, Noise Gate

2) **Gain functions** - Gain, Gain with VCA, RD-8C Remote Control Gain, neWR-5 Remote Control Gain

3) **Equalization** - Graphic Equalizer, 10/6/4/2 Band Parametric Equalizers

4) **Crossover functions** - Four Way, Three Way, and Two Way Crossovers are available on outputs only.

   HPF and LPF filters are available on both inputs and outputs.

5) **Delay** - Speaker Delay at 48kHz sampling rate is 256mS, and Delay is 682mS. At 96kHz, 128mS and 341ms.

6) **Metering** - -60dBu to +20dBu display

7) **Signal Generator** - Pink noise, White Noise, Sine Wave

Extensive online help information is available for all DSP blocks within the software. From within any DSP tool, simply press <F1> on the keyboard for online help for that tool. Also look in the Protea[ne] Software Help Menu/Contents and Index/Contents/Protea NE Products/PE Multichannel Amplifiers/DSP Control for details of all DSP functions.

Input/Output Matrix Router - Any input can be routed to any or all outputs. Click and drag from the input to output to assign routing. For faster routing of a single input or output to multiple channels, highlight its node and then press Ctrl+Click over the desired nodes to connect to. To delete a route or clear the matrix, right click on the routing line or node. Also, right click anywhere in the matrix area to bring up a menu of common routing choices.

Output Mute Button - Mutes the output.

Output Channel Name - The user can name each output channel.

Output Channel Number - Right click on this to bring up Clear, Copy, Link, and Sub Preset functions for that output.

6. SPECIFICATIONS

General Power Amplifier Specifications   *0dBu = 0.775V rms*

Base Model	**4250**		**8250**	
	120VAC	**230VAC**	**120VAC**	**230VAC**

Continuous Average Power Output Per Channel

  Low Z models, Stereo Mode, all channels driven

	120VAC	230VAC	120VAC	230VAC
8Ω, 20Hz-20kHz 1%THD	*150W*	*150W*	*150W*	*150W*
4Ω, 20Hz-20kHz 1%THD	*250W*	*250W*	*250W*	*250W*

  Low Z models, Bridge Mode, all channels driven

8Ω, 20Hz-20kHz 1%THD	*500W*	*500W*	*500W*	*500W*

  25V, 70V, 100V distributed output models,
    20Hz-20kHz 1%THD, per channel *250W*   *250W*   *250W*   *250W*

Line Current Draw (all channels driven)

Line Current, Standby mode	*190mA*	*95mA*	*290mA*	*145mA*
Line Current, Idle (no signal)	*540mA*	*270mA*	*565mA*	*283mA*
Line Current, Typical (1/8 power pink noise)	*2.85A*	*1.43A*	*5.00A*	*2.50A*
Line Current, Maximum (1/3 power sine wave)	*6.00A*	*3.00A*	*11.0A*	*5.50A*

Thermal Dissipation (all channels driven)

BTU/hr, Standby mode, ...	*46.7*	*46.7*	*63.8*	*63.8*
BTU/hr, Idle (no signal)	*123*	*123*	*187*	*187*
BTU/hr, Typ (1/8 power pink noise)	*341*	*341*	*700*	*700*
BTU/hr, Max (1/3 power sine wave)	*378*	*378*	*775*	*775*

Signal to Noise (20Hz-20KHz, unweighted) . . . .*>105dB*
Distortion (SMPTE, typical) - 8 ohm load, 10dB below rated power: . . . .*<0.5%*
Distortion (THD-N, typical) - 8 ohm load, 10dB below rated power, 20Hz-20kHz: . . . .*<0.5%*

Frequency Response . . . .*20Hz-20kHz, +/-1dB*
Damping Factor (8 ohm load, <1kHz) . . . .*>250*
Input Impedance. . . . .*20K Ohm, balanced*
Maximum Input Level . . . .*+21dB*

Cooling. . . . . *temperature dependent speed-controlled axial fan*
Control Network. . . . . *onboard, compatible with standard 100MB Ethernet hardware*
Front Panel Indicators . . . *per channel: Clip/Mute, -6dB, -12dB, -18dB, Temp, Current, Bridge (per pair)*
                       overall: Power, Standby, Protect, Power Switch Disable, Comm
                       Control Surface and Amp LEDs: Level meters are dB below RATED output
Attenuators: *per channel: front panel, software, offset link group, and remote*
Input Connections . . . . . . *Euroblock*
Output Connections . . . . . *Euroblock*
Amplifier Protection   *inrush current limitation, temperature monitoring, output over-current protection, mains fuses*
Power Cable Connector   *15A Edison*
Dimensions. . . . . *19"W x 3.5"H x 15.5"D (483 x 89 x 394mm)*
Weight. . . . . *21 lbs (9.53kg)*
Environmental: . . . . *40-120 deg. F, (4-49 deg, C) noncondensing*

ASHLY

DSP Specifications
Input: . . . .*Active Balanced, 10 kohms*
Max Input Level: . . . .*+21 dBu*

Dynamics
Brick Wall Limiter
Threshold: . . . .*-20dBu to +20dBu*
Ratio: . . . .*infinite*
Attack: . . . .*0.2ms/dB to 50 ms/dB*
Release: . . . .*5ms/dB to 1000ms/dB*

Compressor
Threshold: . . . .*-20dBu to +20dBu*
Ratio: . . . .*1.2:1 to infinite*
Attack: . . . .*0.2 to 50ms*
Release: . . . .*5ms/dB to 1000ms/dB*
Detector: . . . .*Peak/Average*

Autoleveler
Target Level: . . . .*-40dBu to +20dBu*
Action: . . . .*gentle, normal, aggressive, user defined*
Maximum Gain: . . . .*0dB to +15dB*
Ratio: . . . .*1.2:1 to 10:1*
Threshold Below Target: . . . .*-30dB to 0dB*
Gain Increase Rate: . . . .*5ms/dB to 1000ms/dB*
Hold Time: . . . .*0-6 sec*

Ducker
Ducking Type: . . . .*high/low priority, trigger, filibuster, ducked program*
Trigger Threshold: *-80dBu to +20 dBu*
Ducking Release: . . . .*5ms/dB to 1000ms/dB*
Ducking Depth: . . . .*0dB to -30dB*

Gate
Threshold: . . . .*-80dBu to +20dBu*
Range: . . . .*off, 100dB to 0dB*
Attack: . . . .*0.2ms/dB to 50 ms/dB*
Release: . . . .*5ms/dB to 1000ms/dB*

Gain
Gain: . . . .*off, -50dB to +12dB*
Gain w/VCA: . . . .*off, -50dB to +12dB*
WR-5 Remote Gain: . . . .*off, -50dB to +12dB*

Equalization
31 Band Graphic
Filter Type: . . . .*constant Q or proportional*
Bandwidth: . . . .*0.499oct to 0.25oct*

2, 4, 6, or 10 Band Parametric
Filter Types

Parametric:
Frequency: *20-20kHz*
Level: . . . .*-30dB to +15dB*
Q Value: . . . .*0.016oct to 4oct*

Hi/Low Shelf 6/12 dB
Frequency: *20Hz-20kHz*
Level: . . . .*-15dB to +15dB*

All Pass
Frequency 20Hz-20kHz

Variable Q HP/LP
Frequency: *20Hz-20kHz*
Q Value: . . . .*3.047 to 0.267*

Notch/Bandpass
Frequency: *20Hz-20kHz*
Q Value: . . . .*92.436 to 0.267*

Crossover
2 Way, 3 Way, 4 Way Crossover
High Pass/Low Pass Filters
Filter Types:
Bessel: . . . .*12/18/24/48 dB/oct*
Butterworth: . . . .*12/18/24/48 dB/oct*
Linkwitz: . . . .*12/24/48 dB/oct*
Frequency: . . . .*off, 20Hz-20KHz*

Delay
@ 48kHz Sampling Rate
Base Delay: *0-256ms*
Extra Delay: . . . .*0-682 ms*
@ 96kHz Sampling Rate
Base Delay: *0-128ms*
Extra Delay: . . . .*0-341 ms*

Tools
Audio Meter
Range: . . . .*-60dBu to +20dBu*
Increments: *1dB*
Peak Hold Indicator: . . . .*yes*
Signal Generator: . . . .*pink noise, white noise, sine wave*
Sine Wave Frequency: *20Hz-12kHz*
Signal Level: . . . .*off, -50dBu to +20dBu*

Cross Point Mixer
Gain: . . . .*Off., -50 to +12dB, 0.5dB increments with Mute*

Linking
All functions can be linked to 1 of 8 link groups

Processors
Input A/D: . . . .*24 bit (Burr Brown PCM4204)*
Output D/A: . . . .*24 bit (Burr Brown PCM4104)*
DSP Processors: . . . .*32-bit floating point (Sharc ADSP-21262)*
Sample Rates: *48kHz, 96kHz*
Propagation Delay @ 48kHz: . . . .*1.42 ms*
Propagation Delay @ 96kHz: . . . .*0.71 ms*

AES/EBU Digital Audio Input
Type: . . . .*110 ohm transformer balanced XLR*
Sample Rates: *48kHz, 96kHz*
Max Cable Length: . . . .*100 meters*

LIMITED WARRANTY (USA ONLY)

(Other countries please contact your respective distributor or dealer.)

For units purchased in the USA, warranty service for this unit shall be provided by ASHLY AUDIO, INC. in accordance with the following warranty statement.

ASHLY AUDIO, INC. warrants to the owner of this product that it will be free from defects in workmanship and materials for a period of FIVE years from the original-date-of-purchase. ASHLY AUDIO INC. will without charge, repair or replace at its discretion, any defective product or component parts upon prepaid delivery of the product to the ASHLY AUDIO, INC. factory service department, accompanied with a proof of original-date-of-purchase in the form of a valid sales receipt. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

EXCLUSIONS: This warranty does not apply in the event of misuse, neglect, or as a result of unauthorized alterations or repairs made to the product. This warranty is void if the serial number is altered, defaced, or removed. ASHLY AUDIO, INC. reserves the right to make changes in design, or make additions to, or improvements upon, this product without any obligation to install the same on products previously manufactured.

Any implied warranties, which may arise under the operation of state law, shall be effective only for FIVE years from the original-date-of-purchase of the product. ASHLY AUDIO, INC. shall be obligated to only correct defects in the product itself. ASHLY AUDIO, INC. is not liable for any damage or injury, which may result from, or be incidental to, or a consequence of, such defects. Some states do not allow limitations on how long an implied warranty lasts, or the exclusion, or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

OBTAINING WARRANTY SERVICE:

For warranty service in the United States, please follow this procedure:

1) Return the product to ASHLY AUDIO, INC. freight prepaid, with a written statement describing the defect and application that the product is used in. ASHLY AUDIO, INC. will examine the product and perform any necessary service, including replacement of defective parts, at no further cost to you.

2) Ship your product to:

ASHLY AUDIO, INC.

Attention: Service Department

847 Holt Road

Webster, NY 14580-9103