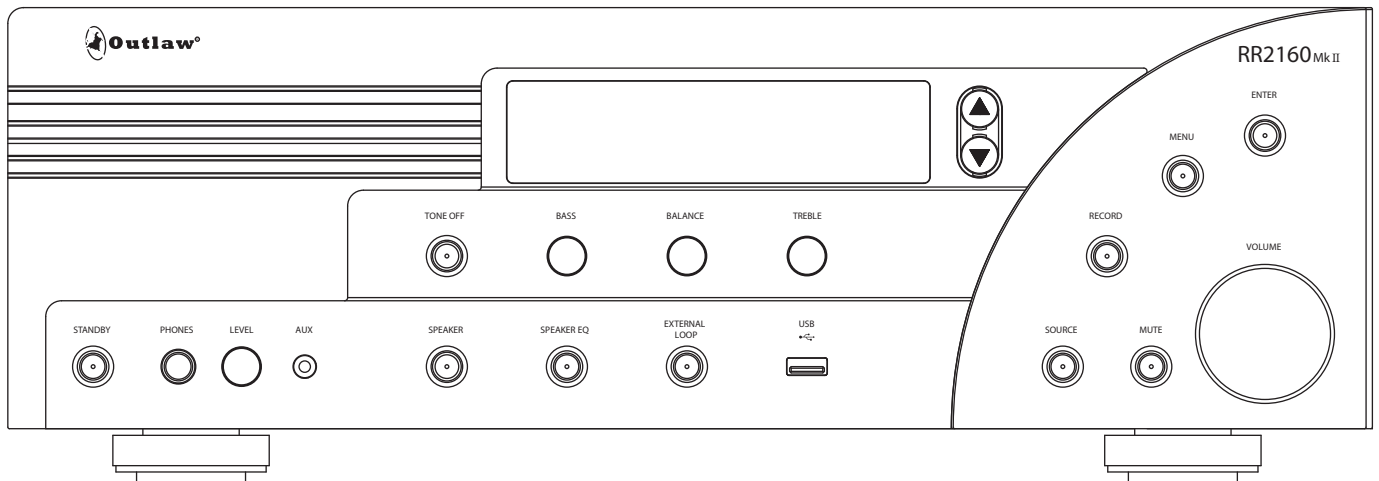


RR 2160 MkII

Stereo RetroReceiver



Outlaw®

Owner's Manual

RR2160 MkII Owner's Manual

Please Read First



Caution: To reduce the risk of electric shock, do not remove the cover. No user serviceable parts inside. Refer to qualified 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 operating maintenance (servicing) instructions in the literature accompanying the appliance.

Warning: Important Safeguards

- **Read instructions:** All safety and operating instructions should be read before the unit is operated.
- **Retain instructions:** The safety and operating instructions should be retained for future reference.
- **Heed warnings:** All warnings on the unit and in the operating instructions should be adhered to.
- **Follow instructions:** All operating and use instructions should be followed.
- **Water and Moisture:** Do not use the unit near water – for example, near a bath tub, wash bowl, kitchen sink, laundry tub; in a wet basement; or near a swimming pool.
- **Accessories:** Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury to a child or adult, and serious damage to the unit. Any mounting of the unit should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
- **Wall or Ceiling Mounting:** The unit should be mounted to a wall or ceiling only as recommended by the manufacturer.
- **Ventilation:** Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the unit and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the unit on a bed, sofa, rug, or other similar surface. The unit should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided. There should be free space of at least 3 - 6 in. (7.6 - 15.25 cm) and an opening behind the unit.
- **Heat:** The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other units (including amplifiers) that produce heat.
- **Power Sources:** The unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your unit dealer or local power company.
- **Grounding or Polarization:** The unit may be equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact a licensed electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

- **Power-Cord Protection:** Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords where they enter a plug, a convenience receptacle, and the point where they exit from the unit.
- **Lightning:** For added protection for the unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect any antenna or cable system. This will prevent damage to the unit due to lightning and power-line surges.
- **Cleaning:** unplug the unit from the wall outlet before cleaning. The unit should be cleaned only as recommended by the manufacturer.
- **Overloading:** Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
- **Object and Liquid Entry:** Never push objects of any kind into the unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.
- **Servicing:** Do not attempt to service the unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- **Damage Requiring Service:** Unplug the unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - When the power supply cord or plug is damaged,
 - If liquid has been spilled, or objects have fallen into the unit,
 - If the unit has been exposed to rain or water,
 - If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation,
 - If the unit has been dropped or damaged in any way, and great care should be exercised in handling, and the unit should be examined by qualified service personnel,
 - When the unit exhibits a distinct change in performance (this indicates a need for service).
- **Replacement Parts:** When replacement parts are required, be sure the replacement parts used have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

FCC: 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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT SAFETY NOTE

Before connecting a new component such as the RR2160MkII to your audio or home theater system it is always good practice to make certain that all components are turned off, and preferably unplugged from their AC power source. Many modern electronics products feature automatic turn-on circuits that may be activated during an installation, causing the potential for damage to electronic components and/or speakers. Such damage is not covered by product warranties and Outlaw Audio specifically disclaims responsibility for any such damage.

Precautions

Verify the Line Voltage

Your new RR2160MkII has been factory configured for 120V (+/- 3%) AC lines. Connecting the unit to a line voltage other than that for which it is intended can create a safety and fire hazard, and may damage the RR2160MkII. If you have any questions about the voltage requirements for your specific model, or about the line voltage in your area, contact Outlaw Audio before plugging the unit into a wall outlet.

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Veuillez d'abord lire



Mise en Garde: Pour réduire le risque de choc électrique, ne retirez pas le couvercle. Aucune pièce réparable par l'utilisateur à l'intérieur. Consulter un personnel qualifié

Avertissement: Pour réduire les risques d'incendie ou de choc électrique, n'exposez pas cet appareil à la pluie ou à l'humidité.

Le flash avec une pointe de flèche, dans un triangle équilatéral, est destiné à alerter l'utilisateur de la présence d'une "tension dangereuse" non isolée dans l'enceinte du produit qui peut être d'une amplitude suffisante pour constituer un risque de choc électrique pour les personnes.

Le point d'exclamation, dans un triangle équilatéral, est destiné à alerter l'utilisateur de la présence d'importantes instructions de maintenance (entretien) de fonctionnement dans la documentation accompagnant l'appareil.

Avertissement: sauvegardes importantes

- **Lisez les instructions:** Toutes les instructions de sécurité et de fonctionnement doivent être lues avant d'utiliser l'appareil.
- **Conserver les instructions:** Les instructions de sécurité et d'utilisation doivent être conservées pour une utilisation future.
- **Tenez compte des avertissements:** Tous les avertissements sur l'appareil et dans le mode d'emploi doivent être respectés.
- **Suivre les instructions:** Toutes les instructions de fonctionnement et d'utilisation doivent être suivies.
- **Eau et humidité:** N'utilisez pas l'appareil près de l'eau; par exemple, près d'une baignoire, d'un lavabo, d'un évier de cuisine, d'une cuve à lessive, dans un sous-sol humide ou près d'une piscine.
- **Accessoires:** Ne placez pas l'appareil sur un chariot, un support, un trépied, un support ou une table instable. L'appareil peut tomber, blessant gravement un enfant ou un adulte et endommageant sérieusement l'appareil. Tout montage de l'unité doit suivre les instructions du fabricant et doit utiliser un accessoire de montage recommandé par le fabricant.
- **Montage mural ou au plafond:** L'unité doit être montée sur un mur ou un plafond uniquement selon les recommandations du fabricant.
- **Ventilation:** Les fentes et ouvertures de l'armoire sont prévues pour la ventilation et pour assurer un fonctionnement fiable de l'unité et pour la protéger des surchauffes, et ces ouvertures ne doivent pas être obstruées ou couvertes. Les ouvertures ne doivent jamais être cadencées en plaçant l'unité sur un lit, un canapé, un tapis ou toute autre surface similaire. L'unité ne doit pas être placée dans une installation intégrée telle qu'une bibliothèque ou un rack à moins qu'une ventilation appropriée soit fournie. Il doit y avoir un espace libre d'au moins 3 à 6 pouces (7.6 - 15.25 cm) et une ouverture derrière l'unité.
- **Chaleur:** L'unité doit être située loin des sources de chaleur telles que les radiateurs, les registres de chaleur, les poêles ou d'autres unités (et amplificateurs) qui produisent de la chaleur.
- **Sources d'énergie:** L'appareil ne doit être utilisé qu'avec le type de source d'alimentation indiqué sur l'étiquette de marquage. Si vous n'êtes pas sûr du type d'alimentation fourni à votre domicile, consultez votre revendeur ou la compagnie d'électricité locale.
- **Mise à la terre ou polarisation:** L'unité peut être équipée d'une prise de ligne à courant alternatif polarisée (une prise ayant une lame plus large que l'autre). Cette fiche ne s'insérera dans la prise de courant que dans un sens. C'est un dispositif de sécurité. Si vous ne parvenez pas à insérer complètement la fiche dans la prise, essayez d'inverser la fiche. Si la fiche ne parvient toujours pas à s'adapter, contactez un électricien agréé pour remplacer votre prise obsolète. N'annulez pas l'objectif de sécurité de la fiche polarisée.

- **Protection du cordon d'alimentation:** Les cordons d'alimentation doivent être acheminés de manière à ce qu'ils ne soient pas susceptibles d'être piétinés ou pincés par des objets placés sur ou contre eux, en accordant une attention particulière aux cordons où ils entrent dans une prise, une prise de courant et le point où ils sortent du unité.
- **Foudre:** Pour une protection supplémentaire de l'appareil pendant un orage ou lorsqu'il est laissé sans surveillance et inutilisé pendant de longues périodes, débranchez-le de la prise murale et débranchez toute antenne ou système de câbles. Cela évitera d'endommager l'unité en raison de la foudre et des surtensions de la ligne électrique.
- **Nettoyage:** Débranchez l'appareil de la prise murale avant de le nettoyer. L'unité doit être nettoyée uniquement selon les recommandations du fabricant.
- **Surcharge:** Ne surchargez pas les prises murales, les rallonges ou les prises de courant intégrées car cela peut entraîner un risque d'incendie ou de choc électrique.
- **Entrée d'objets et de liquides:** N'introduisez jamais d'objets de quelque nature que ce soit dans l'appareil par les ouvertures car ils pourraient toucher des points de tension dangereux ou court-circuiter des pièces susceptibles de provoquer un incendie ou un choc électrique. Ne renversez jamais de liquide d'aucune sorte sur l'appareil.
- **Entretien:** N'essayez pas de réparer l'appareil vous-même car l'ouverture ou le retrait des couvercles peut vous exposer à une tension dangereuse ou à d'autres dangers. Confiez toutes les réparations à un technicien qualifié.
- **Dommages nécessitant une réparation:** Débranchez l'appareil de la prise murale et confiez la réparation à un technicien qualifié dans les conditions suivantes:

Lorsque le cordon d'alimentation ou la fiche est endommagé, Si du liquide a été renversé ou des objets sont tombés dans l'appareil, Si l'appareil a été exposé à la pluie ou à l'eau, Si l'appareil ne fonctionne pas normalement en suivant les instructions d'utilisation.

Ajustez uniquement les commandes qui sont couvertes par les instructions de fonctionnement, car un réglage incorrect des autres commandes peut entraîner des dommages et nécessitera souvent un travail approfondi par un technicien qualifié pour restaurer l'unité à son fonctionnement normal, Si l'unité est tombée ou a été endommagée de quelque manière que ce soit, et une grande prudence doit être apportée à la manipulation, et l'unité doit être examinée par un personnel de service qualifié, Lorsque l'unité présente un changement de performance distinct (cela indique un besoin de service).

- **Pièces de rechange:** Lorsque des pièces de rechange sont nécessaires, assurez-vous que les pièces de rechange utilisées ont les mêmes caractéristiques que les pièces d'origine. Les substitutions non autorisées peuvent provoquer un incendie, une décharge électrique ou d'autres dangers.

Remarque de sécurité importante

Avant de connecter un nouveau composant tel que le RR2160MkII à votre système audio ou home cinéma, il est toujours recommandé de vous assurer que tous les composants sont éteints, et de préférence débranchés de leur source d'alimentation CA. De nombreux produits électroniques modernes disposent de circuits de mise sous tension automatiques qui peuvent être activés lors d'une installation, ce qui peut endommager les composants électroniques et / ou les haut-parleurs. Ces dommages ne sont pas couverts par les garanties des produits et Outlaw Audio décline expressément toute responsabilité pour de tels dommages.

Précautions

Vérifier la tension de ligne

Votre nouveau RR2160MkII a été configuré en usine pour des lignes CA 120 V (+/- 3%). La connexion de l'appareil à une tension secteur autre que celle pour laquelle il est prévu peut créer un risque de sécurité et d'incendie et peut endommager le RR2160MkII. Si vous avez des questions sur la tension secteur dans votre région, contactez Outlaw Audio avant de brancher l'appareil dans une prise murale.

FCC

Cet appareil est conforme à la partie 15 des règles de la FCC. Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne doit pas provoquer (2) cet appareil doit accepter toute interférence reçue, y compris les interférences pouvant entraîner un fonctionnement indésirable.

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NOTE: It is always a good idea to avoid using any audio or video equipment on the same AC circuit as equipment with motors, such as air conditioners or refrigerators. This will lessen the possibility of power variation and electrical start-up noise affecting your sound system.

Power Cord

The removable power cord that is shipped with the RR2160 MkII is specifically designed to be used with this product. DO NOT use any other power cord, as that may reduce the unit's performance and possibly create a safety hazard. In particular, DO NOT use standard IEC type power cords designed for computers and other business equipment products, as they have a three prong plug that is not meant for use with the RR2160 MkII. Should the power cord require replacement, use an identical type, or contact Outlaw Audio for service.

Handle the AC Power Cord Gently

When disconnecting the power cord from an AC outlet, always pull the plug, never pull the cord. If you do not intend to use the RR2160 MkII for any considerable length of time, disconnect the plug from the AC outlet. If the power cord is replaced, make certain that it is of similar gauge. As with all electrical devices, do not run power cords under rugs or carpets or place heavy objects on them. Damaged power cords should be replaced immediately with cords meeting factory specifications.

AC Fuse

The fuse is located inside the chassis and is not user-service-able. If power does not come on, contact Outlaw Audio.

Wiring

Cables that are run inside of walls should have the appropriate markings to indicate compliance with, and listing by the UL, CSA or other standards required by the UL, CSA, NEC or your local building code. Questions about cables inside of walls should be referred to a qualified custom installer, or a licensed electrician or low-voltage contractor.

Installation Location

To assure proper operation and to avoid the potential for safety hazards, place the unit on a firm and level surface capable of supporting its weight. When placing the unit on a shelf, be certain that the shelf and any mounting hardware can support the weight of the unit and any additional items in the equipment rack, or on the shelf.

When positioning the RR2160 MkII in its final location, make certain that it has adequate ventilation on all sides, as well as on the top and bottom. In particular, it is a good idea to provide at least three to six inches of room above the unit for air circulation. DO NOT place CDs, DVDs, videotapes, owner's manuals, or other paper on top of, or beneath, the unit, or in-between multiple amplifiers in a stack. This will block airflow, causing heat build-up, degraded performance, and may create a possible fire hazard.

If the unit is to be enclosed in a cabinet or rack, make certain there is adequate air circulation. Sufficient ventilation should be provided so that hot air may exit, and cool air may enter the cabinet. In some instances, a small cooling fan may be required to insure adequate airflow through the cabinet. If you are in doubt as to the ventilation requirements for your specific installation, please contact us. Also, do not place the RR2160 MkII directly on a carpeted surface, as this will inhibit airflow underneath as well as create a potential fire hazard.

Avoid installation in humid locations, in extremely hot or cold locations, or in areas that are exposed to direct sunlight or space heating equipment.

Do Not Open the Cabinet

There are no user serviceable components inside this product. Opening the cabinet may present a shock hazard, and any modification to the product will void your guarantee. If water or any

metal object, such as a paper clip, coin or a staple, accidentally falls inside the unit, disconnect it from the AC power source immediately, and contact Outlaw Audio for further instructions.

Recording Copyright

Recording of copyrighted material for other than personal use is illegal without permission of the copyright holder.

Note to CATV system installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC, ANSI/NFPA 70, which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

FCC Information for User

CAUTION: ANY changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 a 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.
- Consult the dealer or an experienced radio/TV technician for help.

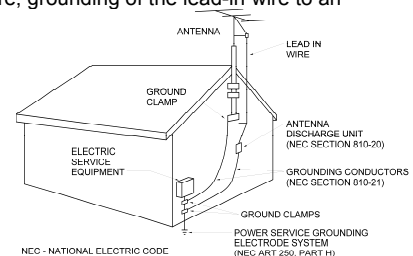
FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body

Outdoor Antenna Installation

Safe Antenna and cable Connection

If an outside antenna or cable system is connected to the equipment, be sure the antenna or cable system is grounded so as to provide some protection against built up static charges and voltage surges. Section 810 of the National Electrical Code, ANSI/NFPA 70 (in Canada, part 1 of the Canadian Electrical Code) provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements for the grounding electrode.



Keep Antenna Clear of High Voltage Power Lines or Circuits

An outside antenna system should be located well away from power lines, electric light or power circuits and where it will never come into contact with these power sources if it should happen to fall. When installing an outside antenna, extreme care should be taken to avoid touching power lines, circuits or other power sources as this could be fatal. Because of the hazards involved, antenna installation should be left to a professional.

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Thank you for purchasing the **Outlaw Audio RR2160 MkII Stereo RetroReceiver**. Like its original predecessor, the RR2150, your new RetroReceiver is a full-featured stereo receiver with exterior styling inspired by art deco table radios of the past. This handsome aluminum face has been paired with modern circuitry, parts selection, assembly techniques, and features to provide state-of-the-art audio performance.

A Brief Note on This Manual

To get the maximum performance and enjoyment from your RR2160 MkII, please take a few minutes to read this manual. This advice may seem counter to the Outlaw approach to audio, but the pages that follow will help you get full benefit of the RR2160 MkII. It contains everything you need to know to connect, configure, and use your new receiver. You'll learn how to make your RR2160 MkII work with all of the other components in your system, and how to adjust its settings for the best possible performance.

If you have any questions about your RR2160 MkII, its installation or operation, please contact us at:

support.outlawaudio.com

You may also find fellow Outlaws hanging out at the Outlaw forum, the Saloon.

Stop in by clicking on "Customer Forum" near the top of our home page at www.outlawaudio.com.

For Future Reference:

Serial Number:

Date of Purchase:

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Specifications are those in effect at the time of printing. Outlaw Audio reserves the right to change specifications or designs at any time without notice without obligation to modify existing units.

Quick Guide to the Features

We'll explain the RR2160MkII's many features later in this manual, but first we wanted to identify some of the key features so you can watch for those you're most interested in.

- **High Power Stereo Amplifier**
2 x 110 watts continuous power, 20 Hz to 20 kHz @ 8 ohms, <0.05% THD, both channels driven
- **7 Analog Inputs**
Connect all of your analog audio sources with ease. Included are a rear panel Phono input (moving coil or moving magnet), four rear analog inputs, an external processor loop, and a front panel 3.5mm auxiliary input for an MP3 player.
- **1 Front and 2 Rear USB inputs**
Connect a USB-enabled device, a USB storage device, or a computer for playback of audio files or to use the RR2160MkII and an external sound card.
- **Separate Signal Paths for Listening and Recording**
Listen to one source while recording another.
- **Preamp Outputs and Main Amplifier Inputs**
These enable easy system configuration with additional power amplifiers, electronic crossovers, equalizers, etc.
- **A/B Speaker Selector Switch**
- **Front Panel Adjustable Speaker Equalization**
This selector adds a half-octave of bass boost at selected frequencies for better bass response with compact bookshelf speakers.
- **Front Panel Tone Control Defeat**
- **High-performance FM/FM Stereo Tuner with HD Radio and 20 Presets.**
- **Audiophile-quality Preamplifier and Power Amplifier Stages**
Necessary for critical music listening.
- **Headphone jack with level control.**
- **12 Volt Trigger**
Use this output for control of external system components (amplifier, video projector, etc.) so they turn on and off in sync with your RR 2160.
- **Infrared (IR) Input and Output**
Use these to control your RR 2160 even when it is hidden behind closed doors – not that you'd ever want to do that!
- **Precision Volume Control**
- **Removable IEC-style Power Cord**

Unpacking

Your RR2160MkII has traveled to you in packaging designed to protect it from the hardships of shipping that it inevitably must endure. We recommend you retain these materials for use if you move or if the unit ever needs to be shipped back to the Outlaws for any reason.

You can minimize the size of the carton and packaging for storage. Flatten the inner and outer cartons by carefully opening the top and bottom flaps and folding them flat. Do the same with all cardboard inserts. For foam and other packaging that can't be folded, save it in the unit's protective plastic bag.

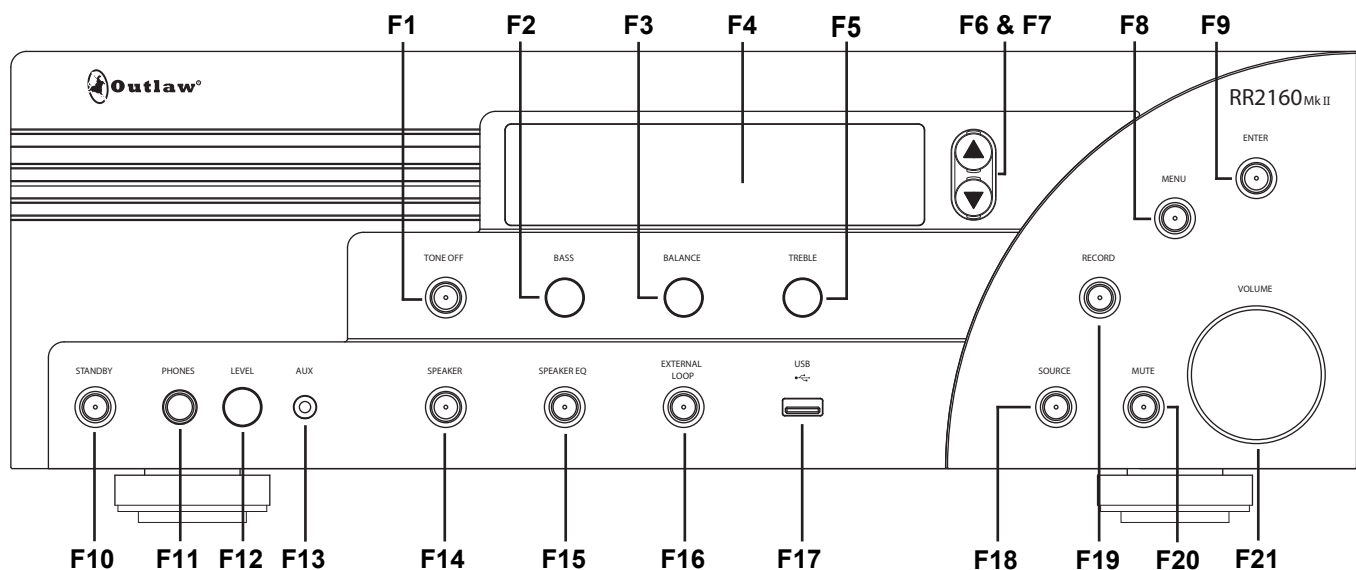
The RR2160MkII is not light, and the heavier internal components are not evenly distributed. Lift with your legs, not your back! Also be careful about knobs on the front panel and connectors on the rear panel.

Accessories

Accompanying your RR2160MkII are several accessories. Please check to make sure the following are included in the box:

- Remote control
- 2 AAA batteries for the remote control
- AC power cord
- FM antenna
- (2) U-shaped jumpers
- Quick Start Guide
- Owner's Manual

RR2160 MkII Front Panel



F1 Tone Off (Defeat) Control (Page 23)

Press to take the tone controls out of the signal path so that they have no effect regardless of where they're set. The button's blue LED will light when tone controls are inactive.

F2 Bass Control (Page 23)

Turn to change the amount of low frequency information being sent to your speakers or headphones. This control is inactive when the Tone Off button (F1) is active.

NOTE: When using small speakers (those with limited bass handling capability) be careful when increasing bass content, particularly if any Speaker EQ (F15) settings are active.

F3 Balance Control (Page 24)

Turn to adjust for left-right imbalances.

F4 Front Panel Display

This display shows the selected input or radio station currently tuned, the current volume, and menu items when operating or setting up your RR2160 MkII.

F5 Treble Control (Page 23)

Turn to change the amount of high frequency information being sent to your speakers or headphones. This control is inactive when the Tone Off button (F1) is active.

F6 Tuning Up (Menu Select) (Pages 25, 28)

F7 Tuning Down (Menu Select) (Pages 25, 28)

Press to tune to a broadcast frequency higher or lower than the one currently selected. Also use this button with the Menu and Enter buttons (F8 and F9) to navigate menus.

F8 Menu (Pages 27, 28)

Hold down this button (2-3 seconds) to access and navigate the RR2160 MkII's setup menu. Briefly press this button to move back in menus or to navigate available selections for Internet Radio.

F9 Enter (Pages 27, 28)

When navigating a menu (F8), this button will access sub-menus or select highlighted options.

F10 On/Standby (Page 22)

When the RR2160 MkII is plugged in and the Master Power switch (R11) is On, pressing the front panel On/Standby button will toggle the unit from standby condition (everything off except for the IR sensor and associated circuitry) to fully operational. When the unit is in standby mode, the button's blue LED will light.

F11 Headphone Jack (Page 24)

Connect a 1/4 inch phone plug (or an adaptor) here for headphone listening.

F12 Headphone Level Control (Page 24)

Turn to control headphone volume.

F13 Aux Input Jack (Pages 12, 22)

Use this stereo 3.5mm jack to plug in any portable audio device with a headphone or line-level output.

F14 Speaker Selector (Page 23)

When two pairs of speakers are connected to the RR2160 MkII, this will let you select which pair is active.

F15 Speaker EQ (Page 23)

Press to cycle through the available Speaker EQ settings.

F16 External Loop (Page 12)

Press to add a product connected to the rear panel External Processor Loop connections (R21) to the signal path. (Remember to turn that external unit on!) The button's blue LED will light when you've chosen this optional signal path.

Note: When the signal is routed through the External Processor Loop and there is no unit connected to the jacks, no signal will appear at either the loudspeaker or headphone outputs.

F17 USB Input (Pages 12, 22)

Connect the output of a compatible USB storage device (32GB maximum) to this jack for playback of audio files.

F18 Source Selector (Page 22)

Press to select the input source (FM, AM, analog audio, digital audio, USB, phono) that you want to listen to.

F19 Record (Pages 12, 24)

Press to cycle through the available inputs that can be used as a recording source. The REC out signal source is always active and is set by this function button.

F20 Mute On/Off (Page 22)

Press to mute the speaker outputs. The button's blue LED will be on when Mute is engaged.

F21 Master Volume control (Page 22)

Turn to the right (clockwise) to increase volume and to the left (counterclockwise) to decrease levels.

R6 FM/HD Antenna (Page 11)

Connect the supplied FM antenna or an optional external FM antenna to this connector.

R7 Coaxial / Optical Digital Inputs (Pages 12, 22)

Connect coaxial or optical digital output from any audio source such as a CD player, DVD player, or Blu-ray Disc player.

R8 Accessory Power USB (Page 18).

Use these USB ports to provide 5V power to accessories such as phones or tablets. Do not connect a data source to these ports.

R9 Trigger Outputs (Page 18)

These 3.5mm mono mini-jacks provide a continuous 12VDC signal that may be used to control optional external amplifiers from Outlaw and other brands, as well as other compatible accessories.

R10 IR Input/Output (Page 18)

When your RR2160MkII is hidden behind doors that prevent the remote control from "seeing" the front panel IR sensor, you may connect an optional, external IR sensor to this 3.5mm mini-plug. To send the IR signal to another product in a "daisy change" configuration, connect the IR Out jack to another product with a compatible IR system.

R11 Master Power Switch (Page 22)

When the power cord has been plugged into an AC output, put this switch in the On position to connect the receiver to AC. When this switch is on, the front panel On/Standby pushbutton (F10) is used to turn the receiver "on" or place it in the "standby" mode.

R12 Right Speaker Binding Posts (Page 15)

Use these binding posts to connect your primary (Speakers A) and secondary (Speakers B) loudspeakers to the RR2160MkII.

R13 Phono cartridge sensitivity selector switch (Page 12)

This switch adjusts the phono pre-amp to work with either moving magnet (MM) or moving coil (MC) phono cartridges. Set it to correspond with the type of cartridge you're using.

R14 Phono inputs (Page 12)

Plug your turntable's output cables into these jacks.

Note: Do not connect with a phono pre-amp output. A turntable with a pre-amp should be connected to one of the Analog inputs.

R15 Ground connector (Page 12)

Connect the ground wire from your turntable to this screw connector.

RR2160MkII Rear Panel

R1 WiFi Antenna (Page 12)

When hardwiring an Ethernet cable is not possible this antenna is used to receive a WiFi signal.

R2 Serial Number

Write this number in the space provided on page 4 for future reference.

R3 USB Input / Upgrade (Pages 12, 22, 28)

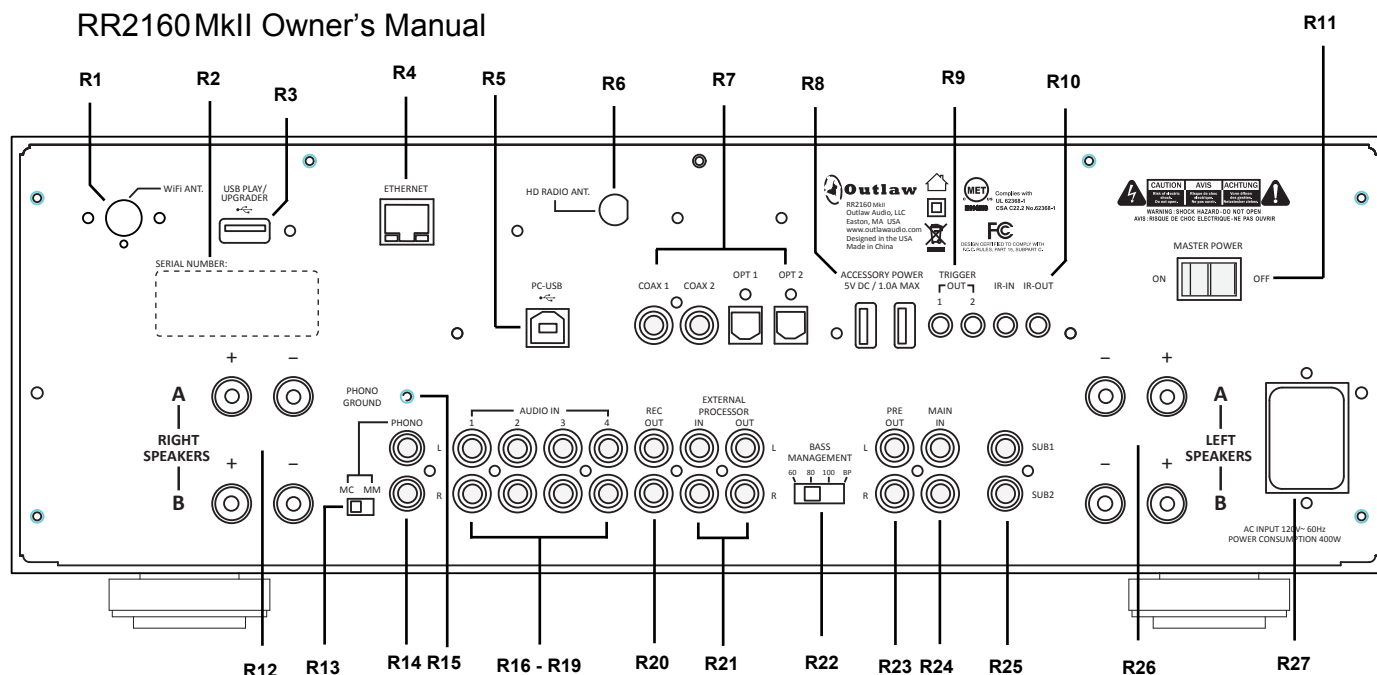
Connect the USB output of a compatible MP3 audio player, flash drive, or external hard drive (32GB/3.0 speed max) to this jack for playback of audio files. This port is also used for software upgrades, when available (see page 28).

R4 Ethernet (Page 12)

Connect the RR2160MkII to a network for Internet Radio and remote-app access.

R5 PC USB Input (Pages 12, 22)

Connect the RR2160MkII to a computer and select the PC USB input to allow the RR2160MkII to act as an external sound card.

**R16 Analog 1 Inputs** (Pages 12, 22)**R17 Analog 2 Inputs** (Pages 12, 22)**R18 Analog 3 Inputs** (Pages 12, 22)**R19 Analog 4 Inputs** (Pages 12, 22)

Connect the line-level analog audio outputs of sources such as a CD player, DVD/Blu-ray Disc player, network media player, Bluetooth or streaming adapter or dongle, satellite or cable box to these jacks.

R20 Record Output jacks (Pages 12, 24)

Connect analog audio inputs from your recording device or encoder for digital storage to these jacks.

Note: These are fixed-level outputs and are not affected by the RR2160MkII's volume control. If you're using a portable recording device (MiniDisc recorder, etc.), you may use shielded stereo "Y" cords (3.5 mm stereo miniplug to two RCA-type jacks) to go from it to the RR2160MkII.

R21 External Processor Loop connections (Page 12)

Connect an external processor (equalizer, electronic crossover, surround processor, etc.) to these jacks. These outputs are also fixed-level. The Loop input may also be used as an additional analog input.

R22 Bass Management selector switch (Page 16)

This switch lets you adjust the internal crossover (bass management system) to route user-selected low frequencies to the subwoofer output (R25) while the rest of the audio signal is sent to the amplifier and then to the main loudspeakers.

R23 Preamplifier outputs (Page 17)

These outputs allow you to connect a high output power amplifier if needed. Simply remove the jumpers and connect the preamp outputs to the inputs of the additional amplifier.

Note: Removing the jumpers means that the RR2160MkII's internal amplifier does not receive a signal and cannot send any output to the speakers connected to it. Use shielded "Y" cords to connect both the internal amplifier and another amplifier to the receiver's preamp section.

R24 Main Amp inputs (Page 17)

These inputs are normally connected to the preamplifier outputs by jumpers. (See R23 above.)

R25 Subwoofer outputs (Page 17)

Connect a powered subwoofer to either the SUB1 or SUB2 output. Make sure you've set the Bass Management selector switch (R22) correctly. The output from this connector is variable and controlled by the Master Volume setting (F21).

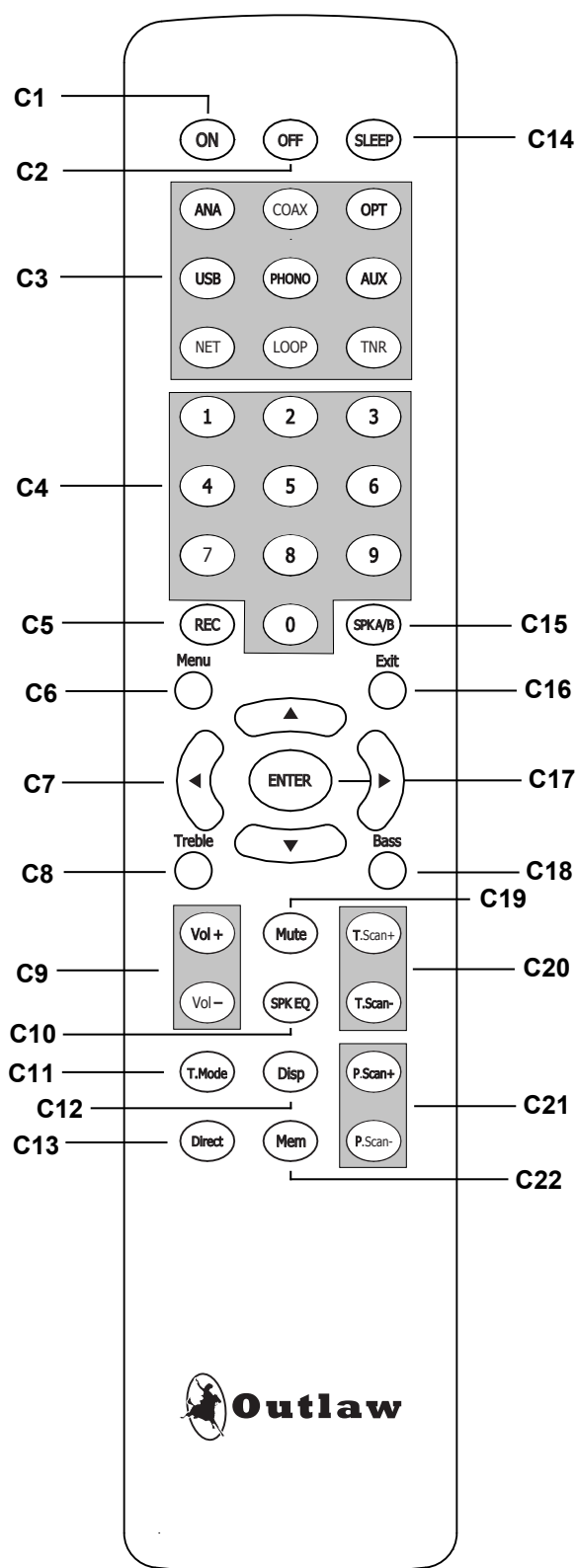
R26 Left Speaker Binding Posts (Page 15)

Use these binding posts to connect your primary (Speakers A) and secondary (Speakers B) speakers to the RR2160MkII.

R27 AC Socket (Page 18)

Connect the supplied AC power cord to this socket before turning on the Master Power Switch (R11).

Remote Control



- C1 Power On** (Page 22)
Press this button to turn on the RR2160 MkII.
- C2 Power Off** (Page 22)
Press this button to place the receiver in standby mode.
- C3 Source/Input Selectors** (Page 22)
Press the button corresponding to the name of the input you wish to listen to. For the analog audio inputs (ANA), coaxial digital audio inputs (COAX), optical digital inputs (OPT), USB inputs (USB), and Internet Radio inputs (NET), press the button multiple times to cycle through the input choices.
- C4 Numeric Keypad (0-9)** (Page 25)
Press these buttons to enter numbers for different functions such as direct input of station frequencies and direct access to preset stations for the tuner.
- C5 Record** (Pages 12, 24)
Press this button to cycle through the available analog inputs that can be used as the recording source.
- C6 Menu** (Pages 27, 28)
Hold down this button to access the RR2160 MkII's setup menu, or press it briefly to navigate back when utilizing Internet Radio or the setup menu.
- C7 Cursor Control** (Pages 25, 26, 28)
The Left and Right buttons provide balance control. The Up and Down buttons provide the same function as the Tuning Up/Down buttons (F6/F7 on the front panel) when using the tuner or navigating USB or Internet Radio.
- C8 Treble control** (Page 23)
This button and the Left/Right cursor buttons control the treble setting, which is displayed on the front panel display.
- C9 Volume Up/Down** (Page 22)
Press these buttons to raise or lower the volume.
- C10 Speaker EQ** (Page 23)
Press this button to cycle through the available Speaker EQ settings.
- C11 Tuner Mode** (Page 25)
This button selects either the "FM Stereo" or "FM Mono" tuner mode.
- C12 Display** (Page 28)
This button adjusts the brightness of the front panel display.
- C13 Direct** (Page 25)
This button starts the process of selecting a broadcast station directly. Within five seconds of pressing the button, key in a broadcast frequency using the numeric pad (C4).
- C14 Sleep** (Page 25)
Press this button to activate the sleep function, which turns the RR2160 MkII off after a user-selectable amount of time.

C15 Speaker Selector (Page 23)

When two pairs of speakers are connected to the RR2160 MkII, this button selects which pair is active.

C16 Exit (Page 28)

Press this button to exit the RR2160 MkII's setup menu.

C17 Enter (Pages 26 - 28)

When navigating the setup menu (C6), pressing this button will access sub-menus or select highlighted options. Or, press to choose a new track after using the Up/Down cursor arrows (C7) to search for another track.

C18 Bass (Page 23)

This button and the Left/Right cursor buttons provide control of the bass setting, which is displayed on the front panel display.

NOTE: When using small speakers (those with limited bass handling capability) be careful when increasing bass content, particularly if any Speaker EQ (C10) settings are active.

C19 Mute On/Off (Page 22)

Press this button to mute the speaker outputs. The front panel mute button's blue LED will be on when Mute is engaged.

C20 Tuner Scan Up/Down (Pages 25, 28)

When the tuner is in use, press these buttons to go to the next higher or lower broadcast frequency.

C21 Preset Up/Down (Page 26)

Press these buttons to scan up and down through the list of radio station frequencies that you have programmed into the RR2160 MkII.

C22 Memory (Page 26)

Press this button to begin the process of entering a radio station's frequency into the tuner memory for quick recall.

Connecting Your RR2160MkII

Before trying to connect your RR2160 MkII to other system components, please observe the following simple precautions:

- Don't connect the power cord to either the AC outlet or your RR 2160 until you've made all other connections.
- Always turn off any device before connecting it to the RR2160 MkII. Better yet, unplug the device from its AC power source, as automatic turn-on signals may inadvertently turn the product on. Better safe than sorry!
- Always pay attention to the warnings, options, and specific procedures contained in the instructions that came with the component you're connecting.
- For analog connections, remember that red input jacks = right channel audio
white input jacks = left channel audio
- Insert all plugs and connectors securely. If you don't, you may experience noise, poor performance, or equipment damage.
- DO NOT bundle audio connection cables with power cords and speaker cables. To get the performance you expect, run all the power cords down one side of the cabinet, all the signal connections down the other side, and the speaker cables down the center.
- Connect your speakers after you've connected all your other components to the RR2160 MkII but before you connect the power cord.

Connecting and Using an Antenna

The RR2160 MkII has an internal FM/FM Stereo/HD tuner with a connection for the FM antennae.

FM Antenna

Connect the supplied FM dipole antenna by screwing the antenna's coaxial connector onto the FM antenna connector (R7).

Note: This antenna is for indoor use only. For best reception, fully extend the antenna and experiment with its positioning to get the strongest signal. If FM reception with the supplied indoor antenna does not provide a strong enough signal for acceptable reception, we recommend using an optional amplified indoor or high-gain outdoor antenna.

RR2160MkII Owner's Manual

WiFi Antenna

Use this antenna to pull a WiFi signal in situations where a wired Ethernet connection cannot be connected to the rear of the RR2160MkII.

Experiment with the antenna's position to obtain the strongest signal.

Connecting Source Components

Connect your input sources as shown below. Once the source is connected you may select it by pressing the front panel Source selector (F18) to step through your various input choices. The RR2160MkII will show which input is currently enabled by displaying the name on the front panel display.

Phono

Plug your turntable's output cables into the L/R Phono inputs (R14). Make sure you've connected Left to Left and Right to Right. Next, attach the ground connection from your turntable's tonearm to the ground connector screw terminal (R15).

Finally, set the phono cartridge sensitivity selector switch (R13) to either MM (moving magnet) or MC (moving coil) to correspond with the type of cartridge you are using. Note that some high output moving coil cartridges work better when this selector is set to MM.

USB

Use a "fast USB" cable to connect a Windows or Mac based computer to the RR2160MkII's rear panel USB 2.0 input (R5).

Recording Device

Using shielded RCA-to-RCA cables, connect your recording device's analog audio outputs to one of the RR2160MkII's analog inputs (R16-R19). Next, connect your recording device's analog audio inputs to the RR2160MkII's L/R Record outputs (R20).

There are two points you need to remember:

- The REC outputs "fixed-level" in that they are not affected by the RR2160 MkII's volume control.
- You must select the source you want to record by using the Record Selector (F19 or C5).

If your recording device has the 3.5 mm stereo miniplugs often used on portable audio products, use an optional adaptor cable to complete your connections.

Aux

Connect a music player, smartphone, tablet, streaming adapter or any other playback device with a stereo 3.5 mm jack for either headphone or line-level output to the RR2160MkII's front panel Aux input (F13).

CD/DVD/BD/Video

Using shielded RCA-to-RCA cables, connect the analog audio outputs of a CD, DVD, Blu-ray Disc player, or A/V source (VCR, satellite or cable box, etc.) to one set of the RR 2160's analog inputs (R16-R19). As with other sources, make sure to connect Left to Left and Right to Right. To connect the BTR-250D, you can use the 3.5mm to RCA cable supplied with the BTR. For sources that offer a coaxial or optical digital output, they may be connected to a coaxial or optical digital input instead of an analog input.

NOTE: The RR2160MkII does not have any video inputs for a DVD/BD player or other video device. Any video connections should be made directly to an appropriate input on your display device.

Ethernet

Connect the RR2160MkII to your home network with an Ethernet cable for access to Internet Radio.

External Loop

Description of External Loop

This external processor loop (R21) allows you to insert a wide variety of external devices such as equalizers or surround processors into the RR2160MkII's signal path. However, its use is optional. If your system doesn't need the added flexibility, make sure that the blue LED in the External Loop button (F16) is not illuminated. Since the External Loop may be switched in or out, it is best suited to devices that you might use with some input sources, but not all. In addition, the input of the External Loop may be used alone as an additional input.

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External Loop Connections

Using shielded RCA-to-RCA cables, connect the external processor's analog audio outputs to the RR2160 MkII's L & R analog audio inputs. Next, connect the external processor's analog audio inputs to the RR2160 MkII's analog audio outputs.

Remember these two points.

- You must push the front panel External Loop button (F16) or the LOOP button of the Source/Input selector buttons on the remote (C3) to route the audio signal to and from the external processor. The button's blue LED will light when the external loop is active.
- The external processor loop is a "fixed level" loop. The loop output is not affected by the RR2160 MkII's Master Volume Control.

Preamplifier Outputs/Main Amplifier Inputs

The RR2160 MkII is shipped with U-shaped jumpers that connect the preamplifier and power amplifier sections of the receiver. For most systems no change is needed here, as you will use both sections of the RR2160 MkII. However, if you wish to use an optional, external amplifier, remove the jumper plugs and connect the left and right output jacks on the RR2160 MkII to the matching inputs on your amplifier. Save the jumper plugs for use should you later wish to return to normal operation.

These jacks also provide a means to insert an equalizer or other device controller in the audio signal path when you wish to have that device ALWAYS be used. A good example of this is the external equalizer/controller used with certain brands of speakers.

To connect an external processor so that it is always in the audio path, remove the two U shaped jumpers. As noted above, you will want to put them someplace safe in case you need them later. You may want to store them with this manual or bag and tape them to the rear or underside of the RR2160 MkII.

Connect the RR2160 MkII's L & R Preamp audio outputs (R23) to the inputs of the external processor. Next, connect the outputs of the external processor to the RR2160 MkII's Main amp audio inputs (R24).

Loudspeaker Connections

The connections between the RR2160 MkII and your loudspeakers are critical to good sound. Although there's a lot of debate about the "best" speaker wire and the "best" connectors, our advice is to use what you feel is appropriate. However, we do feel that there is one vital guideline: If the run from your RR 2160 to a speaker is less than 40 feet, use speaker wire with a conductor diameter that's identified as "16 gauge" or lower. For longer runs, use a minimum of 14 gauge wiring.

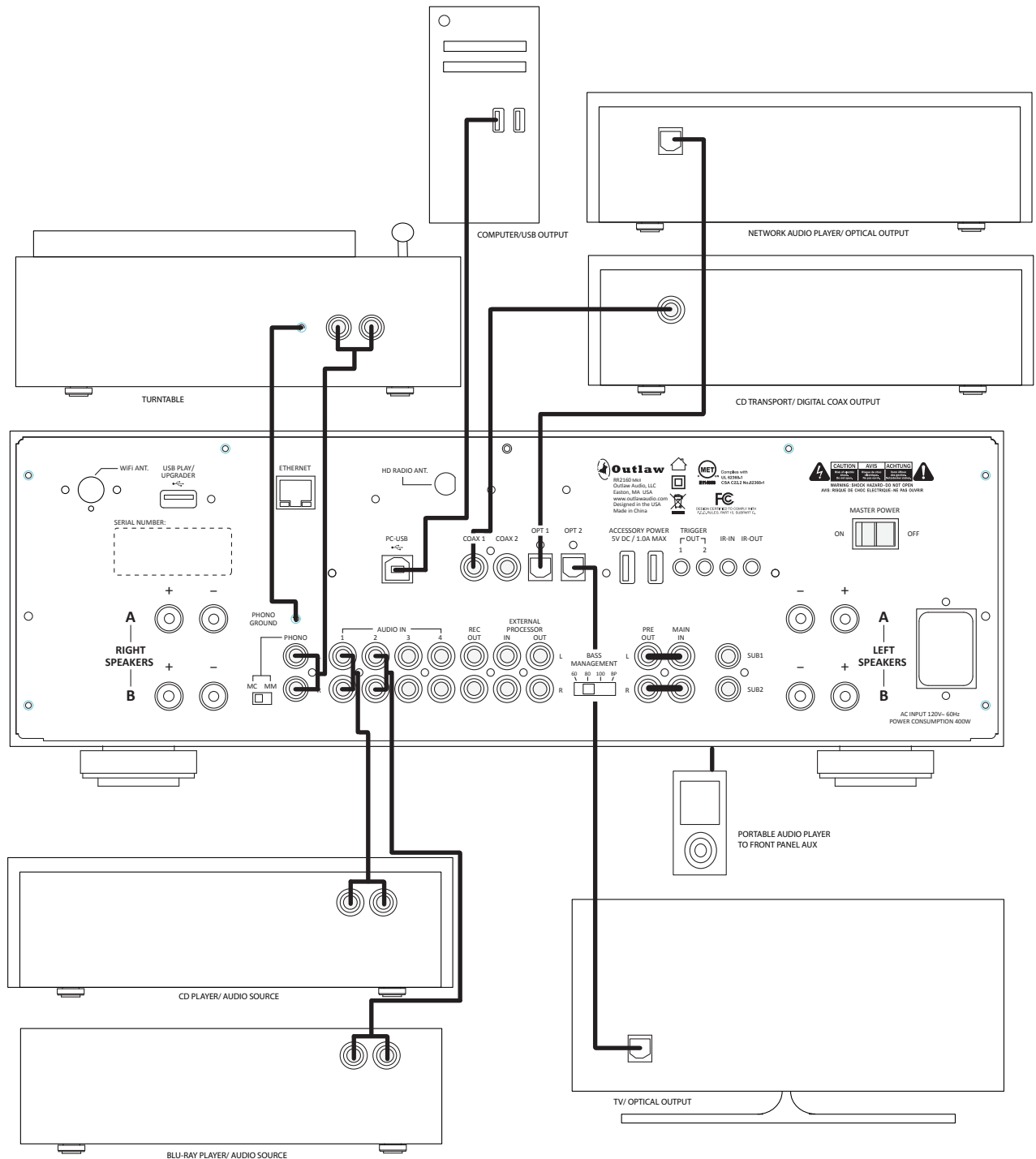
If you're confused by the "gauge," you're not alone. The standard in wire measurements is called AWG, or American Wire Gauge. The AWG number refers to the diameter of one conductor only (speaker wire has two conductors) and smaller gauge numbers mean larger conductors. Here's a short list of gauge numbers and their corresponding diameters:

12 gauge	.0808"
14 gauge	.0641"
16 gauge	.0508"
18 gauge	.0402"
22 gauge	.0254"

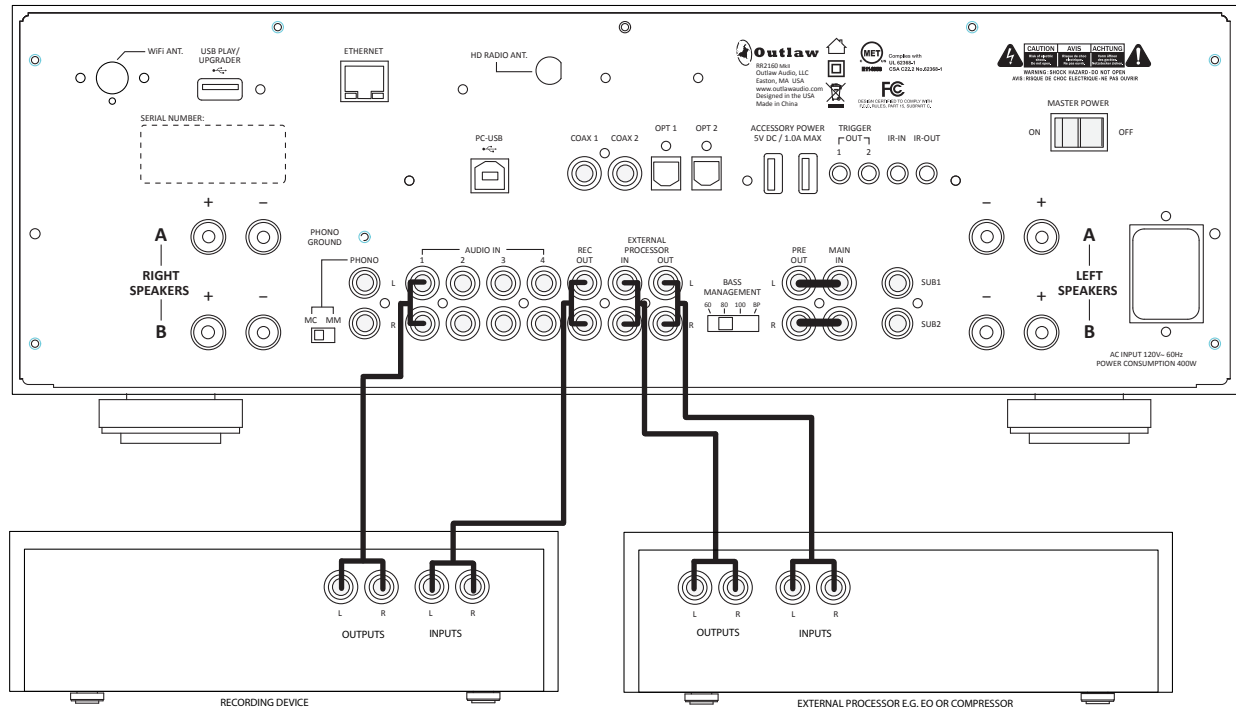
You can see that "hardware store" 22 or 24 gauge wire is very thin. We don't recommend it for any serious audio application. Even 18 gauge "zip cord" (also called "lamp cord") is not that substantial. Our minimum recommendation is 16 gauge, and 14 gauge is better. 12 gauge is excellent but is comparatively hard to work with (it usually doesn't bend easily and terminations – lugs or banana plugs – are problematic.) The advantage of large diameter wire is that, all else being equal, it has less resistance to current flow than thin wire. Wherever possible, the same length of speaker wire should be used for both speakers, even if one is positioned closer to the RR2160 MkII than the other.

RR2160MkII Owner's Manual

Connecting Audio Equipment to the RR2160 MkII



Connecting Recording Equipment and An External Processor to the RR2160 MkII



Speaker Connections

Many Outlaws will use full range speakers with the RR2160 MkII. These speakers reproduce the entire audible range from a single enclosure. Some will augment their full range speakers' bass output capability by adding a subwoofer. In still other cases, some will use compact "monitor" or bookshelf speakers with limited low end performance in combination with a separate subwoofer. Regardless of the configuration, brand or model of your speakers, the RR2160 MkII is uniquely designed to provide outstanding sound quality.

Physical Connections

The RR2160 MkII accommodates two separate pairs of speakers so that you may have one pair in your main listening room and another in a remote location such as a patio or kitchen. Speaker connections are made the same way for both sets of speakers, but always make certain that you connect a pair of speakers, not just one. As the audio sent to both pairs of speakers is the same, it makes no difference which pair is connected to which set of terminals.

The speaker binding posts (R12 and R26) are five-way connectors with gold-plated contact areas that accept bare wire, pin terminations, spade lugs, and banana plugs.

The choice is yours.

This receiver is capable of powering 2 pairs of speakers, Speaker A and Speaker B. While this unit can support down to a 8 ohm load, if you plan on running both pairs of speakers concurrently, they will need to be rated 16 ohm nominal.

Bare Wire or Pin Terminations

Unscrew the outer barrel of the speaker connector until you see the hole in its center post. Insert the conductor or pin into the hole and screw the outer barrel tightly.

- **Spade Lugs:** These look like small two-pronged forks. Unscrew the barrel enough to place the lug's prongs around the inner post and then retighten the barrel.
- **Banana Plugs:** Insert them into the holes in the end of each post/barrel assembly. Just push them in carefully and you're done.

CAUTION: DO NOT over tighten the barrels. This isn't a contest of strength. Just hand tighten the barrel enough to insure good contact so that it is snug to the wire or termination device and the speaker terminal.

Whichever type of termination you use, it is important to make sure that the individual wire strands that make up each conductor bundle are tightly wrapped together and that there are no frayed ends that protrude past the speaker terminal or the wire termination for that conductor. This will prevent short circuits and possible amplifier failure.

Remember these three points:

- Make sure to observe proper continuity and polarity.
- For continuity, make sure you connect your main Left speaker to System A's Left terminals and your main Right speaker to the System A Right terminals. Then connect your secondary speakers to System B terminals, making sure to connect the Left speaker to the Left terminals and the Right speaker to the Right terminals. Care here will save a lot of time later.
- The RR2160 MkII's speaker connections are color-coded. Red terminals are "+" or "hot" while black terminals are "-" or "ground." For proper polarity, make sure that you've connected the proper speaker's "+" terminal (the one with the red barrel) to your speaker's "+" terminal. Then connect the "-" terminal (it has a black barrel) to the same speaker's "-" terminal. It's that simple.

A Note On Polarity/Phase

When speakers are connected correctly, they are said to be "in phase." This is critical to proper sound reproduction as it means that the drivers in each speaker work together, with the cones in each speaker moving in the same direction at the same time. When speakers are hooked up "out of phase," the drivers in each speaker respond differently to the amplifier's signal. For example, the drivers of the left speaker will push out when the drivers of the right speaker pull in, producing a very imprecise, almost "ghostly," stereo image or poor bass performance. No, there's nothing dangerous about hooking speakers up "out of phase." You won't damage anything, it just won't sound good.

Subwoofers and Bass Management Settings

The RR2160 MkII is unique among stereo receivers in that it has built-in bass management, a feature common, if not required, for multi-channel products, but not found in the two-channel world. While traditional two-channel systems have long used full-range speakers, modern audio systems – even those designed for two-channel music – may use frequency limited bookshelf speakers.

Bass Management

Rather than provide a simple subwoofer output that places the burden of bass management on the subwoofer, the RR2160 MkII includes a custom designed analog bass management system. The internal crossover is a symmetrical 2nd order (12 dB/octave) Butterworth filter set. BP (Bypass) duplicates the full range signal sent to your speakers at the subwoofer output. This enables you to utilize the crossover in your subwoofer.

If your system includes a subwoofer, read on for the configuration steps. If you are not using a subwoofer, skip to the next section.

Subwoofers come in two varieties, powered and passive. Powered subwoofers include their own built-in amplifier and are by far the most popular, while passive subwoofers require the use of a separate, external amplifier. You can use either type with your RR2160 MkII.