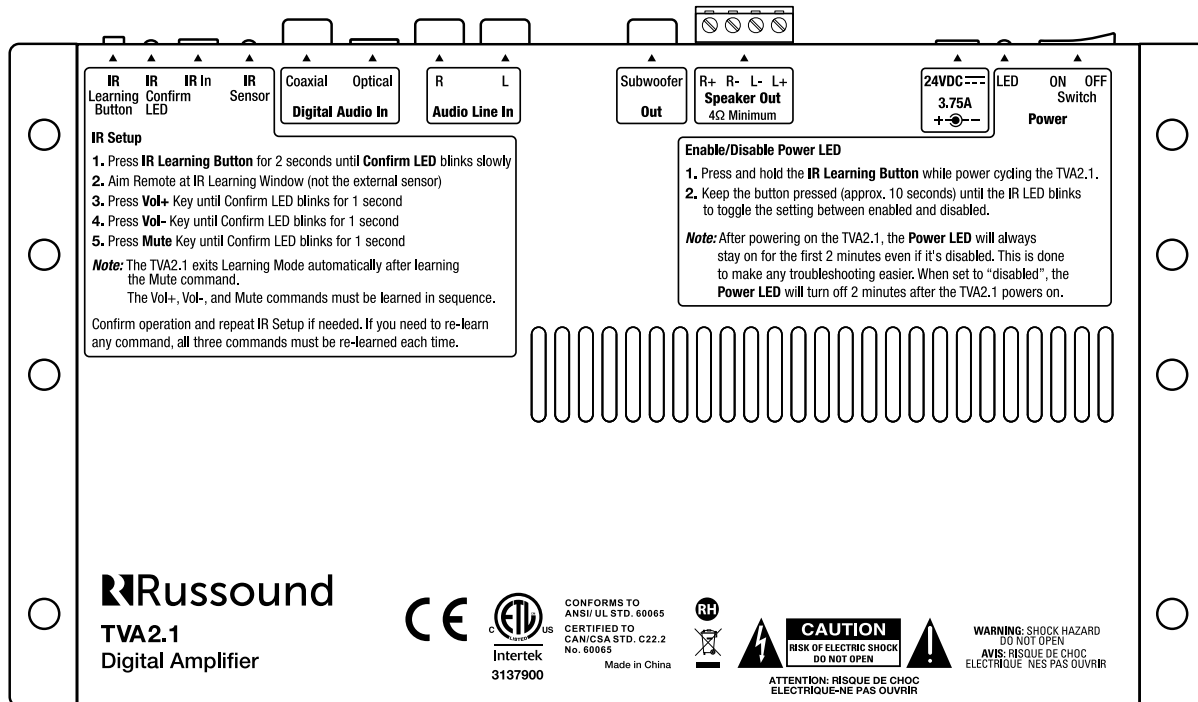



Russound®





TVA2.1 2-Channel Digital Amplifier Installation Manual


SAFETY INSTRUCTIONS



 **WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.


 **CAUTION:** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

 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 (servicing) instructions in the literature accompanying the appliance.


Safety Instructions

1. Read these instructions – All the safety and operating instructions should be read before this product is operated.
2. Keep these instructions – The safety and operating instructions should be retained for future reference.
3. Heed all warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow all instructions – All operating and use instructions should be followed.
5. Do not use this apparatus near water – The appliance should not be used near water or moisture – for example, in a wet basement or near a swimming pool, and the like.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding plug. A polarized plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.


10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart or rack is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 
13. Unplug the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified 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 has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Use only power supplies listed in the user manual / user instruction.
16. Switching Mode Power Supply:
Model: GPE908-240375d.
Input: 100-240V~ 50/60Hz 1.5A
Output: 24V=3750mA 90W

17. Do not install this equipment in a confined or building-in space such as a book case or similar unit, and remain a well ventilation conditions at open site. The ventilation should not be impeded by covering the ventilation openings with items such as newspaper, table-cloths, curtains etc.
18. WARNING : Please refer the information on exterior bottom enclosure for electrical and safety information before installing or operating the apparatus.
19. WARNING : To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that objects filled with liquids, such as vases, shall not be placed on apparatus.
20. WARNING: The direct plug-in adapter is used as disconnect device, the disconnect device shall remain readily operable



21.  Correct Disposal of this product. This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

THIS PRODUCT CONTAINS A LITHIUM COIN CELL BATTERY. IF MISUSED OR ABUSED THIS CAN RESULT IN:

22. CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.
23. WARNING: The battery (battery or batteries or battery pack) shall not be exposed to excessive Heat such as sunshine, fire or the like.
24. Smoke or gas hazard
25. Heat hazard
26. Fire hazard
27. Explosion hazard
28. WARNING:  Do Not Ingest Battery, Chemical Burn Hazard.

29. The remote control supplied with this product contains a coin/button cell battery. If the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
30. Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the product and
31. Keep it away from children.
If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
32. WARNING: Do not recharge non-rechargeable batteries.
33. WARNING: Avoid exposure to extreme heat or cold.
34. WARNING: If battery compartment does not close securely, stop using the product and keep it away from children and pets.
35. WARNING: Do not handle leaking or damaged Lithium batteries.
36. WARNING: Risk of leakage. Only use the specified type of batteries.
Never mix new and used batteries. Observe correct polarity. Remove batteries from products that are not in use for extended periods of time. Store batteries in a dry place.



Intertek
3137900

CONFORMS TO
ANSI/ UL STD. 60065
CERTIFIED TO
CAN/CSA STD. C.22.2
No. 60065

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 of 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, or consult the dealer or an experienced radio/TV technician for help.

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Introduction

The Russound TVA2.1 is a 2-channel low-profile amplifier, designed to be used to bring Better Sound for TV by allowing a high quality, easy-to-use, easy-to-install amplifier to be added to any television installation.

Its thin footprint means the TVA2.1 can be hidden behind the television or mounted in an in-wall panel behind a television for convenience. The built-in IR learning function allows for ANY typical remote control to be used and eliminates the need for an external control system. This can dramatically reduce the cost of adding additional rooms of audio to a home and keeps the operation simple and intuitive for the homeowner by letting them use their current remote control device.

The 2 channels of amplification are available for up to two pairs of 8-ohm speakers, while also offering a connection for a subwoofer to enhance a room's sound.

The TVA2.1 provides an array of useful features, such as IR Learning, use of a high quality low-profile external IR sensor, an LED Power Light that can be toggled on and off, as well as a low-profile chassis design.

The high quality class-D digital amplifier sends a respectable 30 Watts per channel of power into 8 ohms. There is a line level subwoofer output to support 2.1 Audio, making the TVA2.1 an easy solution for improving the audio quality in any room with enhanced bass response.

The TVA2.1 features three input options for flexibility. A traditional analog RCA line level input, and both Digital Coax and Optical S/PDIF. The TVA2.1 also supports 24bit/96khz digital audio in a PCM stereo format.

Product Features

- Class-D amplifier 2 x 30W RMS into 8 ohm
- 24-bit/96kHz S/PDIF support
- S/PDIF, optical and analog line level inputs
- 4-pole speaker detachable screw connector and line level RCA subwoofer output
- IR Learning for basic volume control.
- Small footprint with mounting options for discreet installation
- External 24v power supply

Thermal Protection

All Russound amplifiers are designed with special circuitry to safeguard the amplifier under a thermal overload condition. Thermal protection mode can only engage when the unit has been run at high volume for extended periods of time without adequate ventilation and/or when speaker impedances are below the minimum levels for the amplifier. If this fault occurs, turn off the amplifier, and check that the speaker impedance rating is above the minimum rating. Also check for adequate ventilation around the amplifier and make adjustments if necessary. Once the unit has cooled to safe operating temperatures, the amplifier may be powered back on.

Protection Circuitry

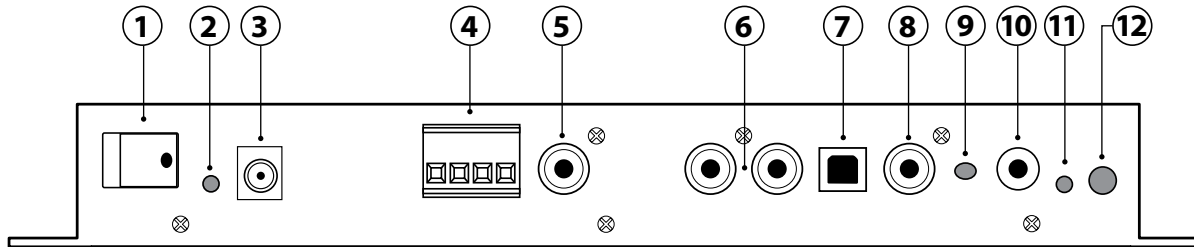
All Russound amplifiers are designed with special circuitry to safeguard the amplifier under a short-circuit condition. A faulty speaker can also cause a short circuit condition. The front panel LED illuminates orange when the amplifier is in short circuit protection. If this fault condition occurs, turn off the amplifier and check speakers for short circuit conditions when appropriate.

Mounting

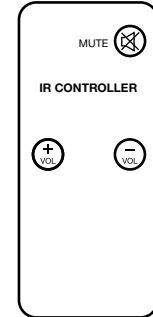
The mounting wings on the sides of the TVA2.1 can be used for various mounting options:

1. Mounting into a structured wiring type behind-the-tv box. The width of the TVA2.1 does not allow 6" on-center holes, but the TVA2.1 can be secured on either side and a simple Zip Tie can be used for securing the amplifier in any location within the structured wiring box.
2. Mounting to the rear of a TV using any 3rd party VESA type mounting panel, or simply by attaching it to a TV mount. The thin form factor allows it to fit on many tilt or pivot type mounts. In this type of installation, it is recommended to disable the Power LED light so that it does not bother the end user.
3. Wall Mounting (screws not included) – The installer can easily mount the TVA2.1 to a wall or cabinet.

FRONT PANEL CONNECTORS



TVA2.1 Digital Amplifier



TVA2.1RC Remote Control

① Power Switch: Turns the amplifier On/Off. This switch does not disconnect the main power feed from the amplifier; this requires that the power cord be unplugged from the outlet, or from the rear of the TVA2.1.

② Power LED: On start-up, the power LED (next to the power switch) lights red to show power on. This will remain on, but can be disabled to remove distraction when installed behind a TV.

Note: Disabling the LED will only disable the "normal" power status LED. The LED will always illuminate for any trouble conditions and for the first 2 minutes during power up of the device.

③ Power Supply: The TVA2.1 requires a 24VDC (3.75A) power supply which is included. The external dual voltage 24VDC 3.75A power supply provides high output power to support the full range of amplifier operation.

By using an IEC compatible outlet, international customers will be able to easily swap power cords with the appropriate plug type for their market.

④ Speaker Outputs: The speaker outputs are in parallel to the zone amplifier output. We recommend using 6-8 ohm speakers with the TVA2.1.

⑤ Subwoofer Output

⑥ Audio Line Input: Analog stereo audio input for a single input source.

⑦ Optical Input: Digital optical input for a single input source.

⑧ Coaxial Input: Digital coaxial input for a single input source.

⑨ IR Sensor: Receives the IR commands during the IR Learning process. This sensor is used only for IR Learning. The external IR Receiver is used during operation of the TVA2.1 for controlling volume and mute.

⑩ IR Input: 3.5mm jack for an IR Receiver. A Russound IR Receiver is included. If wiring your own 3.5mm plug to a receiver, the tip - is positive and the sleeve is negative. The external IR receiver is used to control the volume of the TVA2.1 using a standard remote control once the commands have been taught to the TVA2.1.

⑪ IR Confirm LED: Provides a visual confirmation that the TVA2.1 is receiving IR Signals when in the IR Learning Mode only.

⑫ IR Learning Button: Press for 2 seconds to initiate the IR Learning mode feature.

Press and Hold for at least 10 seconds during power up to toggle the use of the Power LED during normal operation.

Remote Control

The TVA2.1 comes supplied with a small credit card sized three button remote control that can be used for independent volume commands if a 3rd party remote control system is being used. For most installations, the supplied credit card remote will not be used.

The TVA2.1 features IR learning for the purpose of using a pre-existing TV or Universal Remote.

Simple TVA2.1 Amplifier Programming Instructions

Learning IR Mode Setup

This process allows you to learn the three volume-related IR commands (Vol +, Vol -, and Mute) from your current remote control.

1. Press the IR Learning Button for 2 seconds until the IR Confirm LED blinks slowly.
2. Place your remote control about 3-4 inches (7-10cm) away from the IR Learning window of the TVA2.1, aiming the remote directly at the IR Learning window.
3. Press the TV remote's Vol + key until the IR Confirm LED blinks for 1 second.
4. Press the remote's Vol - key until the IR Confirm LED blinks for 1 second.
5. Press the remote's Mute- key until the IR Confirm LED blinks for 1 second.
6. Confirm proper operation of all three volume commands. If any of the three commands must be re-learned, all three commands must be re-learned in order. Repeat ALL 6 steps again; then re-test for proper operation.

Note: The TVA2.1 exits the IR Learning Mode automatically after learning the Mute command.

The Vol +, Vol -, and Mute commands must be learned in sequence (1st Vol+, then Vol -, then Mute.)

Power LED Disabling (Toggle)

In some installations, such as bedrooms, it may be desirable to disable the Power LED so that it is not visible in a dark room.

To disable the Power LED:

1. Press and hold the IR Learning Button for approximately 10 seconds while powering on the TVA2.1 until the IR LED (next to the IR Learning Button) begins to blink. The IR Confirm LED will blink twice when toggling from "Enabled" to "Disabled" and will blink once when toggling from "Disabled" to "Enabled". Once the IR Confirm LED has blinked, you can release the IR Learning Button.

Note: After powering on the TVA2.1 Amplifier, the Power LED will always remain on for the first 2 minutes of operation EVEN IF you have disabled it. If the Power LED has been disabled, it will turn off after 2 minutes has passed.

The LED will always illuminate for any trouble conditions. Disabling the LED only affects the LED for normal status conditions.

To Enable the Power LED, repeat the same process.

TV Settings

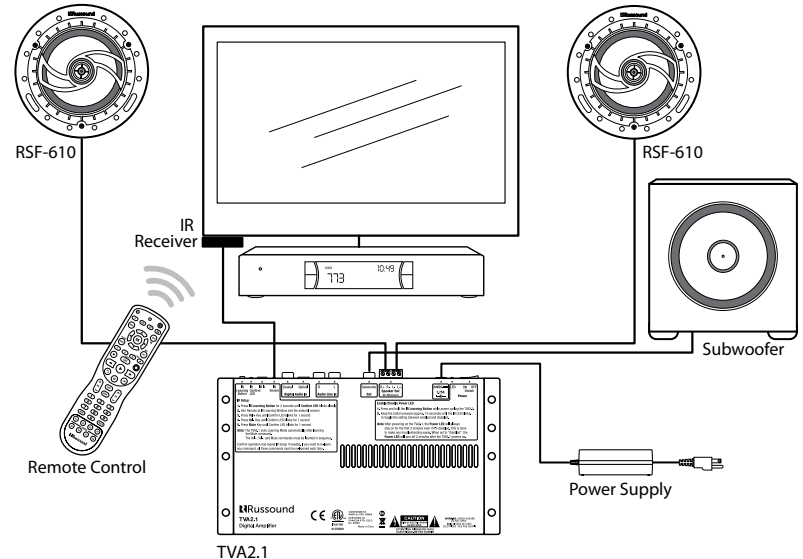
Certain settings must be changed on the TV when using the TVA2.1. Refer to your TV's owner's manual for exact instructions for your particular TV. These settings are typically found in the TV's setup configuration menu.

1. Disable TV Speakers - Since you will be using the TVA2.1 for all of your TV audio, your TV's internal speakers should be disabled.
2. If using a digital audio signal from your TV to the TVA2.1, make sure that the TV is configured to use stereo PCM for its audio output.

Connecting loudspeakers

The TVA2.1 is designed to be used with a pair of either 6 or 8 ohm speakers. Speaker connections should only be made while the TVA2.1 is powered off.

The TVA2.1 features a removable, screw-down speaker terminal.



Typical TVA2.1 Amplifier Installation

TECHNICAL SPECIFICATIONS

Audio Inputs: Stereo Line Level, coaxial or optical (PCM format)

Outputs: 30W per channel at 8 ohms <1% THD+N

Speaker out - removable screw-down connector for up to 12AWG wire,

Subwoofer out - (RCA) with integrated 120Hz low pass filter

IR Sensor Input: 3.5mm stereo jack

Amplifier Channels: 2

Signal-to-Noise Ratio: >90dB 20Hz to 20KHz

Frequency Response: 40Hz to 20KHz +/- 1dB, 20Hz -3dB, Sub Out: -3dB at 170Hz

Input Impedance: >22 ohms

Power Requirements: 24VDC 3.75A (External power supply)

Dimensions: 6.0"H x 9.875"W x 1.375"D (15.2 x 25.0 x 3.5 cm)

Weight: 2.0lbs. (0.9kg)

LIMITED WARRANTY

The Russound TVA2.1 Amplifier is guaranteed against all defects in materials and workmanship for two (2) years from the date of purchase. During this period, Russound will replace any defective parts and correct any defect in workmanship without charge for either parts or labor.

For this warranty to apply, the unit must be installed and used according to its written instructions. If service is necessary, it must be performed by Russound. The unit must be returned to Russound at the owner's expense and with prior written permission. Accidental damage and shipping damage are not considered defects, nor is damage resulting from abuse or from servicing by an agency or person not specifically authorized in writing by Russound.

This Warranty does not cover:

- Damage caused by abuse, accident, misuse, negligence, or improper installation or operation
- Power surges and lightning strikes
- Normal wear and maintenance
- Products that have been altered or modified
- Any product whose identifying number, decal, serial number, etc. has been altered, defaced or removed.

Russound sells products only through authorized Dealers and Distributors to ensure that customers obtain proper support and service. Any Russound product purchased from an unauthorized dealer or other source, including retailers, mail order sellers and online sellers will not be honored or serviced under existing Russound warranty policy. Any sale of products by an unauthorized source or other manner not authorized by Russound shall void the warranty on the applicable product.

Damage to or destruction of components due to application of excessive power voids the warranty on those parts. In these cases, repairs will be made on the basis of the retail value of the parts and labor. To return for repairs, the unit must be shipped to Russound at the owner's expense, along with a note explaining the nature of service required. Be sure to pack the unit in a corrugated container with at least three (3) inches of resilient material to protect the unit from damage in transit.

Before returning a unit for repair, call Russound at (603) 659-5170 for a Return Authorization number. Write this number on the shipping label and ship to:

Russound
ATTN: Service
1 Forbes Road
Newmarket, NH 03857

Due to continual efforts to improve product quality as new technology and techniques become available, Russound/FMP, Inc. reserves the right to revise system specifications without notice.



TVA2.1

Digital Amplifier

Installation Manual

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