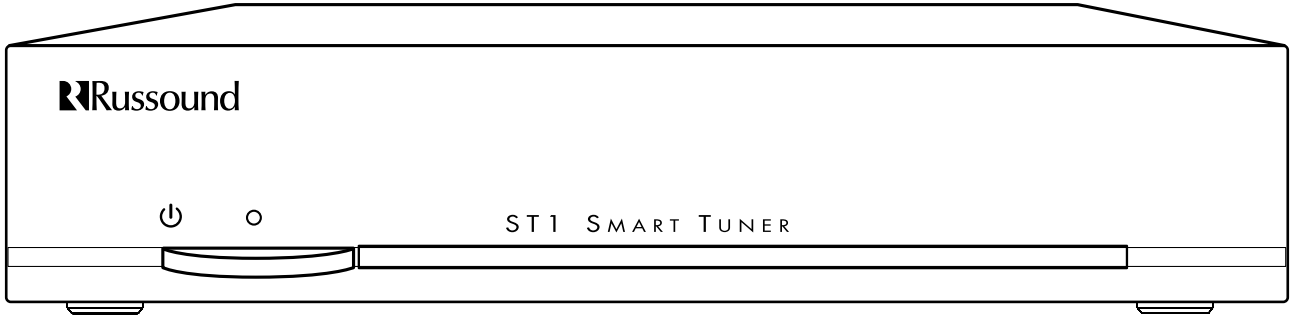
Russound®



ST1

Smart Tuner

Installation Manual

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 Instructions - All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the appliance in the operating instructions should be adhered to.
4. Follow Instructions - All operating and user instructions should be followed.
5. Water and Moisture - The appliance should not be used near water; for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus. Do not touch the appliance with wet hands. Do not handle the appliance or power cord with wet or damp hands. If water or any other liquid enters the appliance cabinet, take it to qualified service personnel for inspection.
6. Cleaning - The appliance should be cleaned only as recommended by the manufacturer. From time to time you should wipe off the front and side panels and the cabinet with a soft cloth. Do not use rough material, thinners, alcohol or other chemical solvents or cloths since this may damage the finish or remove the panel lettering.
7. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings, or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings. Place the unit in a well-ventilated location, leaving at least 2 inches (5 cm) of clearance on all sides, top and rear of unit for air flow. If ventilation is blocked, the unit may overheat and malfunction.
8. Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
9. Grounding or Polarization - Precaution should be taken so that the grounding or polarization means of an appliance is not defeated.
10. 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 at plugs, receptacles, and the point where they exit from the appliance.
11. Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
12. Main Power Disconnect - The power switch is a double-pole switch. When the switch is in the "Off" position, the appliance is completely disconnected from the main power.
13. Non-Use Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
14. Attachments - Only use attachments/accessories specified by the manufacturer.
15. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the appliance and cart combination to overturn.

16. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
17. Location of the Appliance - Do not mount this unit under a kitchen cabinet. Do not expose the appliance to direct sun light or heating units as the appliance internal components' temperature may rise and shorten the life of the components. Avoid damp and dusty places.
18. Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through the openings.
19. Servicing - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.
20. Damage Requiring Service - The appliance should be serviced by qualified service personnel when: A. The power supply cord or the plug has been damaged; B. Objects have fallen, liquid has been spilled into the appliance; C. The appliance has been exposed to rain; or D. The appliance does not appear to operate normally; or E. The appliance has been dropped or the enclosure is damaged.

CE TÜVRheInland c US

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.

Grounding an Outdoor Antenna

If the AM/FM tuner is used with an outdoor antenna, the antenna must be grounded against static charges and voltage surges. Consult the instructions that came with the antenna or contact the antenna manufacturer for proper installation instructions. The diagram gives a general depiction of how an outdoor antenna should be grounded. For complete guidelines on antenna grounding procedures, please consult the National Electrical Code, Section 810, ANSI/NFPA No. 70-1984.

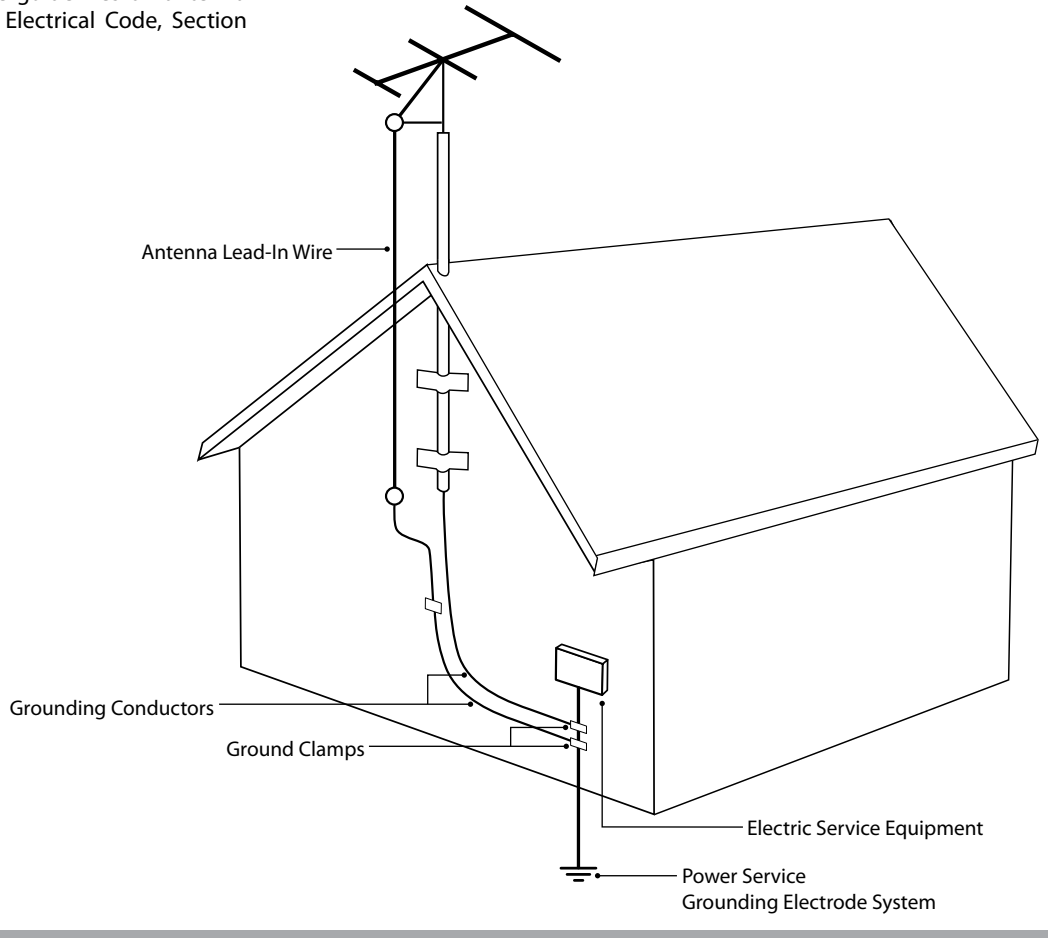


TABLE OF CONTENTS / PRODUCT OVERVIEW

Safety Instructions 2
Safety-Outdoor Antenna Connection 3
Product Overview 4
Front and Back Panel Illustrations 5
Front and Back Panel Features 6
Installation Options 7
Connections with MCA-Series Controllers 8-9
Operation 10
Warranty / Technical specifications 11

Introduction

Thank you for purchasing your Russound product!

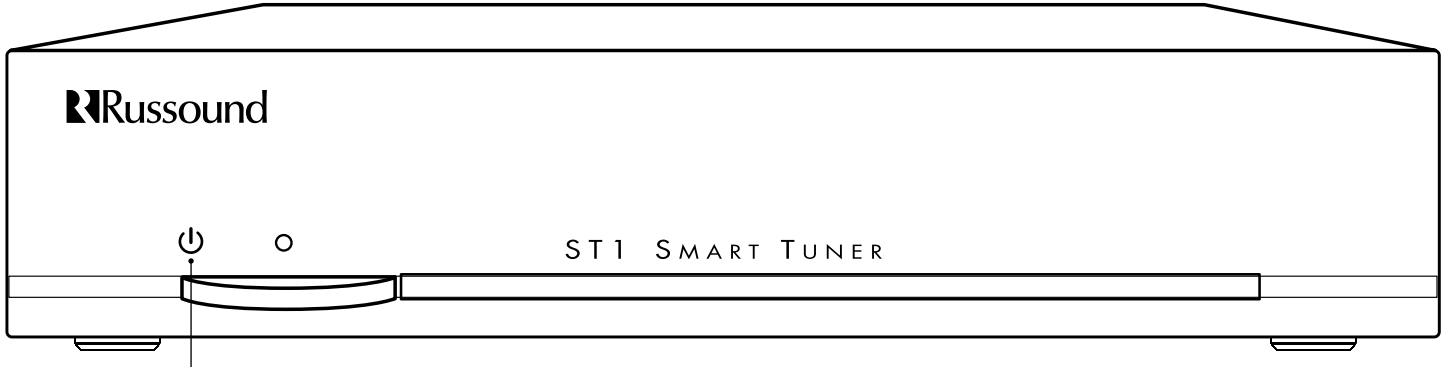
The ST1 Tuner is designed to work with all Russound MCA-Series controllers and offers the full functionality of an AM/FM Tuner including access to up to 36 presets/favorites.

With sensitive tuning circuitry, the ST1 can pull in AM and FM terrestrial broadcasts with clarity and features excellent channel separation for pleasing sound quality. A simple AM and FM antenna are included though based on the particular location of the tuner, an outdoor antenna may be required.

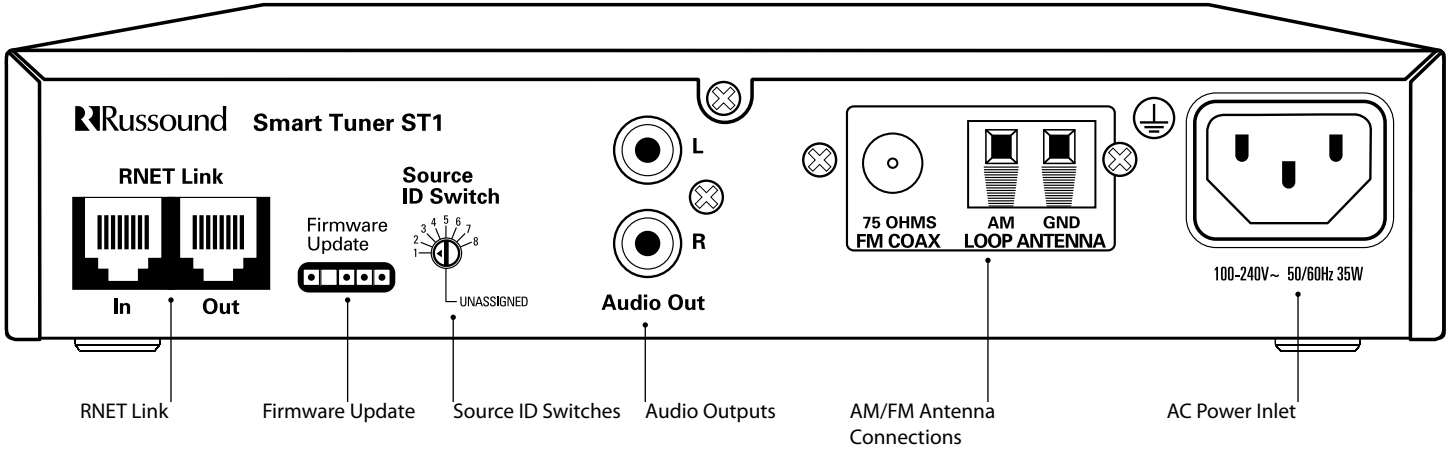
The ST1 features 6 banks of user configured station presets. Each bank has 6 presets so there are a total of 36 station presets that can be used to save user favorite AM and FM stations.

The ST1 will automatically select the proper band (AM or FM) based on the frequency entered from an MCA-Series remote control, the MyRussound App, or other Russound user interface. It also can be configured by the installer to use standard North American or European tuning which differ in the number of steps between each frequency and the total frequency range.

The ST1 features RDS (Radio Data System) reception that will display metadata the broadcasting station has encoded in the broadcast signal such as station name, and song information. All of this is visible on Russound MCA-Series system user interfaces which make this data available through the RNET communication protocol for third party control systems.



ST1 Front Panel



ST1 Rear Panel

Power Switch / LED

The Power Switch turns the ST1 on / off by disconnecting the main power feed. The Power Switch has an LED indicator to show if power is on or off. The LED indicator will be lit red when the power switch is turned on and there is a live electrical connection to AC power.

RNET Link

The ST1 uses the RNET link to communicate with the MCA-Series controller. All Russound devices with an RNET Link are connected in series using CAT5 patch cables terminated with RJ45 ends in the T568A configuration. Along with RNET Data signals, the RNET Link passes source IR signals. To avoid potential cross-talk between the source-specific IR repeating signal lines, the RNET Link cable can not exceed 18 inches in length.

Firmware Update

The ST1 can be updated in the field as new firmware is released using Russound's Advanced Programming Cable (#2500-521065) and a PC. When new firmware updates are released, they will be made available along with the update procedure for download from the Support Center at www.russound.com.

Source ID Switch

The Source ID Switch is used to identify the ST1 as a particular source number on the RNET bus for proper communication with the MCA-Series controller. The ST1 Source ID Switch must be set to match the source audio input the ST1 is connected to on the MCA-Series controller and must match the settings of the system configuration made through the controller's Web Config or the SCS-C5 software.

Audio Outputs

The Audio Outputs are connected to one of the MCA-Series controller's source audio inputs using the supplied RCA patch cables. This must correspond to the ST1 Source ID switch setting and system configuration of the MCA-Series controller made through Web Config or the SCS-C5 software.

AM/FM Antenna Connections

The ST1 comes with both an AM loop antenna and an FM Antenna terminated with a press-on coaxial fitting. Insert each lead of the AM loop antenna into the spring loaded terminals on the ST1. The FM antenna fitting is pressed onto the FM COAX terminal on the ST1. Each antenna can be individually positioned for optimum reception.

Alternatively, an outdoor antenna may be used for better reception of distant broadcasts or when there is significant interference from building structures. Follow the installation instructions that come with the chosen antenna and make sure to ground the antenna as shown in the beginning of this manual. A coaxial splitter can be used to supply antenna signals to multiple tuners. Depending on the outdoor antenna selected, it may be necessary to supply an adapter to convert a 75 Ohm coaxial cable to the 300 Ohm twin lead for the AM antenna connection to the ST1. This commonly available device is called a matching transformer and is relatively inexpensive.

AC Power Receptacle

The AC Power receptacle accepts a 3-prong IEC 320 type connector for quick disconnection of the supplied power cord.

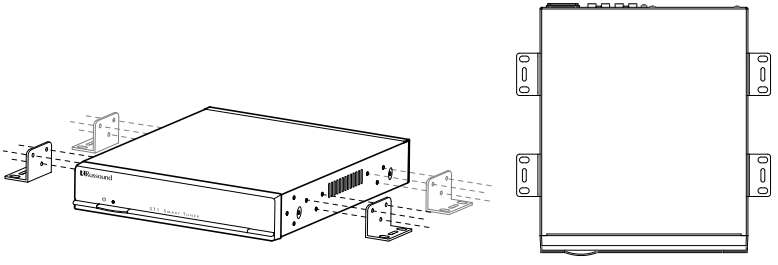
The ST1 can be set on a shelf or by using the supplied brackets it can be mounted in an A/V equipment rack, or surface-mounted. Its 1U high and ½ rack width size permits two units to be mounted alongside one another in a single rack unit space.

Wall Mounting

The ST1 comes with two small rack ears with attachment screws that can be used as wall mounting brackets. There are two attachment locations on each side of the ST1 for more mounting options.

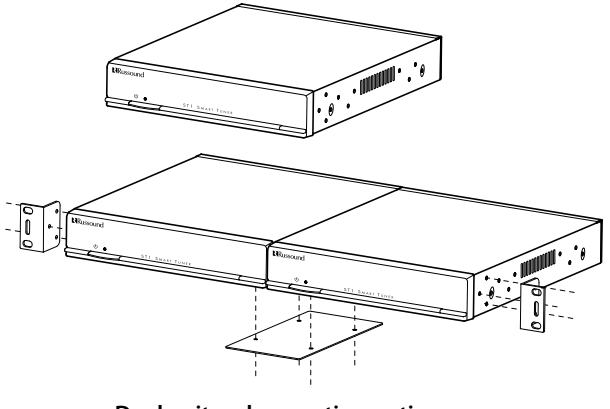
Rack Mounting

The rack mounting ears support either one or two ST1 units in a single rack space. To install one ST1 in a rack space, use the long ear and one of the short rack ears. The unit can be mounted either to the left or right side of the rack space. For two units in one rack space, use the flat plate provided on the bottom of the adjoining chassis to support and connect them, and use one small rack ear on each outer side of the combined unit assembly. When using the two-unit mounting option, the small side ventilation slots on the ST1 units will be next to one another in the middle of the rack space. To avoid overheating situations, make sure the top panel ventilation holes are not blocked.



Wall mounting option

Single unit rack mounting option



Dual unit rack mounting option

CONNECTIONS WITH MCA-SERIES CONTROLLERS

After mounting the ST1 in the desired location, connections for audio, communication, antenna signal, and power can be made.

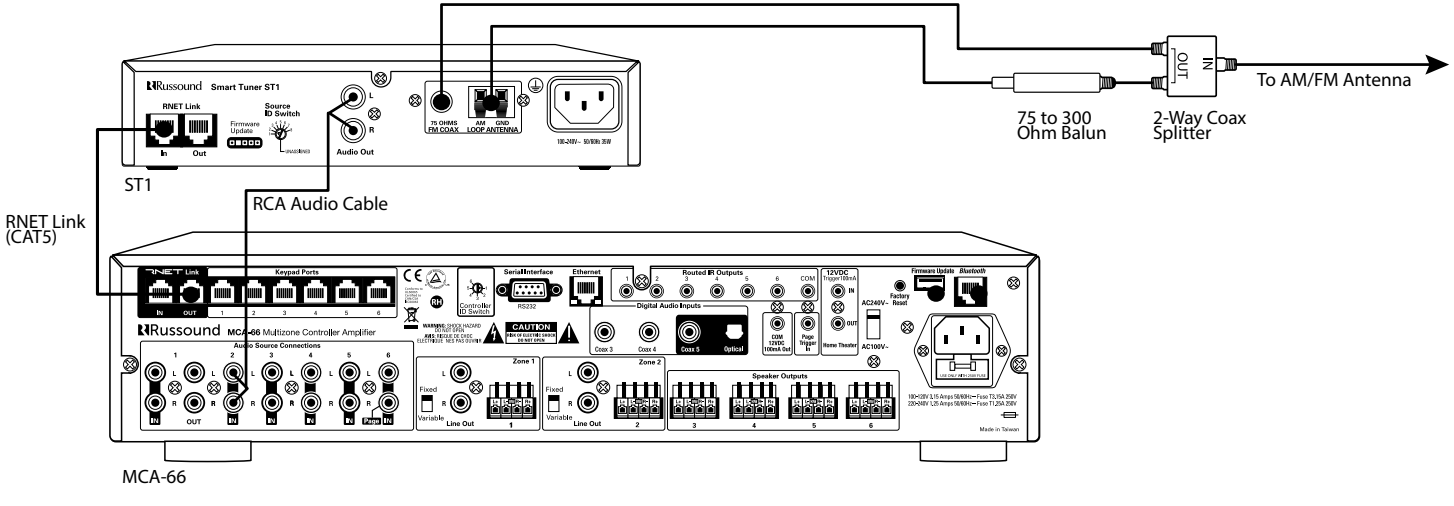
First set the Source ID switch to the value representing the source input to be used on the MCA-Series controller i.e. 2 = Source 2.

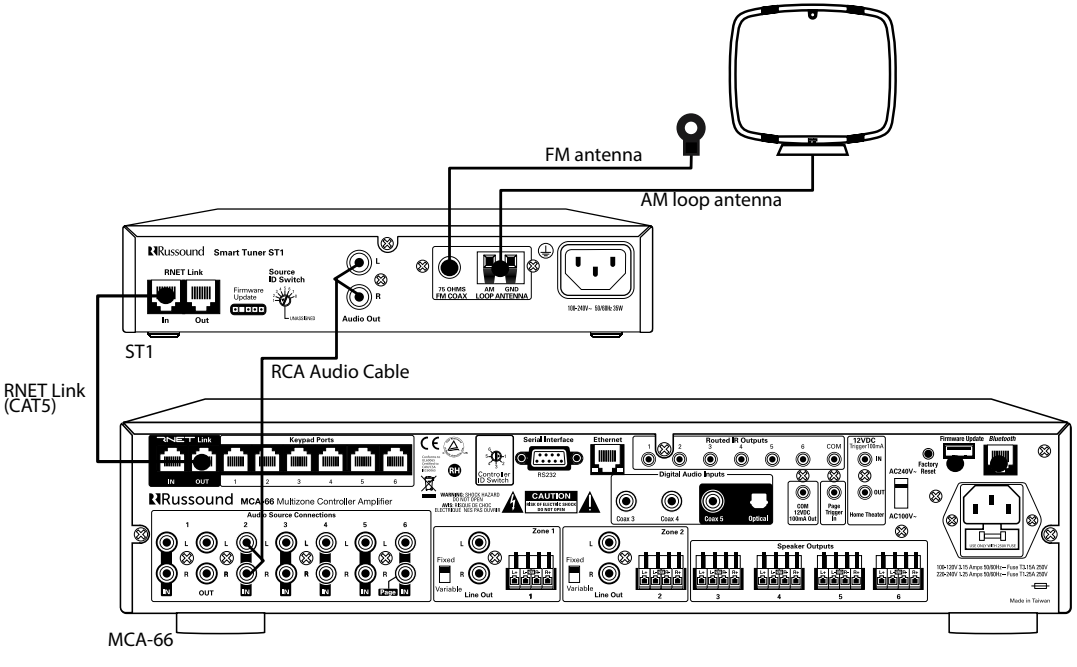
Next, connect the supplied RCA audio patch cables from the ST1 Audio Outputs to the source audio inputs on the MCA-Series controller that match the Source ID switch setting made.

Next connect the RNET Link cable from the ST1 to the MCA-Series controller or to another RNET link port that exists in the Russound system such as that found on another Russound source.

Then connect the AM and FM antennas. Make sure that the antennas are positioned away from metal objects or dense materials such as concrete to improve reception.

Finally the AC power cable may be connected to the ST1 then plugged into the electrical outlet.




FM antenna
AM loop antenna
Russound Smart Tuner ST1
RNET Link
In
Out
Source ID Switch
Firmware Update
Audio Out
L
R
75 OHMS FM COAX
AM LOOP ANTENNA
GND
ST1
RCA Audio Cable
RNET Link (CAT5)
Keypad Ports
Serial Interface
RS232
Ethernet
Routed IR Outputs
12VDC
Factory Reset
Firmware Update
Bluetooth
Controller ID Switch
CAUTION
Digital Audio Inputs
Coax 3
Coax 4
Coax 5
Optical
COM
12VDC 100mA Out
Page Trigger In
Home Theater
AC240V~
AC100V~
Russound MCA-66 Multizone Controller Amplifier
Audio Source Connections
Zone 1
Zone 2
Fixed
Variable
Line Out
Speaker Outputs
Made in Taiwan
MCA-66

OPERATION

After the ST1 is connected to the MCA-Series multiroom audio system which has been configured properly with either Web Config or SCS-C5 software to have the ST1 as a source, the ST1 can be selected as a source. For specific details, please refer to the user manual for the MCA-Series controller and the manual for the particular user interface chosen.

Dimensions:	8.5″W x 10.5″D x 1.75″H (21.6 x 26.7 x 4.45 cm)
Weight:	3.7 lbs. (1.7 kg)
Power Supply:	110-240 VAC @ 50-60Hz 35W (Auto-select)
Communication Ports:	(2) 2 RNET Links In/Out RJ45 / T568A - 18″ Max Cable Length
Frequency Range:	AM 530 - 1710 kHz, FM 87.7 - 107.9 MHz
Antenna Impedance:	AM 300 Ohm unbalanced
	FM 75 Ohm balanced
Sensitivity:	AM: @ 20dB S/N 55 dBu,
	FM: @ 30dB S/N 6 dB max 12 dBu
Image Rejection:	AM: 33dB, FM: 80dB
S/N Ratio:	AM: 33dB, FM: 60dB

Warranty

The Russound ST1 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, please request Return Authorization number via email at rarequest@russound.com. 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.

Russound®

ST1
Smart Tuner
Installation Manual

©2016 Russound. All rights reserved. All trademarks are the property of their respective owners.
Specifications are subject to change without notice.

Russound, Inc.
1 Forbes Road, Newmarket, NH 03857
tel 603.659.5170 • fax 603.659.5388
email: tech@russound.com www.russound.com

28-1362 11.29.16 Rev2