Russound®

# ST2S
## Smart Tuner

Installation Manual

SIRIUS®
SATELLITE RADIO

# IMPORTANT SAFEGUARDS

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 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.

If you have any questions please call Russound Inc. at 1-800-638-8055 or 603-659-5170.

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.
6. 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.

7. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. 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.
9. Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. 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.
11. Grounding or Polarization - Precaution should be taken so that the grounding or polarization means of an appliance is not defeated.
12. 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.
13. Cleaning - The appliance should be cleaned only as recommended by the manufacturer.
14. Non-use Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
15. 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.
16. Damage Requiring Service - The appliance should be serviced by qualified service personnel when:

    A. The power supply cord or the plug has been damaged; or

    B. Objects have fallen, liquid has been spilled into the appliance; or

    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.

17. 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.

Precautions:

1. Power – WARNING: BEFORE TURNING ON THE POWER FOR THE FIRST TIME, READ THE FOLLOWING SECTION CAREFULLY.
2. Do Not Touch The ST2 With Wet Hands – Do not handle the ST2 or power cord when your hands are wet or damp. If water or any other liquid enters the ST2 cabinet, unplug the unit from power immediately and take the ST2 to a qualified service person for inspection.
3. Location of ST2 – Place the ST2 in a well-ventilated location. Take special care to provide plenty of ventilation on all sides of the ST2 especially when it is placed in an audio rack. If ventilation is blocked, the ST2 may overheat and malfunction. Do not expose the ST2 to direct sun light or heating units as the ST2 internal components temperature may rise and shorten the life of the components. Avoid damp and dusty places.
4. Care – From time to time you should wipe off the front and side panels of 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.

This device complies with Part 15B 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.

Changes or modifications not expressly approved by Russound could void the user's authority to operate this equipment.

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# INTRODUCTION

## DESCRIPTION

Thank you for choosing the Russound ST2S Smart Tuner. Whether you are adding radio to an existing system, expanding a CA Series system or taking advantage of the CAV6.6 or CAM6.6's robust RNET® communication link, the ST2S Tuner is designed to meet your needs.

The ST2S Tuner gives you two radios in one. The AM/FM tuner provides broadcast of local AM/FM stations, and the SIRIUS tuner delivers all the diversity and choices available to SIRIUS radio subscribers. The two modules share one set of controls and display on the front of the unit, but each runs independently. This arrangement allows two different broadcasts at the same time in a multi-room audio distribution system.

SIRIUS SATELLITE RADIO

SIRIUS brings you satellite radio the way you want to hear it. SIRIUS satellite radio provides over 120 channels of unique programming, all with digital quality sound. Enjoy 65 channels of 100% commercial-free music, with over 50 channels of sports, news and entertainment.

The wide variety of SIRIUS programming choices offers something for everyone, but some adult content may not be suitable for children. The ST2S provides a parental lock-out feature to easily block access to a specific SIRIUS channel.

SIRIUS satellite radio is a subscription-based service, and listeners can subscribe by visiting SIRIUS on the web at *www.sirius.com* or by calling SIRIUS at 888-539-7474.

In addition to the traditional AM/FM broadcast tuner function and the SIRIUS satellite access, the ST2S Tuner can store up to 72 favorites, or *memory presets*. These are stored in groups of six called *banks*. There are six banks for each tuner. Each preset and each bank can be given a custom name of your choice.

The ST2S Tuner can be controlled from the front panel or by the dedicated ST2-KP tuner keypad. It can also be controlled by the ST2-RC IR remote aimed at the tuner's front panel IR receiver. The ST2-RC IR codes can be learned into any IR learning remote control for easy system integration. It can also be controlled by IR signals received through the IR connections on the rear panel from IR repeating system commonly used in distributed audio systems.

If the ST2S Tuner is part of an RNET-enabled system such as the CAV6.6-S2 system, the tuner can be controlled through an RNET keypad such as the UNO-S2.

The ST2 Tuner also has an RS-232 port to support fully bi-directional integration into whole-house control systems such as Crestron® and AMX®.

## FEATURES

- SIRIUS satellite radio
- AM/FM Tuner
- Compact single rack unit chassis
- Six banks of six memory presets each per tuner (72 total presets) for storing AM/FM station settings or SIRIUS channels
- Custom names for presets and banks
- Two Favorite presets per tuner
- Stereo or mono mode
- Local or distant mode
- Dedicated IR remote control
- Individual IR direct inputs for each tuner
- Front panel IR receiver
- Supports two ST2-KP optional tuner keypads
- RNET connections send tuner frequency and control information to UNO keypad display
- RS-232 control and programming. User settings can be backed up and restored.

# INTRODUCTION

## INSTALLATION APPLICATIONS

### RNET-enabled System

When the ST2S Tuner is used with an RNET-enabled device such as the CAV6.6 and is connected to it through the Link In or Link Out port, the tuner will be controlled by the CAV6.6 through the UNO-S2 keypad. Through RNET, tuner information such as Tuner 1 or 2, station frequency or channel, preset names and AM/FM band or SIRIUS is displayed on UNO-S2 keypads. An additional RNET device can be connected to an existing ST2 by using the Link Out of the first unit into the Link In of the second unit.

**Before using the ST2S tuner with an RNET controller, you must assign source numbers to Tuner 1 and 2 in the ST2 Setup Menu AND complete the controller's Source Setup procedure to identify the tuner as a "Peripheral" command type device.**

### IR-controlled System

*CA Series -*
The ST2S Tuner can be controlled by infrared commands received through the IR connections on the rear panel. There are two unique IR code sets for Tuner 1 and Tuner 2, which allow each to be controlled independently from either IR connection. These codes can be learned from the ST2-RC remote control into the CAS-RC or SRC2 remote control. The ST2S contains two individual tuners, which makes it act as two sources in the CA system. There are two source audio outputs and two IR connections - one for each tuner in the ST2S. You will need at least one IR link cable (Russound P/N 09-0508) for these connections. If you are using an IR-controlled system from another manufacturer, installation should be similar. The ST2S IR codes may be learned into many other manufacturers' remote controls that have learning capability for unified control over the A-V equipment.

**Note:** Optional ST2-KP keypads can be used to provide control for the ST2S Tuner and are designed to be used with IR-controlled systems.

### RS-232 Controlled System

The ST2S Tuner can be controlled using the RNET protocol provided via the RS-232 port on the rear panel. It can also be controlled by any RS-232-enabled control system (e.g., Crestron, AMX). Information on RS-232 operation is available to dealers in the Document Center on the Russound web site, *www.russound.com*.

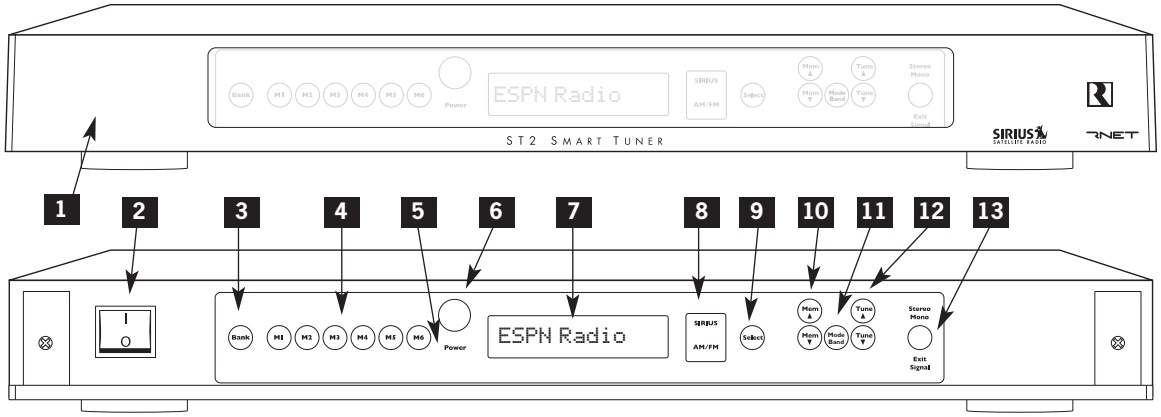
## BOX CONTENTS

The ST2S Tuner comes with the parts needed to setup and operate the component. These include:

- ST2S Tuner (SIRIUS module, AM/FM module)
- ST2-RC remote control
- 12VDC power supply
- AM loop antenna (1)
- FM antenna (1)
- SIRIUS antenna (1)
- RCA audio cable (2)
- Rack mount ears

Please call Russound at 800-638-8055 ext. 501 for assistance if parts are missing.

# COMPONENT GUIDE
## ST2S FRONT PANEL




**1** DROP-DOWN COVER - Hinged see-through cover protects the selection buttons on the tuner

**2** MAIN POWER SWITCH - Turns power on and off

**3** BANK SELECT BUTTON - Selects bank 1-6

**4** MEMORY SELECT BUTTONS - Sets and selects memory presets 1-6 for each bank

**5** POWER ON/OFF LED - Indicates power on or off

**6** IR RECEIVER - Receives IR signal from remote control

**7** LCD PANEL - 12-character backlit display shows station, channel, custom names, etc.

**8** SIRIUS and AM/FM - Backlit tuner selection indicator

**9** SELECT - Selects Tuner 1 (SIRIUS) or Tuner 2 (AM/FM), and accesses tuner setup menus

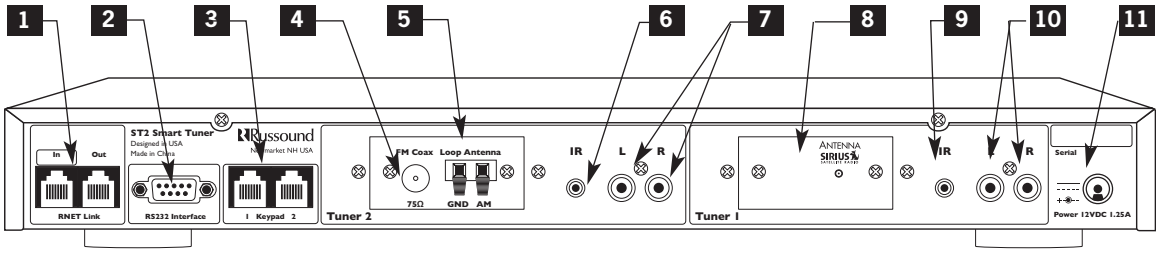
**10** MEM PRESET UP/DOWN - Selects memory presets starting with last preset, and toggles through menu features

**11** MODE/BAND - (AM/FM) Selects AM or FM band
(SIRIUS) Selects a SIRIUS Mode (Category Search, Now Playing, Display Preferences)
(ALL) Enters menu selections when programming

**12** TUNE UP/DOWN - (AM/FM) Manually selects radio stations
(SIRIUS) Manually selects channels (Channel Up/Channel Down)
(ALL) Toggles through menu settings

**13** STEREO MON/EXIT SIGNAL - (AM/FM) Selects stereo/mono mode for AM/FM, and Distant/Local reception
(SIRIUS) Press to Exit current SIRIUS Mode, hold for signal strength

# COMPONENT GUIDE
## ST2S REAR PANEL




TUNER 2 AM/FM

TUNER 1 SIRIUS

**1** RNET LINK IN/LINK OUT - Links to other Russound components that are RNET compatible, displays frequency and other information on the UNO keypads

**2** RS-232 INTERFACE - The RS-232 Interface allows the tuner to be controlled by PC or other devices that have an RS-232 Interface. The RS-232 Interface also allows for firmware updates and programming (DB9 Cable)

**3** KEYPAD PORTS - RJ-45 Keypad ports for ST2-KP tuner keypads in dedicated, non-RNET systems (Do not connect UNO keypads to these ports)

**4** FM COAX - FM Antenna threaded F-connection (75 ohms) for Tuner 2

**5** LOOP ANTENNA - AM antenna connection (300 ohms) for Tuner 2

**6** IR INPUT - IR control input (common IR control) for Tuner 2 or Tuner 1

**7** AUDIO OUTPUT - Line-level audio signal outputs (RCA Cable) for Tuner 2

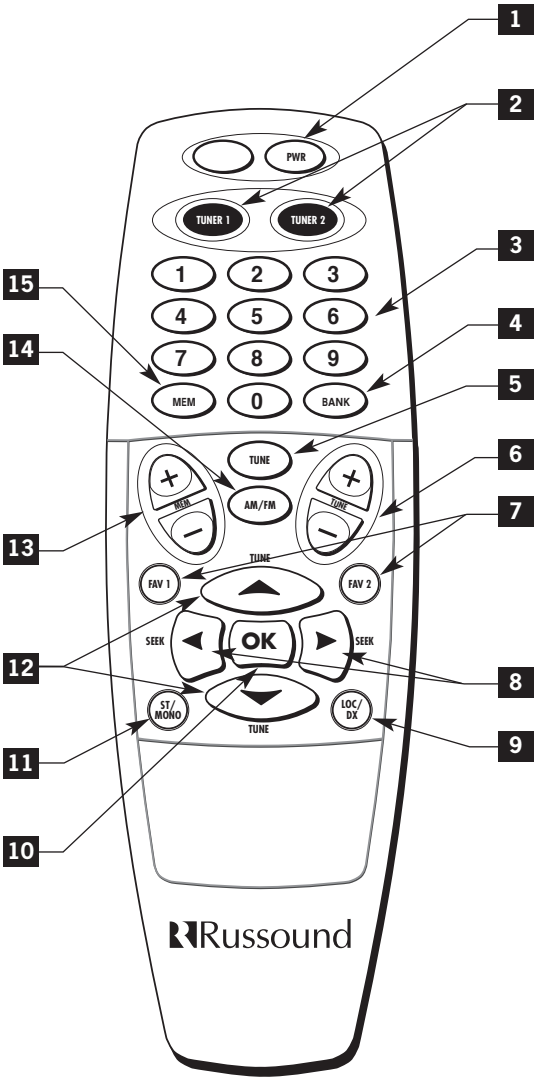
**8** SIRIUS ANTENNA - SIRIUS Antenna SMB connection (50 ohms) for Tuner 1

**9** IR INPUT - IR control input (common IR control) for Tuner 1 or Tuner 2

**10** AUDIO OUTPUT - Line-level audio signal outputs (RCA Cable) for Tuner 1

**11** POWER SUPPLY - 12VDC 1.25A max current draw external power supply connection

# COMPONENT GUIDE
## ST2-RC REMOTE CONTROL




**1** POWER - Puts the tuner in/out of standby mode

**2** TUNER CONTROL - Select TUNER 1 (SIRIUS) or TUNER 2 (AM/FM) and all subsequent button presses affect that tuner

**3** NUMERIC INPUT - Number buttons for direct selection of station, channel, bank, preset

**4** BANK SELECT - Used for direct bank selection (numeric input 1-6)

**5** TUNE SELECT - Used for direct station or channel selection (numeric input)

**6** TUNE UP/DOWN - Incrementally scrolls through station or channel numbers

**7** FAV 1/FAV 2 - Sets/Selects Favorite 1 or 2 preset selection on ST2S tuner

**8** SEEK UP/DOWN -
(AM/FM) Seeks the next tuned station up/down
(SIRIUS) Scrolls through banks 1-6

**9** LOCAL/DISTANCE -
(AM/FM) Optimizes station reception

**10** OK -
(AM/FM) Confirms direct entries
(SIRIUS) Operating mode toggle

**11** STEREO/MONO -
(AM/FM) Selects stereo or mono broadcast
(SIRIUS) Exit current SIRIUS operating mode

**12** TUNE UP/DOWN - Scrolls through station or channel numbers

**13** MEM UP/DOWN - Scrolls through preset stations within selected bank

**14** AM/FM - Selects AM or FM band

**15** MEM SELECT - Used for direct memory select (numeric input 1-6)

# ST2S SETUP AND CONNECTIONS
## BASIC CONNECTIONS

### Power

To power the tuner, connect the 12VDC external power supply by inserting the power supply jack into the power supply connection on the tuner's rear panel.

### Audio Output

Connect one end of a dual RCA audio cable to the Tuner 1 Audio Output connection. Keep proper channel identity. Attach the other end of the RCA cables to the source input of the audio control system. Repeat the same procedure for the Tuner 2 Audio Output.

### RNET Connection

To link the ST2S to an RNET-compatible device, use a CAT-5 passthrough patch cable with similar wiring terminations at each end. Connect one end of the cable to the RNET Link In of the ST2S tuner, and connect the other end of the patch cable to the RNET Link Out connection on the RNET-compatible device.

### IR Connections

The ST2S Tuner can be controlled by infrared commands received through the two IR connections on the rear panel. The ST2S Tuner component contains two tuners, which must be set up as two sources. There are two IR connections - one for each tuner in the ST2S. You will need two IR link cables (Russound P/N 09-0508) for these connections. There is a unique IR code set each for Tuner 1 and Tuner 2, which allow each to be controlled independently. These codes can be learned from the ST2-RC remote into learning-capable remotes and keypads.

If you are using an IR-controlled system from another manufacturer, installation should be similar. The ST2S IR codes may be learned into many other manufacturers' remote controls that have learning capability for unified control over the audio-video equipment.

### ST2-KP Keypad to ST2S Connection (Non-RNET System)

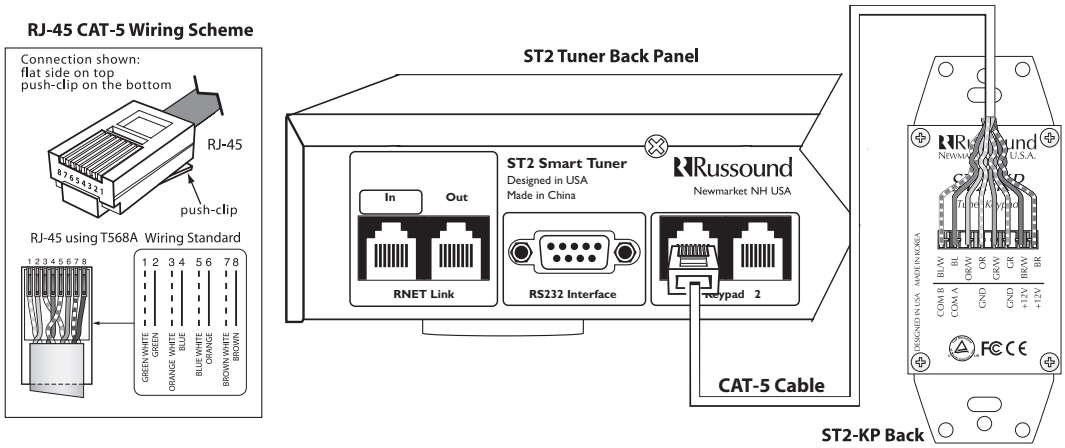
***Note:*** *ST2-KP keypads are designed for use with IR-controlled systems (non-RNET systems). When the ST2S Tuner is a component of an RNET system such as CAV6.6, the RNET-system keypads are used.*

The ST2-KP connects to the ST2S tuner with CAT-5 cable, using an RJ-45 (T568A) jack on the tuner connection end of the cable. Be sure to use the keypad ports for the ST2-KP and NOT the RNET link ports. The ST2S tuner supports up to two ST2-KP keypads. An SA-ZX3 Keypad Splitter can be used to add additional keypads.

### Rack Mount Installation

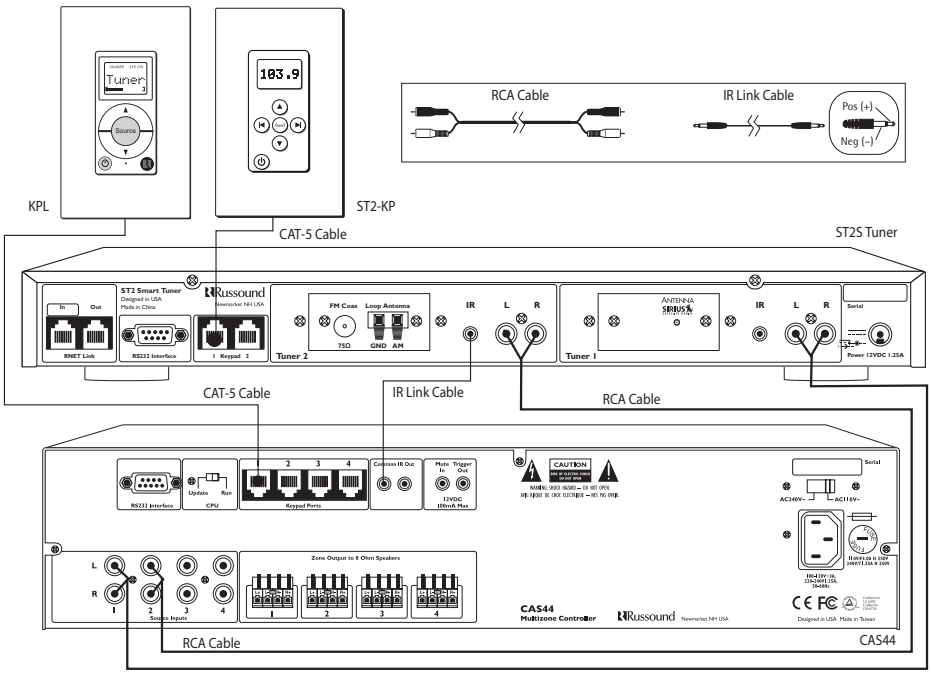
The ST2S can be mounted in a standard component rack using the rack ears provided. Line the rack ear's two rows of screw holes with the three screw holes on the side of the tuner. Use the screws provided to secure the rack ears onto the unit on both sides. The ST2S tuner should not be installed above a high heat-producing component such as a power amplifier.

# ST2S SETUP AND CONNECTIONS
## ST2-KP AND CA CONNECTIONS



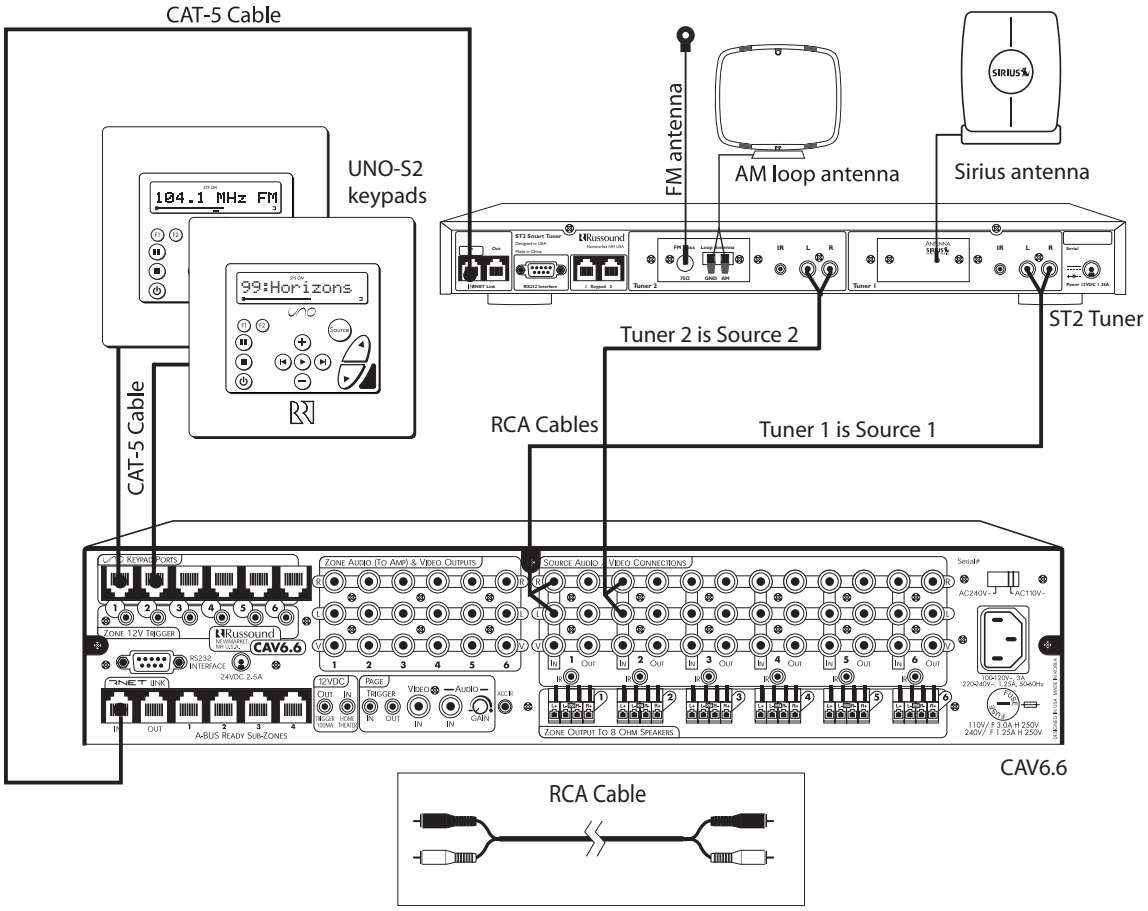

### ST2-KP Connections to ST2S Tuner (Non-RNET Systems)

The diagram depicts a standard ST2-KP keypad connection to the keypad port on the back of the ST2S. The keypad uses a 110 punchdown connection and an RJ-45 T568A connection to the tuner.




### Source Connections with CA Series Controller/Amplifier

The diagram depicts a typical setup using the ST2S Tuner with a CAS44 controller amplifier. Each tuner in the ST2 unit must be connected as a separate source for audio inputs.




**Source Connections with CAV6.6 Controller/Amplifier (RNET System)**

The diagram depicts a typical setup using the ST2S Tuner with a CAV6.6 amplifier. Each tuner in the ST2 unit must be connected as a separate source for audio inputs. UNO-S2 keypads are connected to the CAV6.6 keypad ports, NOT the ports on the ST2 Tuner.

*NOTE: When viewed from the BACK, Tuner 1 output is on the RIGHT side of the ST2S, and the Tuner 1 (Source 1) input is on the LEFT side of the source input section of the CAV6.6.*

# ST2S SETUP AND CONNECTIONS
## ANTENNA CONNECTIONS

### AM Antenna

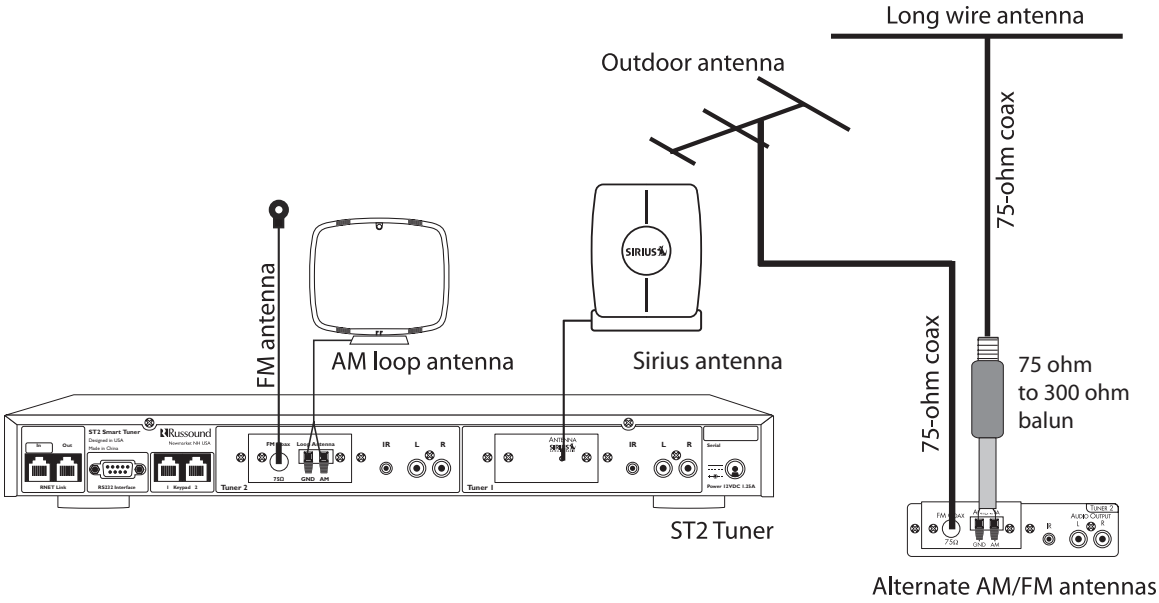
Connect the included loop antenna for AM reception to the back panel, attaching the GND (ground) and AM ends to the appropriate connections for Tuner 2.

It is recommended to use an external outdoor or attic-mounted long wire antenna for best performance for AM reception. Use a 75-ohm to 300-ohm balun at the AM connection on the tuner, and attach the 75-ohm coax cable to the balun.

### FM Antenna

Attach the included FM antenna to the Tuner 2 FM COAX connection on the back panel by pushing the F-type quick-connect termination of the antenna onto the FM connection.

It is recommended to use an external outdoor or attic-mounted long wire antenna for best performance for FM reception. Attach the desired length of 75-ohm coax cable directly to the FM connection on the tuner.

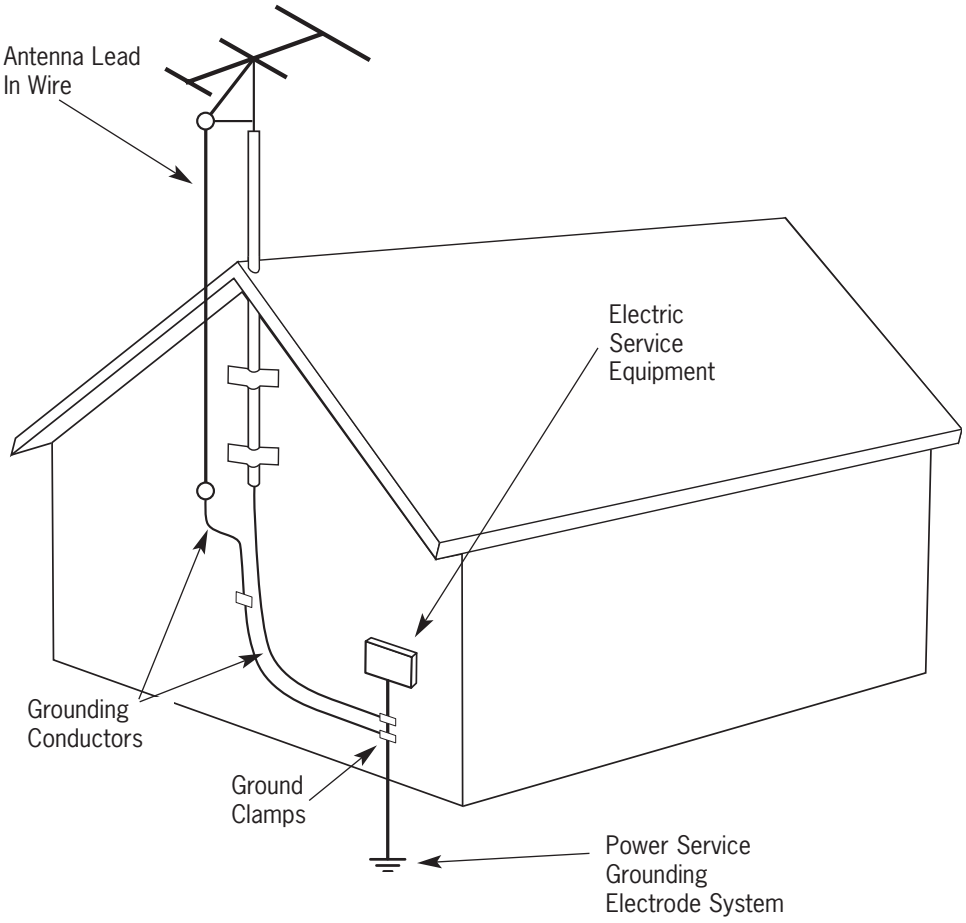



### Connecting an Indoor or Outdoor AM/FM Antenna

The diagram above depicts a typical setup using the ST2S Tuner with the included FM antenna and AM loop antenna. Also shown are two outdoor AM/FM antenna options (not included). (Not to scale)

### Grounding an Outdoor Antenna

If the 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.



# ST2S SETUP AND CONNECTIONS
## ANTENNA CONNECTIONS

### SIRIUS Antenna

For SIRIUS radio reception, connect the included SIRIUS antenna to the back panel of the SIRIUS module. The antenna comes with 20 feet of cable. If this length is not sufficient, there are aftermarket antenna cable extension kits available for custom lengths.

### SIRIUS Antenna Installation

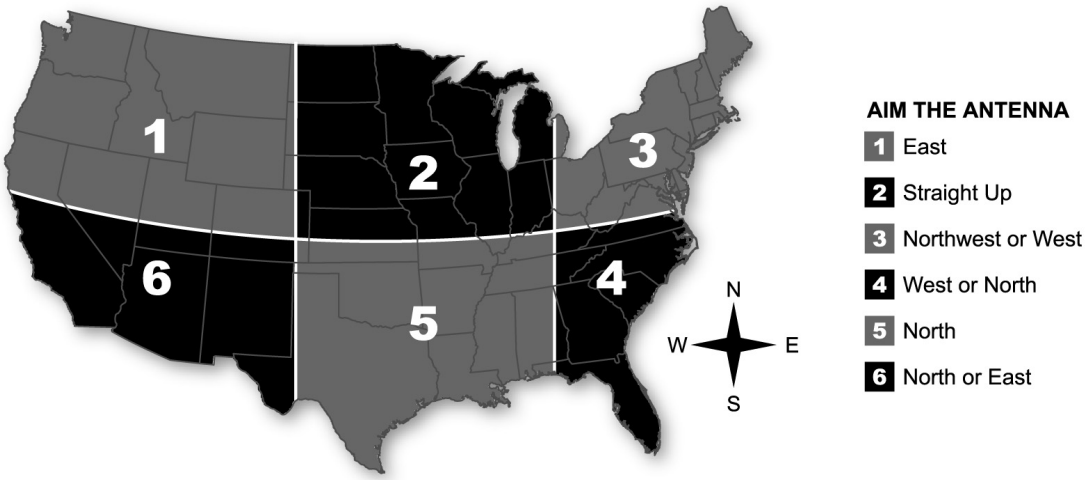
There are several methods available for antenna placement and installation. Regardless of method used, it is best to experiment with positioning to achieve the best signal possible before installation.

The SIRIUS antenna may be situated in or near a window. In metropolitan areas, ground-located repeaters are used to boost the signal, which can be received by antennas placed in or near windows.

### SIRIUS Antenna Positioning

SIRIUS has three satellites over the contiguous United States, plus terrestrial repeaters in major metropolitan areas.

To receive the strongest signal, the following map is provided as a guideline for antenna placement. It may be necessary to listen to SIRIUS for a few days, at different times of the day, to determine the optimal antenna placement for signal reception.




### SIRIUS Signal Strength Mode

To test the SIRIUS signal reception, turn the unit on. When the SIRIUS radio is powered for the first time, the SIRIUS service will start playing Preview Channel 184, a preview/promotional channel. Verify that Channel 184 is playing by pressing the Tune Up/Tune Down buttons. Enter Signal Strength Mode by pressing and holding the ST/MONO button on the ST2S front panel.

The display shows one of the following:

| | |
|---|---|
| EXCELLENT SIGNAL | Signal strength good |
| GOOD SIGNAL | Signal strength marginal |
| WEAK SIGNAL | Signal strength poor |
| NO SIGNAL | Loss of signal |

Adjust the antenna until EXCELLENT SIGNAL is displayed. Press EXIT SIGNAL to exit Signal Strength Mode.

## SIRIUS Radio Activation

SIRIUS Radio delivers over 120 channels of digital entertainment - 65 channels with 100% commercial-free music and 55 channels of news, sports and entertainment. SIRIUS radio is a subscription-based service with a monthly provider fee and an activation charge. Billing and activation are done directly through SIRIUS. SIRIUS radio broadcasts Channel 184 for preview but will not broadcast the full range of channels without activation.

***To activate the SIRIUS tuner:***

1 Turn on the power, select the SIRIUS Tuner, and press Mode Band to enter the SIRIUS Mode selection. Scroll through the Modes until `4.SIRIUS ID` appears. Release the button and the 12-digit SIRIUS ID number appears on the display (e.g., `123456789012`). Write the number down to have it available when contacting SIRIUS Radio for activation. The number is also shown on the back of the unit and on the product box.
2. Install the SIRIUS antenna and direct it skyward, using the location chart on page 14.
3. Tune the SIRIUS radio to channel 184, the Preview channel.
4. To subscribe, have a major credit card and your SIRIUS Radio ID number at hand and contact SIRIUS at www.sirius.com. You can also activate service by calling SIRIUS Radio at 1-888-539-7474. You will be guided through the activation process step by step.
5. A complete and up-to-date full channel listing is available on the SIRIUS Radio website, www.sirius.com.

## SIRIUS Radio Displays

In addition to Channel and Category information, the SIRIUS tuner will broadcast operating condition messages when the following conditions occur:

| Display | Condition |
|---|---|
| `ANTENNA ERROR` | Antenna not connected |
| `ACQUIRING SIGNAL` | Loss of signal, acquiring channel audio |
| `INVALID CHANNEL` | Channel number not valid |
| `UPDATING CHANNELS` | Channel map update |
| `CALL 888-539-SIRIUS TO SUBSCRIBE` | Unsubscribed channel |
| `SUBSCRIPTION UPDATED` | Subscription update |

# ST2S OPERATION
## SIRIUS RADIO MODES

### SIRIUS Radio Modes

There are six user "modes" for selecting music, viewing music information, retrieving ID and locking channels on the SIRIUS Tuner:

**Preset** (default or normal)
**Category Search**
**Now Playing**
**Display Preferences**
**SIRIUS ID**
**Channel Lock**

These modes are accessed through certain button and key presses from the tuner panel, remote controls and keypads. When choosing modes, if no choice is made after 20 seconds, the tuner will time out by showing EXIT and return to tuner display and Preset mode.

### For all SIRIUS Modes

The chart below outlines the button presses for various SIRIUS tuner functions outside of the SIRIUS modes.

| | ST2S | ST2-RC | ST2-KP | UNO-S2 | SRC2 |
|---|---|---|---|---|---|
| **All User Modes** | | | | | |
| Operating Mode Toggle | Mode Band | OK | Band | ▶ | OK ▶ Menu |
| Exit Current Mode | Exit Signal | ST/ MONO | Band | ■ | ■ |
| Signal Strength | Exit Signal Hold | | | ■ Hold | ■ Hold |

**Operating Mode Toggle**
This button press accesses the five non-default SIRIUS modes. The five modes will appear in order: Category Search, Now Playing, Display Preferences, SIRIUS ID, and Channel Lock.

**Exit Current Mode**
This button press returns the SIRIUS tuner to Preset (default) mode.

**Signal Strength**
This button press and hold accesses the Signal Strength mode. Depending on the signal, the following will be displayed:

EXCELLENT SIGNAL  Signal strength good
GOOD SIGNAL  Signal strength marginal
WEAK SIGNAL  Signal strength poor
NO SIGNAL  Loss of signal

Press the appropriate button again to exit Signal Strength Mode.

## Preset (default) Mode

This is the normal operating mode of the SIRIUS tuner. In this mode the SIRIUS tuner operates similarly to the AM/FM tuner for channel up and down, bank selection and memory presets.

**Next Preset**
This button press accesses the next saved preset (6 presets for each bank) in the chosen bank.

**Previous Preset**
This button press accesses the previous saved preset in the chosen bank

**Next Bank**
This button press accesses the next bank (total of 6 banks).

**Previous Bank**
This button press accesses the previous bank.

**Channel Up**
This button press accesses the next active channel up from the current channel.

**Channel Down**
This button press accesses the next active channel down from the current channel.

| | ST2S | ST2-RC | ST2-KP | UNO-S2 | SRC2 |
|---|---|---|---|---|---|
| **Preset Mode** | | | | | |
| Next Preset | Mem ▲ | + MEM | ▶\| | ▶\| | ▶▶ ▶ |
| Previous Preset | Mem ▼ | MEM − | \|◀ | \|◀ | ◀◀ ◀ |
| Next Bank | Bank | ▶ | ▶\| Hold | ▶\| Hold | ▶▶ Hold |
| Previous Bank | | ◀ | \|◀ Hold | \|◀ Hold | ◀◀ Hold |
| Channel Up | Tune ▲ | ▲ + TUNE | ▲ | + | ▲ + CH |
| Channel Down | Tune ▼ | ▼ TUNE − | ▼ | − | ▼ CH − |

## Category Search Mode (1.CAT SEARCH)

SIRIUS Radio is organized by Channel Category (e.g., Rock, Country, News). Within each category is a series of channels (e.g., The Vault, The Roadhouse, CNN). Channel selection in this mode is refined to scrolling only those channels in the selected category.

## Category Search Mode (1.CAT SEARCH) (continued)

**Next Category**
This button press accesses the next category from the current category.

**Previous Category**
This button press accesses the previous category from the current category.

**Category Channel Up**
This button press accesses the next channel up within the selected category.

**Category Channel Down**
This button press accesses the next channel down within the selected category.

| | ST2S | ST2-RC | ST2-KP | UNO-S2 | SRC2 |
|---|---|---|---|---|---|
| **Category Search Mode** | Mode Band | OK | Band | ▶ | Guide |
| Next Category | Mem ▲ | + MEM, ▶ | ▶\| | ▶\| | ▶▶, ▶ |
| Previous Category | Mem ▼ | MEM −, ◀ | \|◀ | \|◀ | ◀◀, ◀ |
| Category Channel Up | Tune ▲ | ▲, + TUNE | ▲ | + | ▲, + CH |
| Category Channel Down | Tune ▼ | ▼, TUNE − | ▼ | − | ▼, CH − |

## Now Playing Mode (2.NOW PLAYNG)

This mode displays information about the current SIRIUS selection. Appropriate button presses access the next or previous information item.

**NAME:**
Displays the artist's name, feature name or program name (news, talk, sports, etc.).

**TITLE:**
Displays the song title or program title.

**COMPOSER:**
Displays the composer's name or <NO DATA>.

**CATEGORY:**
Displays the current category.

| | ST2S | ST2-RC | ST2-KP | UNO-S2 | SRC2 |
|---|---|---|---|---|---|
| **Now Playing Mode** | Mode Band | OK | Band | ▶ | Info |
| Next Info Item | Mem ▲, Tune ▲ | + MEM, + TUNE, ▶, ▲ | ▶\|, ▲ | ▶\|, + | ▶▶, ▶ |
| Previous Info Item | Mem ▼, Tune ▼ | MEM −, TUNE −, ◀, ▼ | \|◀, ▼ | \|◀, − | ◀◀, ◀ |

## Display Preference Mode (3.DSPLY PREF)

This mode allows you to choose how SIRIUS channel information will be displayed on the keypad and tuner. Appropriate button presses access the next or previous preference item.
*Note: For any display configuration, the artist's name and song title will scroll before the display returns to the designated display format.*

### Channel Number (CH NUMBER:)

This selection displays the channel number only (e.g., CH070, CH103).

### Channel Name (CH NAME:)

This selection displays the channel name only (e.g., SIRIUS Pops, Heart & Soul).

### Channel Number and Name (#:CH NAME:)

This selection displays the channel number and name (e.g., 43:BackSpin, 121:ESPNews).

| | ST2S | ST2-RC | ST2-KP | UNO-S2 | SRC2 |
|---|---|---|---|---|---|
| **Display Preference Mode** | Mode Band | OK | Band | ▶ | OK ▶ |
| Next Display Preference | Mem ▲ Tune ▲ | + MEM + TUNE ▶ ▲ | ▶\| ▲ | ▶\| + | ▶ ▶ |
| Previous Display Preference | Mem ▼ Tune ▼ | MEM − TUNE − ◀ ▼ | \|◀ ▼ | \|◀ − | ◀ ◀ |

## SIRIUS ID Mode (4.SIRIUS ID)

This mode allows access to the SIRIUS Identification number for the SIRIUS module. This 12-digit number must be provided to SIRIUS during the activation procedure (Example: 123456789012)

| | ST2S | ST2-RC | ST2-KP | UNO-S2 | SRC2 |
|---|---|---|---|---|---|
| **SIRIUS ID Mode** | | | | | |
| SIRIUS ID Number | Mode Band | OK | Band | ▶ | OK ▶ Menu |
| Exit Current Mode | Exit Signal | ST/ MONO | Band | ■ | ■ |

## Channel Lock Mode (5.CHAN LOCK)

This mode allows you to lock/unlock a channel or channels to prevent audio access. This parental control is set/cleared with a four-digit code entered using the SRC2 or ST2-RC remote controls. *Channel to be locked/unlocked must be selected before beginning this procedure.*

| | ST2S | ST2-RC | ST2-KP | UNO-S2 | SRC2 |
|---|---|---|---|---|---|
| **Channel Lock Mode** | Mode Band | OK | Band | ▶ | OK ▶ Menu |
| Next Info Item | Mem ▲ Tune ▲ | + MEM + TUNE ▶ ▲ | ▶\| ▲ | ▶\| + | ▶▶ ▶ |
| Previous Info Item | Mem ▼ Tune ▼ | − MEM − TUNE ◀ ▼ | \|◀ ▼ | \|◀ − | ◀◀ ◀ |

**Lock Channel (LOCK CHAN:)**
This selection appears when an *unlocked* channel is selected.

To LOCK a channel:

1. Select LOCK. Select ENTER CODE. Using the SRC2 or ST2-RC remote control, enter the current four-digit code (default is 0000).

2. Exit Channel Lock mode. The channel is now locked and will not appear when scrolling through channels. If the channel is selected numerically from the remote control, the user must enter the code to unlock access.

**Unlock Channel (UNLOCK CHAN:)**
This selection appears when a *locked* channel is selected

To UNLOCK a channel:

1. Use the remote control to access the channel. Enter the current four-digit code (default is 0000). This temporarily unlocks the channel; when the channel is exited, it will lock again.

2. To fully unlock the channel, use the remote control to access the channel. from the Channel Lock menu, select UNLOCK. Enter the current four-digit code (default is 0000). UNLOCKED is displayed.

**Change Code (CHANGE CODE:)**
This selection allows you to enter a new four-digit code for locking/unlocking channels.

To change a code:

1. Select CHANGE CODE from Channel Lock menu. Press Mode Band on the ST2S, OK on the ST2-RC or OK on the SRC2. ENTER CODE appears.

2. Using the remote control, enter the new four-digit code. RE-ENTER appears. Enter the new code again. SAVED appears and the ST2S returns to normal mode.

## *Front Panel Operation*

### Turning the unit on

To turn the unit on, push the On/Off button up on the front panel. Pushing the On/Off button down turns the tuner off.

### Selecting the desired tuner

From the front panel, use Select to toggle between SIRIUS and AM/FM. A backlight shows behind the selected label SIRIUS (green) or AM/FM (amber) to indicate the active tuner. In addition, the LCD panel is also backlit green for Tuner 1 and amber for Tuner 2. Each time a tuner is selected the display will refresh with the current station or preset, and all subsequent memory preset entries will be associated with that selected tuner.

### Selecting the desired band (AM/FM only)

Push Mode Band to switch between AM and FM reception.

### Selecting a mode (SIRIUS)

Push Mode Band to select an SIRIUS operating mode.

### Exiting a mode (SIRIUS)

Push Exit Signal to exit the SIRIUS mode selection menu.

### Signal Strength mode (SIRIUS)

Press and hold Exit Signal and release. The display shows the signal strength rating. To exit press Exit Signal.

### Selecting the desired frequency or channel

Press and release Tune ▲ and Tune ▼ for manual tuning.

### Selecting Stereo or Mono Output (AM/FM only)

Press and release Stereo Mono to toggle between stereo and mono mode. STEREO or MONO appears briefly on the screen when selecting mode.

### Selecting Distant or Local Reception (AM/FM only)

Press and hold Stereo Mono to toggle between distant and local mode. DISTANT or LOCAL appears briefly on the screen when selecting mode. Normal operation is in Distant mode. In cities, antennas can pick up multipath signals when they bounce off buildings and get doubled. The Local mode limits the noise associated with these reflected signals.

### Bank/Memory Presets

Each tuner has six banks of preset memory settings, and each bank holds six presets for a total of 36 possible presets for each tuner (72 total presets). Presets are associated with the tuner that is selected at the time the preset is saved.

### Memory Preset programming

From the front panel, perform these steps:

**1.** Select a tuner using Select.

**2.** Use Bank to choose from one of six banks (1-6).2

**3.** If AM/FM, select the desired band using Mode Band.

**4.** Tune to the desired station or channel.

**5.** Push the desired memory preset (M1 through M6) button for more than 2 seconds. When the memory preset is saved, the appropriate preset number (M1 through M6) and SAVED appears on the LCD. The selected station setting reappears and the sound resumes after the button is released.

### Recalling a Memory Preset

To recall a memory preset, use Bank to select the desired bank, then press the desired preset button (M1 to M6). In addition to direct selection, the memory presets can be accessed by using Mem ▲ and Mem ▼ to scroll through all presets for the bank selected.

### Backup and Restore

Once all of the tuner settings are completed, it may be advisable to create a backup of the programmed settings for future use. The backup will then be available in case tuner settings need to be restored. The "RNET Backup Utility" is available through the Document Center at www.russound.com. Also required are a DB9 male-to-female cable and laptop or desktop PC.

# ST2S OPERATION
## ST2-RC REMOTE CONTROL

### *ST2-RC Remote Control Operation*

The ST2-RC remote control is the only means of remote operation of the ST2S in a non–RNET system. The ST2S front panel displays information for the tuner that is receiving commands from the ST2-RC. However, the ST2-RC commands do not change which tuner is playing; that is done through the system's source selection.

**Turning the unit on/off**

To switch the ST2 tuner in or out of standby mode, push PWR or any other button except TUNER 1 or TUNER 2.

**Selecting the desired tuner**

To control a tuner, push TUNER 1 or TUNER 2. When pressed, these buttons will be backlit green for Tuner 1 (SIRIUS) and amber for Tuner 2 (AM/FM). Each time a tuner is selected, the next button press will refresh the display with the current station or preset for that tuner, *and all subsequent button presses and memory preset entries will be associated with that selected tuner.*

**Selecting the desired band (AM/FM only)**

Push AM/FM to switch between AM and FM reception.

**Selecting the desired frequency or channel**

Use + and − for manual tuning. To move quickly through the stations or channels, press and hold either of the Tune buttons for more than 1.5 seconds.

To directly select a station or channel, press TUNE, and enter the two- or three-digit SIRIUS channel number, or the three- or four-digit station frequency (1071 for 107.1, etc.). European regions use five-digit station frequencies.

**Selecting a mode (SIRIUS)**

Push OK to select an SIRIUS operating mode.

**Exiting a mode (SIRIUS)**

Push ST/MONO to exit the SIRIUS operating mode selection menu.

**Frequency Seek (AM/FM only)**

The SEEK function is performed by pressing and releasing ◄ to seek lower frequencies or ► for higher frequencies. SEEK tuning begins at the current frequency, seeks upward and stops at the next tuned station. Pushing ► continues the SEEK function. Once the highest frequency is reached, the tuner continues in SEEK mode at the lowest frequency.

**Selecting Stereo or Mono Output (AM/FM only)**

Press ST/MONO to toggle between stereo and mono mode. STEREO or MONO appears briefly on the screen when selecting mode. Normal operation is in stereo mode. On a preset, the stereo/mono setting is saved for that preset.

**Selecting Distant or Local Reception (AM/FM only)**

Press LOC/DX to toggle between Distant and Local mode. DISTANT or LOCAL appears briefly on the screen when selecting mode. Normal operation is in Distant mode.

**Recalling a Memory Preset**

To recall a memory preset, select the desired tuner, press BANK and enter the desired bank number (1-6), then press MEM and enter the desired preset number (1 to 6). The memory presets can also be accessed by using + and − to scroll through all presets for the selected bank.

**Saving Favorites**

The remote control stores two "favorites" (similar to memory presets) per tuner. These are set simply by selecting either Tuner 1 or Tuner 2, setting the desired frequency and pressing and holding FAV 1 or FAV 2 until "FAV1 (2) saved" appears on the tuner. Stored Favorites are then recalled by pressing either FAV 1 or FAV 2.

## *ST2-KP Keypad Operation*

### 1 Turning the keypad on/off

To activate the ST2-KP, press ⏻. Press ⏻ to power down the keypad display. The keypad remains powered until the ST2S Tuner is turned off.

### 1 Selecting the desired tuner

To select a different tuner, press and hold ⏻. (If the keypad has been hardware jumper-selected to Tuner 1 or Tuner 2, it will not switch between the two tuners.) The backlight color of the display will be green for Tuner 1 (SIRIUS) and amber for Tuner 2 (AM/FM). Each time a tuner is selected the display will refresh with the current station or preset for that tuner, and *all subsequent button presses and memory preset entries will be associated with that selected tuner.*

### 2 Selecting the desired band (AM/FM)

Push BAND to switch between AM or FM band.

### 2 Selecting a mode (SIRIUS)

Push BAND to select a SIRIUS operating mode.

### 2 Exiting a mode (SIRIUS)

Press and release BAND until EXIT is displayed to exit the SIRIUS operating mode menu.

### 3 Selecting the desired frequency or channel

Use ▲ and ▼ for manual tuning. To move quickly through the channels, press and hold either ▲ or ▼ for more than 1.5 seconds. European frequencies show in .05 MHz increments.

### 4 Selecting a Bank

To select a bank, select the desired tuner, then press and hold ⏮ or ⏭ to select the desired bank. The bank name will show on the display.

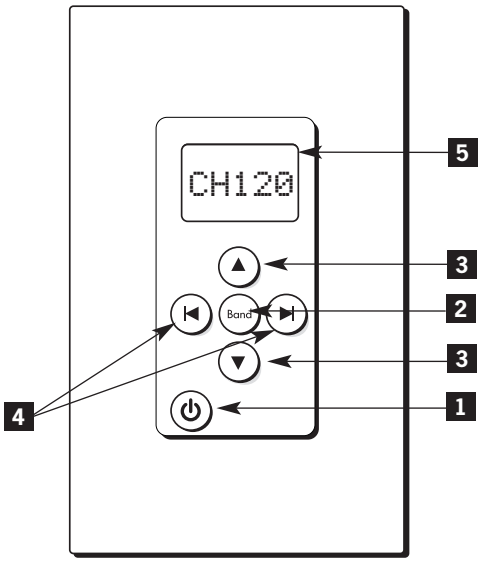
### 4 Recalling a Memory Preset

To recall a memory preset, press and release ⏮ or ⏭ to scroll through the presets for the selected bank. (Memory presets must be stored for ST2-KP recall)

### 5 ST2-KP Keypad Display

The 5-character backlit display shows frequency and band, plus SIRIUS channel and mode information. Messages scroll twice, then display the first 5 characters.

**ST2-KP Keypad-Front Panel**



# ST2S OPERATION
## UNO-S2 KEYPAD CONTROL WITH RNET CONTROLLER

### *UNO-S2 Keypad Operation*

***NOTE:*** *To control the ST2 Tuner through the UNO-S2 keypad, the tuner must be configured as a source using the controller's programming steps.*

**Turning the unit on**

The tuner is power managed by the CAV6.6 or other RNET-enabled controller. If the tuner is in standby mode, any button press of the UNO-S2 keypad will bring the tuner out of standby mode.

**Selecting the desired tuner**

On the UNO-S2 keypad, press Source to select either Tuner 1 (SIRIUS) or Tuner 2 (AM/FM) by choosing the source name/number associated with Tuner 1 or Tuner 2.

**Selecting the desired band (AM/FM only)**

Push ▶ to toggle between AM band and FM band reception.

**Selecting a Mode (SIRIUS)**

Push ▶ to toggle between SIRIUS modes.

**Exiting a Mode (SIRIUS)**

Press and release ■, EXIT is displayed to exit SIRIUS mode selection menu.

**Selecting the desired frequency or channel**

Use ⊕ and ⊖ for manual tuning or channel selection. The frequency or channel will appear on the keypad and the active tuner. To move quickly through the channels, press and hold either ⊕ or ⊖ for more than 1.5 seconds.

**Frequency Seek (AM/FM only)**

A press on ■ will seek the next higher tuneable station. If a tuneable station is not found, end the SEEK function by pressing ■ again.

**Frequency Scan (AM/FM only)**

To scan, press and hold then release ■. The tuner scans through tuned stations with a 5-second preview before moving to the next station. To end scanning, press ■ again.

**Signal Strength Mode (SIRIUS)**

To check SIRIUS signal strength, press and hold ■ then release. The display shows the signal strength rating. To exit, press ■ again.

**Selecting a Bank**

To select a bank, press and hold ▶| for bank up or |◀ for bank down. The bank's name will be temporarily displayed on the UNO-S2.

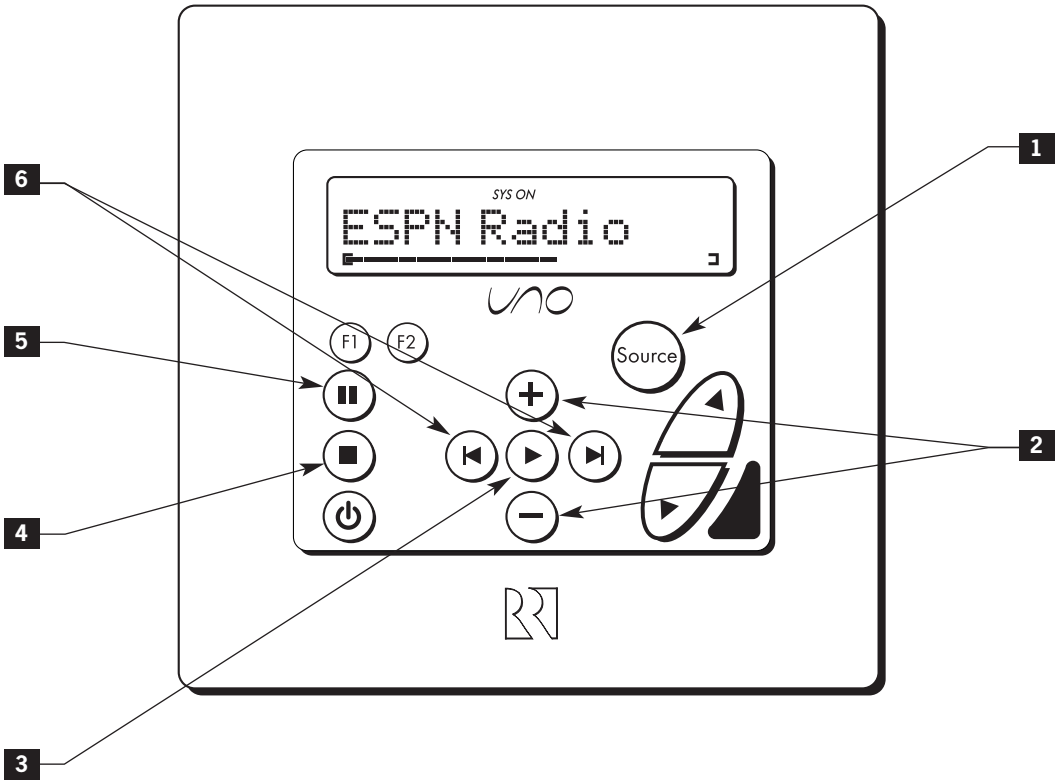
**Recalling a Memory Preset**

Press |◀ and ▶| to scroll through the memory presets for the selected bank. This procedure will step through all of the presets in the current bank, then loop back to start at the first one. Only configured presets will be displayed.

**Mute**

Press ❚❚ to mute/unmute the tuner audio output.

# ST2S OPERATION
## UNO-S2 KEYPAD CONTROL WITH RNET CONTROLLER




**1** TUNER SELECTION - Select source name/number associated with TUNER 1 (SIRIUS) or TUNER 2 (AM/FM)

**2** TUNE UP/DOWN - Used for manual station or channel selection

**3** SELECT -
(AM/FM) Selects AM or FM band
(SIRIUS) Operating mode toggle

**4** SEEK - (press)
(AM/FM) Seeks next higher tuned station
(SIRIUS) Exit current SIRIUS mode

**4** SCAN - (press and hold)
(AM/FM) Scans through tuned stations with 5-second preview before next station
(SIRIUS) Signal Strength mode toggle

**5** MUTE - Mutes/unmutes tuner audio output

**6** BANK SELECT - Used for bank selection (press and hold)

**6** MEM UP/DOWN - Scrolls through memory preset stations (press)

***NOTE:*** *UNO-S2 keypads are connected to the controller to control the ST2S through RNET. UNO-S2 keypads do not connect directly to the ST2 Tuner.*

# ST2S OPERATION
## SRC2 REMOTE CONTROL WITH RNET CONTROLLER

### *SRC2 Remote Control Operation*

**Turning the unit on**

The tuner is power managed by the CAV6.6 or other RNET-enabled controller. If the tuner is in standby mode, any button press of the SRC2 will bring the tuner out of standby mode when used with the UNO keypad.

**Selecting the desired tuner**

To select a tuner, push Input and choose the source name/number associated with Tuner 1 (SIRIUS) or Tuner 2 (AM/FM), or use the numeric source inputs at the bottom of the SRC2.

**Selecting the desired band (AM/FM only)**

Push to toggle between AM/FM reception.

**Selecting a Mode (SIRIUS)**

Push OK , Menu or to toggle between SIRIUS operating modes.

**Exiting a Mode (SIRIUS)**

Press to exit SIRIUS operating mode menu.

**Signal Strength Mode (SIRIUS)**

Press and hold and release. The display shows the signal strength rating. To exit press .

**Selecting the desired frequency or channel**

Use the Channel + CH and CH − or ▲ and ▼ for manual tuning. To move quickly through the channels, press and hold the button for more than 1.5 seconds. To directly select a station or channel, enter the three- or four-digit channel or frequency

**Frequency Seek (AM/FM only)**

The SEEK function is performed by pressing and releasing the Select ◀ or ▶ or . To seek higher frequency station press ▶ . Press ◀ for lower frequencies. Tuning begins at the current frequency, seeks upward (or downward) and stops at the next tuned station. Pushing ▶ or again continues the SEEK function. Once the highest frequency is reached, the tuner continues SEEK mode at the lowest frequency.

**Frequency Scan (AM/FM only)**

To scan, press and hold then release . The tuner scans through tuned stations with a 5-second preview before moving to the next station. To end scanning, press again.

**Selecting a Bank**

To select a bank, press and hold for bank up or for bank down.

**Recalling a Memory Preset**

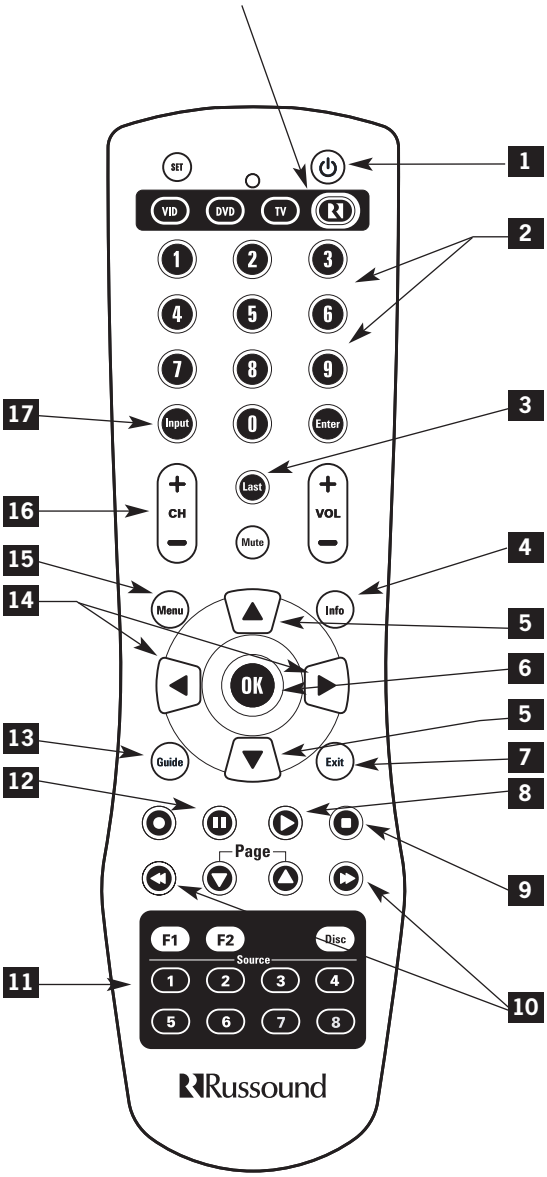
Press and to scroll through a loop of all the memory presets for the currently selected bank. Only configured presets will be displayed.

**Mute**

Press the button to mute/unmute the tuner audio output.

# ST2S OPERATION
## SRC2 REMOTE CONTROL WITH RNET CONTROLLER

**RUSSOUND SELECTION - "R" must be the selected source for control of the controller and any connected components. Select "R" before sending SRC2 remote commands.**




**1** POWER - Powers off zone

**2** NUMERIC INPUT - (press) Number buttons for direct input of frequency or channel

**2** MEMORY PRESETS - (press and hold) Number buttons (1-6) for saving memory presets

**3** LAST - Recalls last SIRIUS channel selected

**4** INFO - SIRIUS Now Playing mode toggle

**5** TUNE UP/DOWN - Incrementally scrolls through channels or tuned stations

**6** OK - Confirms numeric selection. SIRIUS Operating mode toggle

**7** EXIT - Exit SIRIUS operating mode

**8** PLAY - Selects AM or FM band. SIRIUS Operating mode toggle

**9** SCAN - (press and hold) Scans through tuned AM/FM stations with 5-second preview before next station. (press) Exit SIRIUS operating mode

**10** BANK UP/DOWN - (press and hold) Scrolls through banks

**10** MEM UP/DOWN - (press) Scrolls through memory presets for selected bank

**11** TUNER SELECTION - Select SIRIUS or AM/FM Tuner by its associated source name/number

**12** PAUSE - Mutes/unmutes tuner audio output

**13** GUIDE - SIRIUS Category Search mode toggle

**14** SEEK UP/DOWN - Seeks next tuned AM/FM station up or down. SIRIUS - Next/previous preset, category, info item, display preference

**15** MENU - SIRIUS Operating mode toggle

**16** TUNE UP/DOWN - Incrementally scrolls through channels or tuned stations

**17** TUNER SELECTION - Select SIRIUS or AM/FM Tuner by its associated source name/number (scrolling through sources until reached)

# ST2S TUNER PROGRAMMING
## ST2 TUNER SETUP MENU

**ST2S Tuner Setup Menus**

***Note:*** *The Setup Menu procedures must be performed from the ST2S Tuner front panel.*

The ST2S Tuner Setup Menus provide setup and naming procedures for the ST2S main chassis, the SIRIUS tuner module and the AM/FM tuner module. These procedures include source number assignments, assigning a custom name to a memory preset or a bank, choosing a region for AM/FM operation (US or Euro), factory initialization and system information.

If the ST2S is used with a **non-RNET** system, the ST2S can be connected and operated without any setup programming. Follow the setup menus if custom names are desired, or for system info.

If the ST2S is used with an **RNET system** such as **CAV6.6**, the following minimum setup must be performed for the ST2S to be properly controlled by the CAV6.6.

**1.** ST2 Chassis Setup Menu - Assign source numbers to Tuner 1 and Tuner 2.
**2.** RNET Controller Source Setup Menu - Configure the source numbers assigned in step 1 for Tuners 1 and 2, and assign command type PERIPHERAL.

***NOTE:*** *Once the programming procedures are completed, cycle power first to the Tuner and then to the RNET controller (must be powered on last) to establish a connection.*

### *ST2 Chassis Setup Menu*
### Source Number (Chassis)

The Source Number procedure permits Tuner 1 (SIRIUS) and Tuner 2 (AM/FM) to be assigned the proper source numbers to be used in an RNET system.

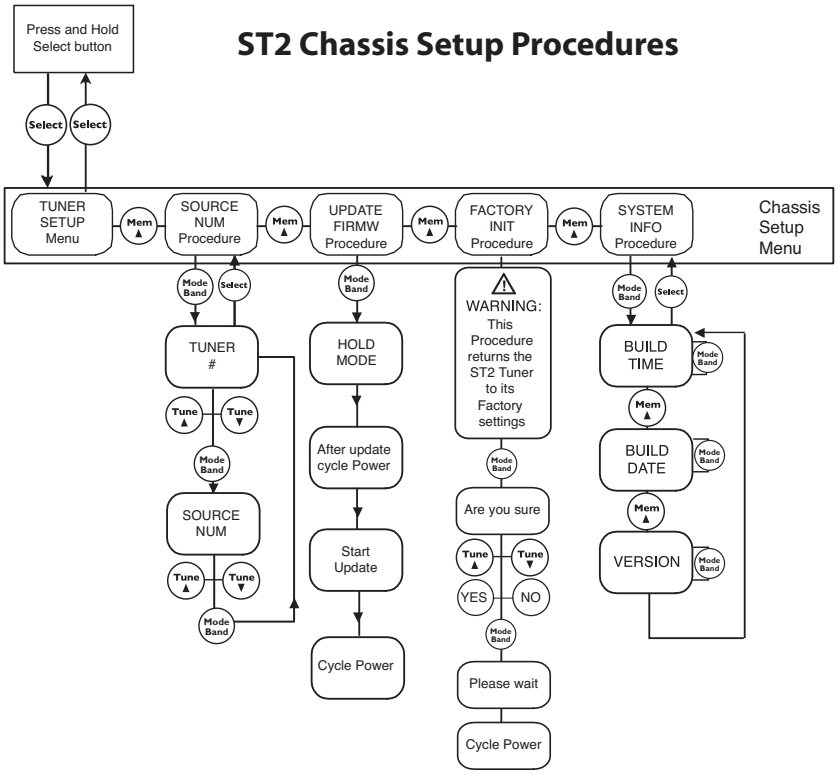
***Note:*** *The source number must be assigned as PERIPHERAL in the RNET controllers.*

***Note:*** *Each of the ST2S modules can be configured as source number "unassigned" if the module is used in another system (e.g., home theater) or will not be used as a source in the RNET system.*

**1.** Enter the Setup Menu by pressing and holding the SELECT button.
**2.** TUNER SETUP appears. Press MEM Up/Down until SOURCE NUM appears on the tuner.
**3.** Press MODE/BAND. TUNER # appears.
**4.** Press the Tune Up/Down buttons to select the Tuner # (Tuner 1 is SIRIUS, Tuner 2 is AM/FM).
**5.** Press MODE/BAND. SOURCE NUM appears.
**6.** Press the Tune Up/Down buttons to scroll through the source numbers 1-6.
**7.** Press MODE/BAND to select the source number.
**8.** Repeat the process for the next tuner.
**9.** Press SELECT to exit the Source Number menu.

### Update Firmware (Chassis)

The Update Firmware procedure allows the ST2 tuner's OS firmware to be updated. The procedure is performed using a DB9 serial cable with one end connected to the RS-232 port on the tuner and the other connected to a PC or laptop. If an OS firmware update is available, it can be obtained through the Document Center at www.russound.com. SIRIUS tuner module firmware update must be performed by an authorized Russound service facility.




**1.** Enter the Setup Menu by pressing and holding the SELECT button.
**2.** TUNER SETUP appears. Press MEM Up/Down until UPDATE FIRMW appears on the tuner.
**3.** Press MODE/BAND to enter the UPDATE FIRMW menu.
**4.** "Hold BAND" appears on the tuner.
**5.** While pressing and holding MODE/BAND, "After update cycle power" appears on the tuner display.
**6.** When "Start Update" appears on the tuner display, start the update program. "Finished" will then appear in firmware's update window on the PC.
**7.** Cycle power to the tuner.

## Factory Initialization (Chassis)

The Factory Initialization procedure allows the erasure of all programmed settings and returns them to the factory default settings.

**1.** Enter the Setup Menu by pressing and holding the SELECT button.
**2.** TUNER SETUP appears. Press MEM Up/Down until FACTORY INIT appears on the tuner.
**3.** Press MODE/BAND to enter the FACTORY INIT menu.
**4.** "Are you sure" appears on the tuner. Using the Tune Up/Down buttons, view the "Yes" and "No" selections.
**5.** Press MODE/BAND to select. A "No" selection returns to the top of the Factory Init menu. A "Yes" begins the initialization.
**6.** "Please wait" appears on the tuner during the process and "Cycle Power" appears when complete.
**7.** Cycle power on the ST2S tuner.

# ST2S TUNER PROGRAMMING
## ST2 TUNER SETUP MENU

### System Info (Chassis)
The System Info menu shows the ST2 Tuner's manufacturing build properties.

**1.** Enter the Setup Menu by pressing and holding the SELECT button.
**2.** TUNER SETUP appears. Press MEM Up/Down until SYSTEM INFO appears on the tuner.
**3.** Press MODE/BAND.
**4.** Press MODE/BAND at "Build Time" to view.
**5.** Press MEM Up/Down to advance.
**6.** Press MODE/BAND at "Build Date" to view.
**7.** Press MEM Up/Down to advance.
**8.** Press MODE/BAND at "Version" to view.
**9.** Press SELECT to exit the System Info menu.

**(END OF ST2 CHASSIS SETUP)**

### *Tuner Setup Menu for SIRIUS*
***It is important to select the desired tuner (Tuner 1 for SIRIUS) using the SELECT button BEFORE accessing the Tuner Setup Menus.***

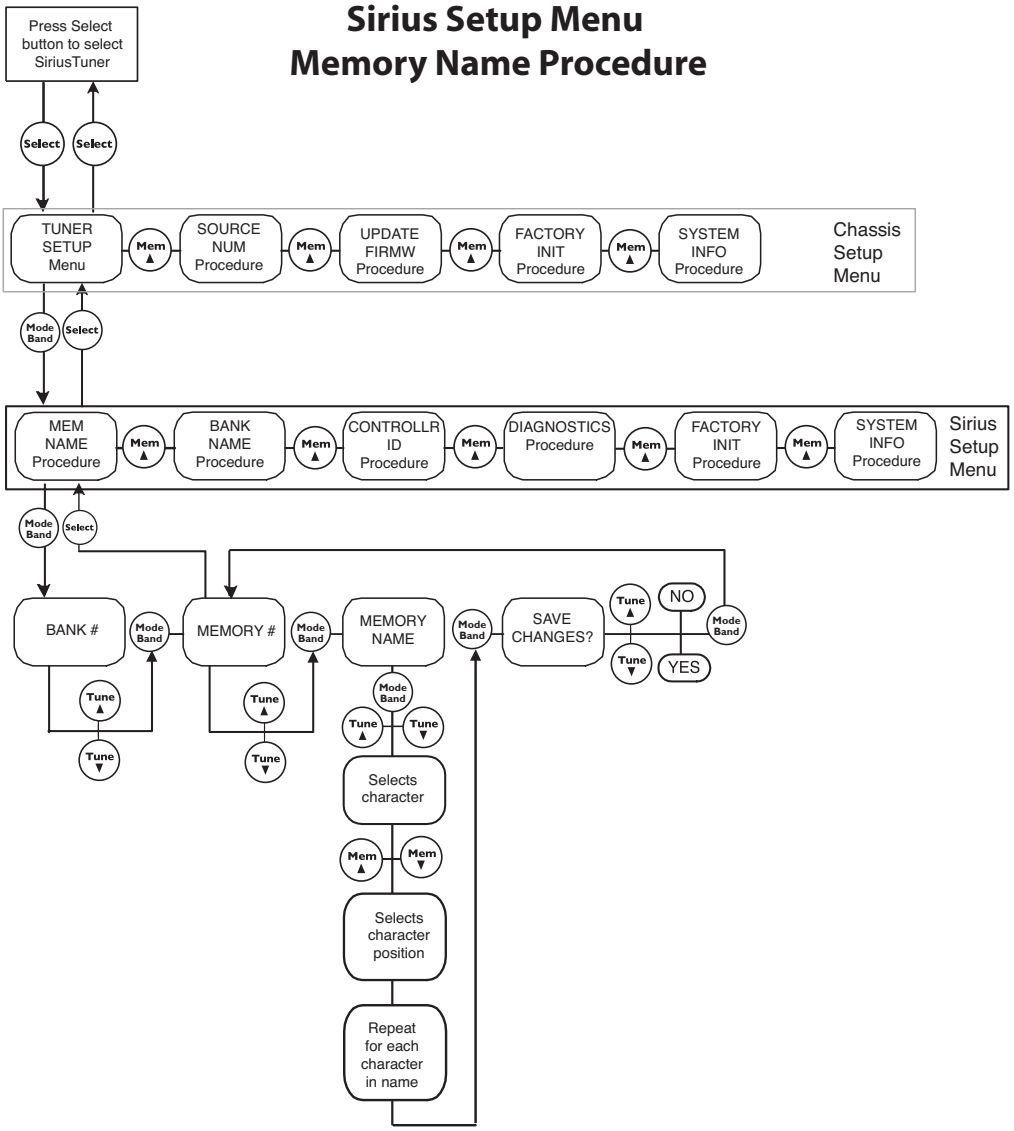
### Memory Name (SIRIUS)
A memory preset *must* be created and saved before it can be named (see page 21). Once it is saved, the preset's Tuner #, Bank # and Memory # must be entered in the following procedure.

**1.** Enter the Setup Menu by pressing and holding the SELECT button.
**2.** TUNER SETUP appears. Press MODE again.
**3.** MEMORY NAME appears on the tuner.
**4.** Press MODE/BAND.
**5.** Bank # appears.
**6.** Press the Tune Up/Down buttons to select the Bank #.
**7.** Press MODE/BAND to advance. Memory # appears.
**8.** Press the Tune Up/Down buttons to select a Memory #.
**9.** Press MODE/BAND to advance. MEMORY NAME appears again.
**10.** Press MODE/BAND to access the Memory Name entry screen.
**11.** Press Tune Up/Down to select a character and MEM Up/Down to change a character position. Up to 12 characters can be entered one by one. A blinking cursor indicates the placement of the character being entered.
**12.** Press MODE/BAND when memory name is entered.
**13.** SAVE CHANGES will appear.
**14.** Press Tune Up/Down to select Yes or No.
**15.** Press MODE/BAND to save memory name. The Memory Name menu returns to the Memory # prompt to name other presets, or press SELECT to return to the Memory Name menu start.

### Bank Name (SIRIUS)
A custom name can be assigned to each of the six banks of Tuner 1 (SIRIUS).

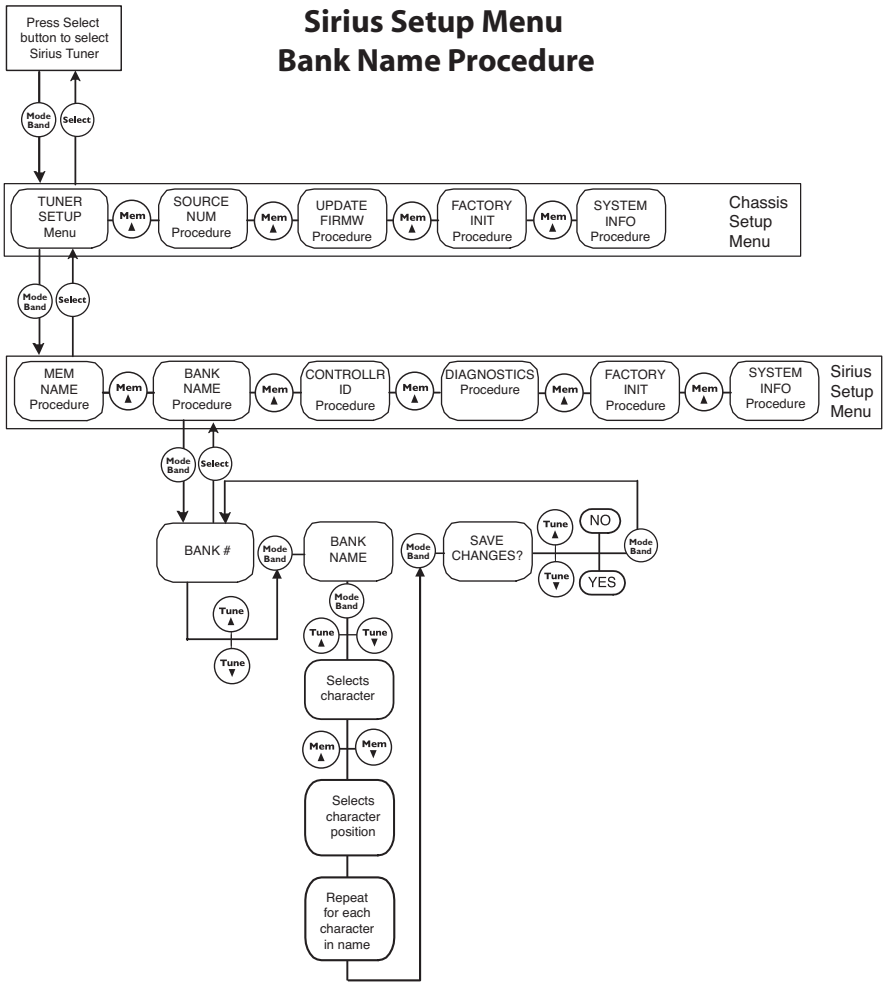
**1.** Enter the Setup Menu by pressing and holding the SELECT button.
**2.** TUNER SETUP appears. Press MODE.
**3.** MEMORY NAME appears. Press MEM Up/Down until BANK NAME appears on the tuner.
**4.** Press MODE/BAND.
**5.** Bank # appears.
**6.** Press the Tune Up/Down buttons to select the Bank #.
**7.** Press MODE/BAND. BANK NAME appears again.
**8.** Press MODE/BAND to access the Bank Name entry screen.
**9.** Press Tune Up/Down to select a character and MEM Up/Down to change a character position. Up to 12 characters can be entered one by one. A blinking cursor indicates the placement of the character being entered.

## Sirius Setup Menu
## Memory Name Procedure




**10.** Press MODE/BAND when bank name is entered.
**11.** SAVE CHANGES will appear.
**12.** Press Tune Up/Down to select Yes or No.
**13.** Press MODE/BAND to save bank name. The Bank Name menu returns to the Bank # prompt to name other banks, or press SELECT to exit the Bank Name menu.

# ST2S TUNER PROGRAMMING
## ST2 TUNER SETUP MENU




## Controller ID (SIRIUS)

The Controller ID procedure is used to identify the controller(s) that the SIRIUS tuner will respond to.

***Note:*** *For the SIRIUS module that is installed in the ST2S chassis, "All Controllers" will be the default setting.*

## Diagnostics (SIRIUS)

The Diagnostics procedure is for factory use only.

## Factory Initialization (SIRIUS)

The Factory Initialization procedure allows the erasure of all programmed settings of the SIRIUS tuner and returns them to the factory default settings.

**1.** Enter the Setup Menu by pressing and holding the SELECT button.
**2.** TUNER SETUP appears. Press MODE/BAND.
**3.** MEMORY NAME appears. Press MEM Up/Down until FACTORY INIT appears on the tuner.

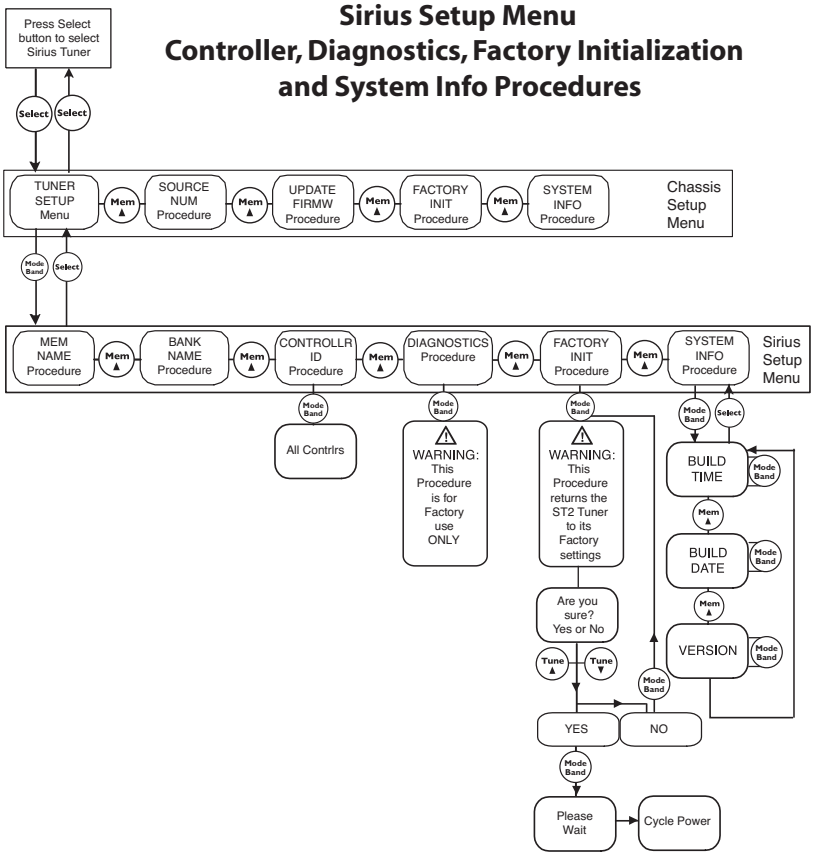
**4.** Press MODE/BAND to enter the FACTORY INIT menu.
**5.** "Are you sure" appears on the tuner. Using the Tune Up/Down buttons, view the "Yes" and "No" selections.
**6.** Press MODE/BAND to select. A "No" selection returns to the top of the Factory Init menu. A "Yes" begins the initialization.
**7.** "Please wait" appears on the tuner during the process and "Cycle Power" appears when complete.
**8.** Cycle power on the ST2S tuner.

## System Info (SIRIUS)

The System Info menu shows the SIRIUS module manufacturing build properties.

**1.** Enter the Setup Menu by pressing and holding the SELECT button.
**2.** TUNER SETUP appears. Press MEM Up/Down until SYSTEM INFO appears on the tuner.
**3.** Press MODE/BAND.
**4.** Press MODE/BAND at "Build Time" to view.
**5.** Press MEM Up/Down to advance.
**6.** Press MODE/BAND at "Build Date" to view.
**7.** Press MEM Up/Down to advance.
**8.** Press MODE/BAND at "Version" to view.
**9.** Press SELECT to exit the System Info menu.

**(END OF SIRIUS TUNER SETUP)**



# ST2S TUNER PROGRAMMING
## ST2 TUNER SETUP MENU

### *Tuner Setup Menu for AM/FM*
***It is important to select the desired tuner (Tuner 2 for AM/FM) using the SELECT button BEFORE accessing the Tuner Setup Menus.***

### Memory Name (AM/FM)
A memory preset *must* be created and saved before it can be named (see page 21). Once it is saved, the preset's Tuner #, Bank # and Memory # must be entered in the following procedure.

**1.** Enter the Setup Menu by pressing and holding the SELECT button.
**2.** TUNER SETUP appears. Press MODE again.
**3.** MEMORY NAME appears on the tuner.
**4.** Press MODE/BAND.
**5.** Bank # appears.
**6.** Press the Tune Up/Down buttons to select the Bank #.
**7.** Press MODE/BAND to advance.
**8.** Press the Tune Up/Down buttons to select a Memory #.
**9.** Press MODE/BAND to advance. MEMORY NAME appears again.
**10.** Press MODE/BAND to access the Memory Name entry screen.
**11.** Press Tune Up/Down to select a character and MEM Up/Down to change a character position. Up to 12 characters can be entered one by one. A blinking cursor indicates the placement of the character being entered.
**12.** Press MODE/BAND when memory name is entered.
**13.** SAVE CHANGES will appear.
**14.** Press Tune Up/Down to select Yes or No.
**15.** Press MODE/BAND to save memory name. The Memory Name menu returns to the Memory # prompt to name other presets, or press SELECT to return to the Memory Name menu start.

### Bank Name (AM/FM)
A custom name can be assigned to each of the six banks of Tuner 2 (AM/FM).

**1.** Enter the Setup Menu by pressing and holding the SELECT button.
**2.** TUNER SETUP appears. Press MODE/BAND.
**3.** MEMORY NAME appears. Press MEM Up/Down until BANK NAME appears on the tuner.
**4.** Press MODE/BAND.
**5.** Bank # appears.
**6.** Press the Tune Up/Down buttons to select the Bank #.
**7.** Press MODE/BAND. BANK NAME appears again.
**8.** Press MODE/BAND to access the Bank Name entry screen.
**9.** Press Tune Up/Down to select a character and MEM Up/Down to change a character position. Up to 12 characters can be entered one by one. A blinking cursor indicates the placement of the character being entered.
**10.** Press MODE/BAND when bank name is entered.
**11.** SAVE CHANGES will appear.
**12.** Press Tune Up/Down to select Yes or No.
**13.** Press MODE/BAND to save bank name. The Bank Name menu returns to the Bank # prompt to name other banks, or press SELECT to exit the Bank Name menu.

### Region (AM/FM)
The Region procedure assigns either US or Euro to the tuner. The difference between the two is that US FM frequencies operate in .2 MHz increments, while European FM frequencies operate in .05 MHz increments.

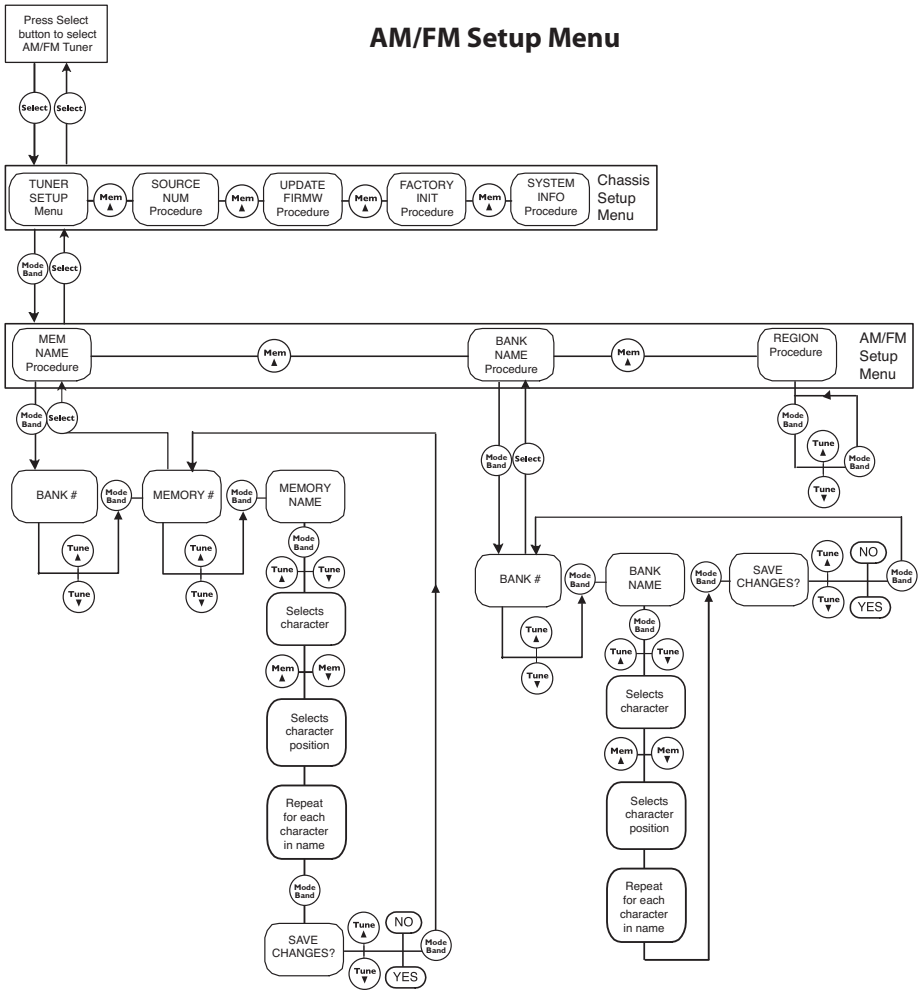
**1.** Enter the Setup Menu by pressing and holding the SELECT button.
**2.** TUNER SETUP appears. Press MODE/BAND.
**3.** MEMORY NAME appears. Press MEM

Up/Down until REGION appears on the tuner.
**4.** Press MODE/BAND.
**5.** Press the Tune Up/Down buttons to select either US or EURO.
**6.** Press MODE/BAND to select. Press SELECT to exit the REGION menu.

**(END OF AM/FM TUNER SETUP)**

## Backup and Restore

Once all of the tuner settings are completed, it may be advisable to create a backup of the programmed settings for future use. The backup will then be available in case tuner settings need to be restored.
The backup and restore PC application "RNET Backup" is available through the Document Center at www.russound.com. Also required are a DB9 male-to-female cable and laptop or desktop PC.



# ST2S TUNER PROGRAMMING
## PROGRAMMING FOR RNET CONTROLLER

***To Program an RNET Controller to operate with the ST2S Tuner:***
*(refer to the controller's Instruction Manual for details)*

**1.** Enter the Setup Menu by pressing the Setup button on the side of the UNO-S2 keypad.
**2.** SOURCE SETUP will appear. If programming a CAM6.6, press the Next button once for Source Setup. Enter the Source Setup Menu by pressing the Play button on the UNO-S2 keypad.
**3.** BASIC SETUP will appear. Enter the Basic Setup Menu by pressing the Play button again.
**4.** SOURCE NUM will appear. Use + and - buttons to select the source number to which Tuner 1 (SIRIUS) is connected. Press the Play button to enter your choice.
**5.** SOURCE NAME will appear. Use + and - buttons to select the name for the source (e.g., Tuner 1 or SIRIUS). Press the Play button to enter your choice.
**6.** COMMAND TYPE will appear. Select PERIPHERAL from the list. Press the Play button to enter this choice.
**7.** SAVE CHANGES? appears. Select "Yes" and press the Play button to save changes.
**8.** SOURCE NUM appears again. **Repeat steps 4 through 7 to configure the second tuner.**
**9.** Press the Setup button three times to back out of the Installation Menu.

***Source Configuration Note:***
When the ST2S Tuner is used with the CAV6.6 or other RNET controller, it is configured as an RNET command type "Peripheral" and is connected via the RNET bus. This makes the tuner behave as a fully integrated device with UNO keypad support. Each tuner must be set up with a unique source number (1 - 6) or unassigned. An unassigned tuner is not controlled by the RNET bus.

Each of the ST2S modules can be configured as source number "unassigned" if the module is used in another system (e.g., home theater) or will not be used as a source in the RNET system.

***Key Function Note:***
When using the tuner with an RNET system, do not reassign keypad and remote buttons for tuner control in the controller's Key Configuration Menu. When the tuner is assigned the "Peripheral" command type in the controller's Setup Menu, key assignments and functions are automatically assigned and will operate as shown in the preceding UNO-S2 keypad and SRC2 remote diagrams.

# TECHNICAL SPECIFICATIONS

## ST2S Smart Tuner

| | |
|---|---|
| Dimensions: | 17"W x 8"D x 1.8"H (43 x 20.3 x 4.4 cm) |
| Weight: | 7 lbs. (3.2kg) |
| Power Supply: | 12VDC 1.25A |
| Frequency Range: | AM 530 - 1710 kHz |
| | FM 87.7 - 107.9 MHz |
| FM Antenna Impedance: | 75 ohm unbalanced |
| Impedance: | 300 ohm balanced |
| **AM** | |
| Sensitivity @ S/N: | 20dB 55 dBu |
| Image Rejection: | 33dB |
| S/N Ratio: | 45 dB |
| **FM** | |
| Sensitivity @ S/N: | 30 dB 6dB max 12 dBu |
| Image Rejection: | 80 dB |
| S/N Ratio: | 60 dB |
| **SIRIUS** | |
| SIRIUS Band: | 2320.00 - 2332.50 MHz |
| SIRIUS Antenna: | 50-ohm SMB connection |

# WARRANTY & REPAIR

The Russound ST2S is fully 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
5 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.

# NOTES

# ST2S
## Smart Tuner

## Installation Manual

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