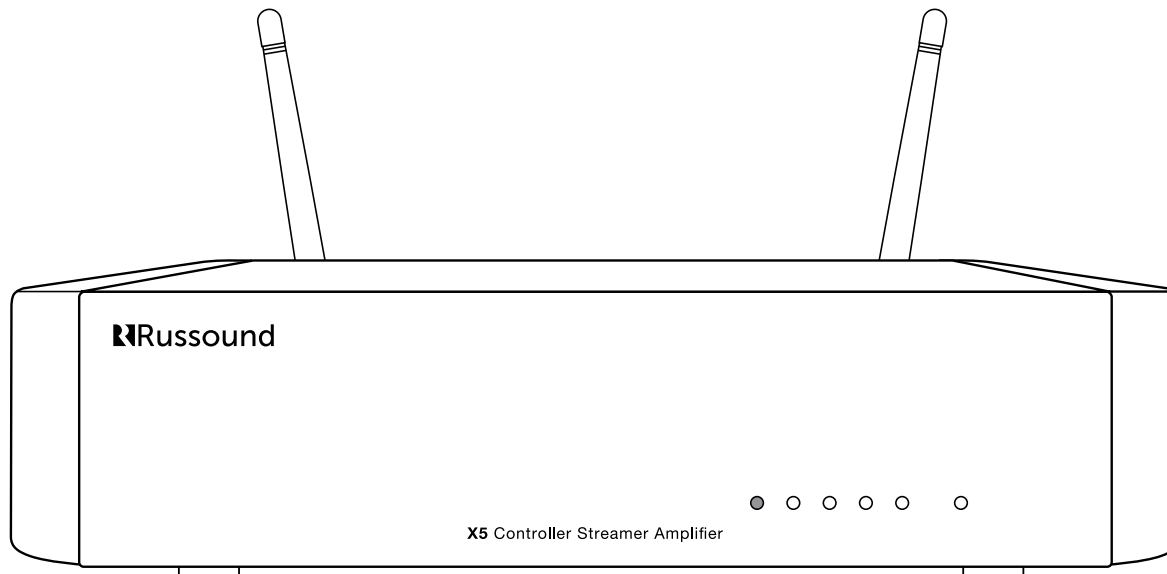


Russound®




X5 Controller Streamer Amplifier Installation Manual


PANDORA®





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 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 single-pole switch. When the switch is in the "Off" position, the appliance is not completely disconnected from the main power. The main power plug is used as the disconnect device and shall remain readily operable. When installing the product, ensure that the plug is easily accessible.
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 Amplifier - Do not mount this unit under a kitchen cabinet. Do not expose the amplifier to direct sun light or heating units as the amplifier 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.



Conforms to
UL60065
Certified to
CAN/CSA
IEC60065

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.

Safety Instructions	2	Technical Specifications	33
Product Overview	4	Troubleshooting	33
X5 Front Panel Illustration	5	Networking Best Practices	34
X5 Back Panel Illustration	6	Glossary.....	34
Setting Up X5	7	Tech Tip	35
Connecting X5 to Home Network	8-11	LED Diagnostic Chart.....	36
Wired Connection	8	Limited Warranty	37
Wireless Connection	8-10		
Setting Device Name	11		
SCS Configuration Software	11		
Installation Overview	12-13		
Listening to AirPlay Streaming	14		
Listening to Pandora Internet Radio	15		
Listening to Spotify.....	16-17		
Listening to SIRIUSXM Internet Radio.....	18		
Listening to TuneIn Internet Radio	19		
Listening to vTuner Internet Radio	20		
Listening to Network Audio Files (Media Server)	21		
Sharing Mode	22-23		
Controller/Keypad Connection	24		
Speaker Connection	25		
Adding An External Amplifier or A-BUS to X5	26		
Source Audio Connection	27-29		
IR Connection	30		
Zone 12 VDC Trigger Outputs	31		
USB Devices Connection	32		
Ethernet Connections.....	32		

PRODUCT OVERVIEW

Introduction

Thank you for choosing the Russound XStream™ X5 Controller Streamer Amplifier to fill your home with audio everywhere.

The Russound XStream X5 is the first-of-its-kind room-by-room distributed audio system. Unlike its hard-wired predecessors, the X5 is a certified Wi-Fi device that wirelessly synchronizes audio across all X5-powered rooms. It's designed to be subtle, unobtrusive and blend easily into any décor. Removable side panels reveal mounting brackets so you can easily mount and hide the unit behind furniture, TV displays or in a closet. The X5 puts your music up front and keeps the hardware out of the way.

Every room in your home is unique, and the X5 is the only product capable of offering customized options for each room. The back panel of the X5 features a number of wired connections, offering customized options to bring audio into each room of your home. The X5 is a streamer, an amplifier and a room controller all in one product and much more. The X5 is the first to be built on an all-digital platform. Digital inputs, digital streaming content, digital amplification at 50 watts per channel, and a high-end DAC deliver better audio performance. Designed for custom installation professionals, the X5 can change the way you approach distributed audio.

Russound was the first multiroom audio company to embrace Apple AirPlay and offer popular on-board streaming services. Stream your iTunes™ library and other audio content from any AirPlay-enabled Apple device to the X5 and listen to it throughout your home. The X5 also supports *Bluetooth*® streaming through an optional external receiver, the BTC-1X. The external *Bluetooth* option allows you to locate the receiver for maximum reception and performance, unlike most products that can be limited by internal *Bluetooth* reception capabilities.

Unlike other streaming solutions, the X5 gives the user real control of their listening experience. The X5 is the only single-room audio streamer, amplifier and controller with a keypad connection for complete control. Russound has three different keypad options for the X5:

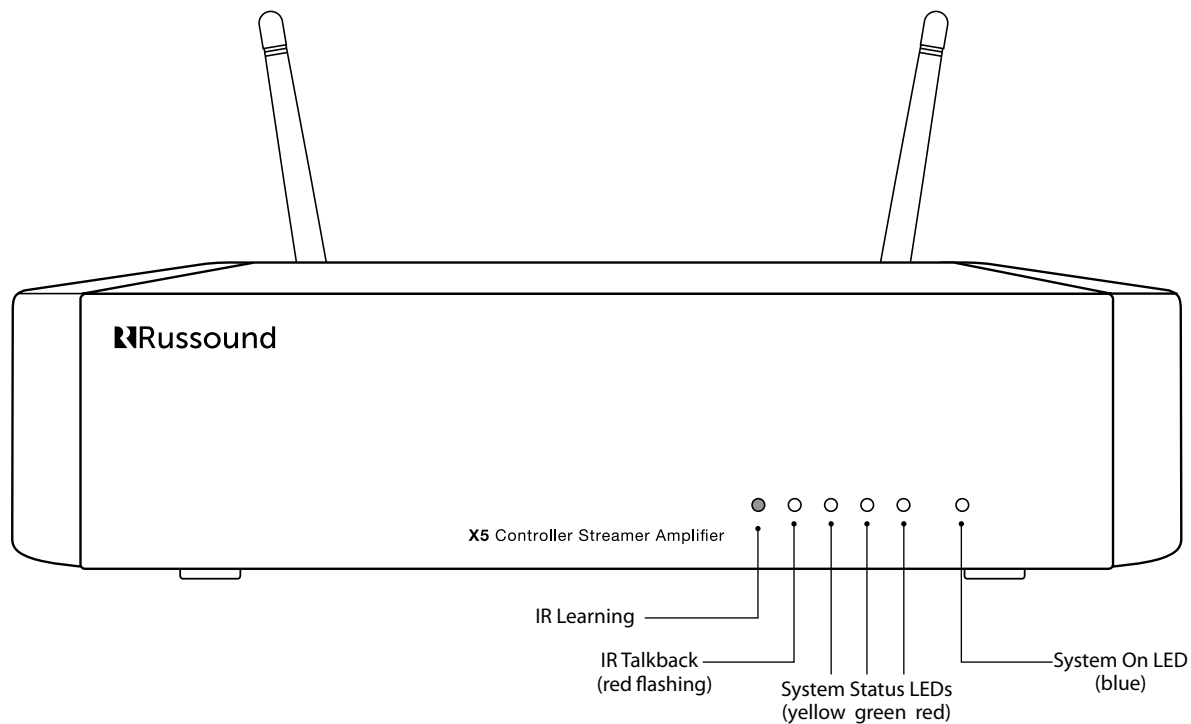
- TS3 touchscreen
- MDK-C6 multi-line display keypad
- SLK-1 single-line display keypad

Additionally, every X5 zone can be controlled by the MyRussound™ App, available for iOS and Android™ devices. The app and keypad can be configured to control other AV devices connected to X5. Every X5 has an IR database with universal and learning commands to control other AV devices. The X5 can also be controlled by other home automation systems through RIO, our open IP protocol. The power to control your musical universe, right there in your hands.

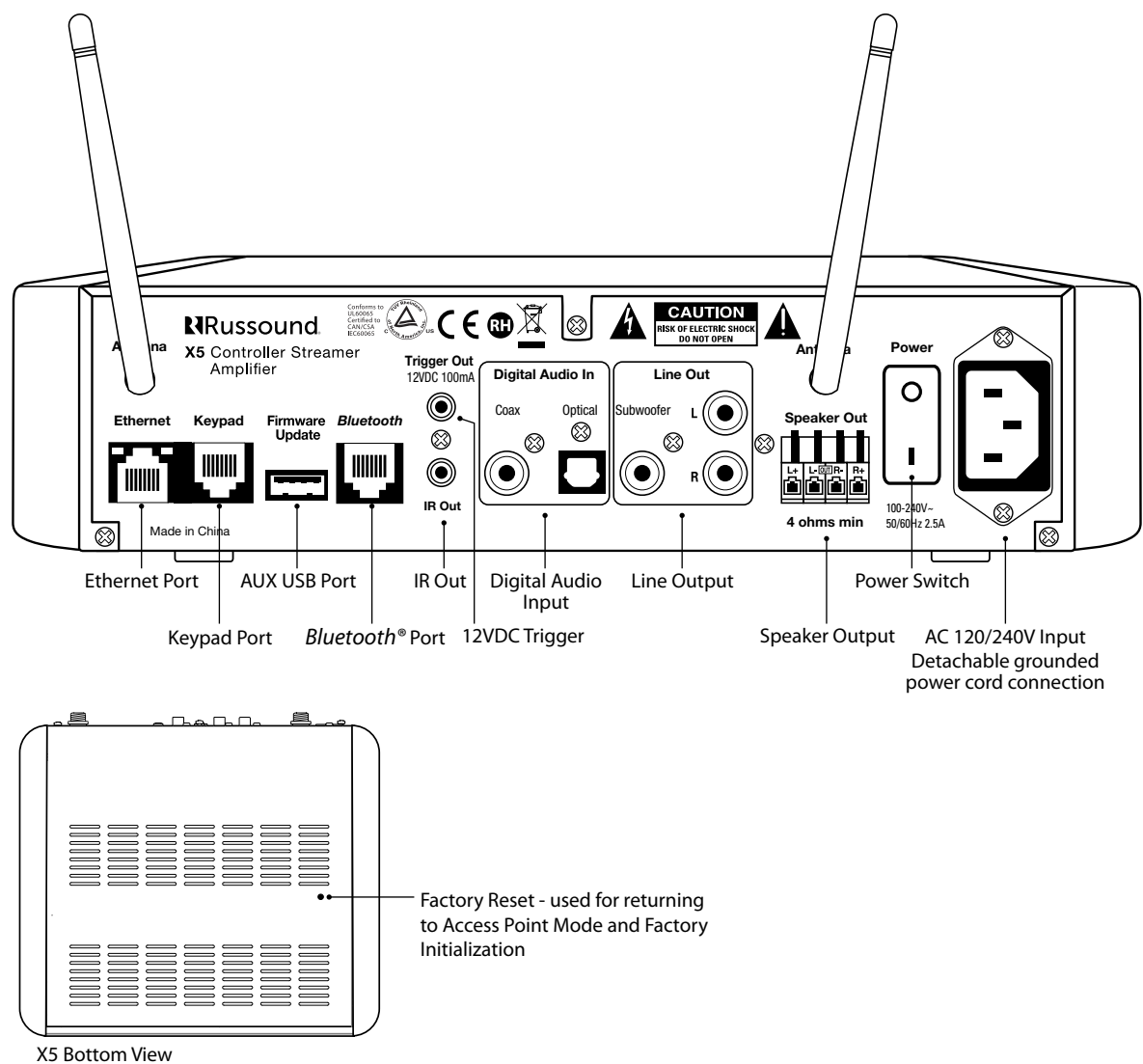
The XStream X5 offers several benefits for the installer. Wireless connectivity simplifies installation because no centralized wiring is needed in the home. All connections between X5 products are wireless through standard 802.11 Wi-Fi or wired Ethernet connections, making the X5 an excellent solution for retrofit and pre-existing homes. If you're familiar with current Russound systems, there are no new software programs to learn; our X5 unit uses the same programming tools used with our MCA-Series systems. The X5 also uses the same keypads and app for control as our MCA-Series system. Everything from remotes to the speakers, amplifiers and controllers can be hidden in each room, removing the AV clutter. With the X5, you can also personalize the user experience in each room while the operation and control is consistent throughout the system.

Features

- Wi-Fi Certified Device with built-in onboard streaming
- Built in AirPlay streaming with full metadata to app or keypads
- High definition audio streaming up to 24-bit/192kHz
- App or Keypad controlled (MyRussound App for iOS or Android, TS3, MDK-C6, SLK-1)
- IR controller with built in library of popular commands and learning capabilities
- *Bluetooth* ready (requires BTC-1X)
- Class D 50WRMS x 2 amplifier with subwoofer out
- Digital inputs
- Fixed/variable line audio outputs
- 12V trigger output



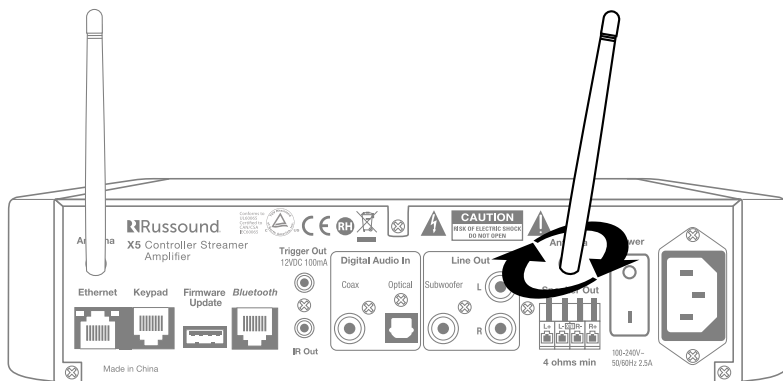
BACK PANEL



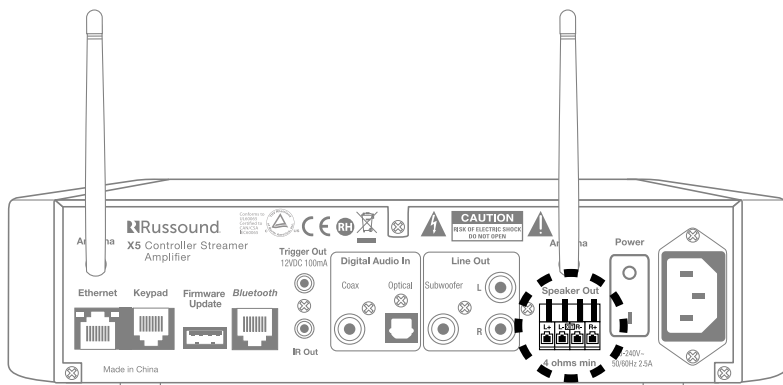
1. Unpack the X5 and all of its contents:

- 1 X5 Controller Streamer Amplifier
- 1 Power cord
- 2 Wi-Fi antennas
- 1 IR emitter

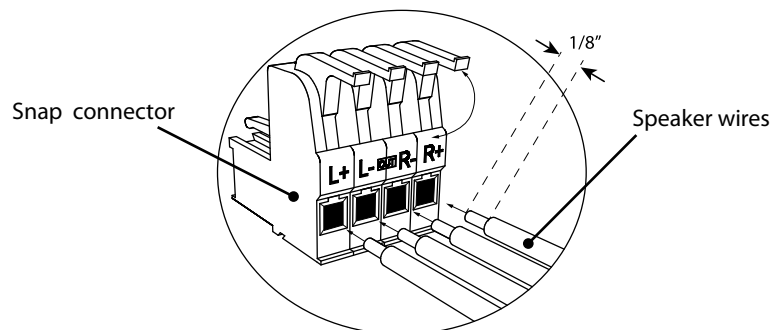
2. Screw the two antennas on the antennae posts as shown



3. Remove the detachable speaker connector from the X5



4. Strip back 1/8" of the insulation on the speaker wire and twist the end of each wire to tighten the bundle of copper strands on each wire.



5. Place the stripped end of the wire into the appropriate terminal and collapse the latch. Check to make sure there are no strands of copper showing and check the security of the wire in the connector. Between each terminal, take caution to not let the wire fray or touch another connection. Each terminal accepts up to 14 AWG wire.

6. Connect the other end of the wire to each speaker. Be careful to maintain polarity.

7. Re-connect the detachable speaker terminal.

CONNECTING XSTREAM X5 TO YOUR HOME NETWORK

Start by plugging in the power cable. DO NOT connect the Ethernet cable at this time. All other cables should be connected.

Power on the X5. The X5 will power on in Access Point mode by default. (After booting, the yellow and green LEDs will turn solid). Like other Wi-Fi enabled devices, Access Point mode allows you to directly connect the X5 via Wi-Fi.

There are two ways to to connect the X5 to your home network: using a wired connection or wireless connection.

Making a wired connection

1. Connect the Ethernet cable to the X5. The orange LED will flash rapidly for a few seconds and then turn solid. It will take 30-60 seconds for the LED to change to a solid green, indicating the X5 is connected to the network.

Note: A wired connection can be made when the X5 is in Access Point mode or already in Wireless mode by connecting the Ethernet cable.

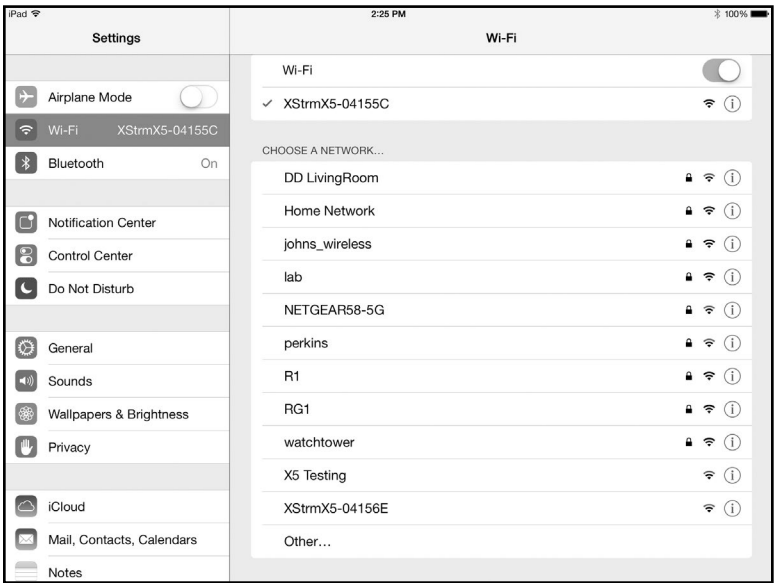
Making a wireless connection

1. Refer to the sticker on the bottom of X5 to find the Host Name of X5.

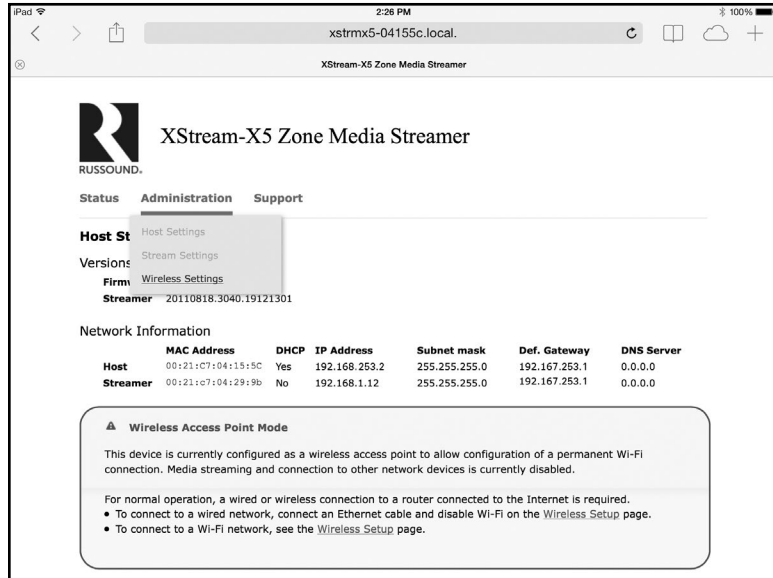
Sticker example:

Model: X5
S/N: 13304000000006
MAC: 00:21:C7:04:155:C
Hostname: XStrmX5-04155C

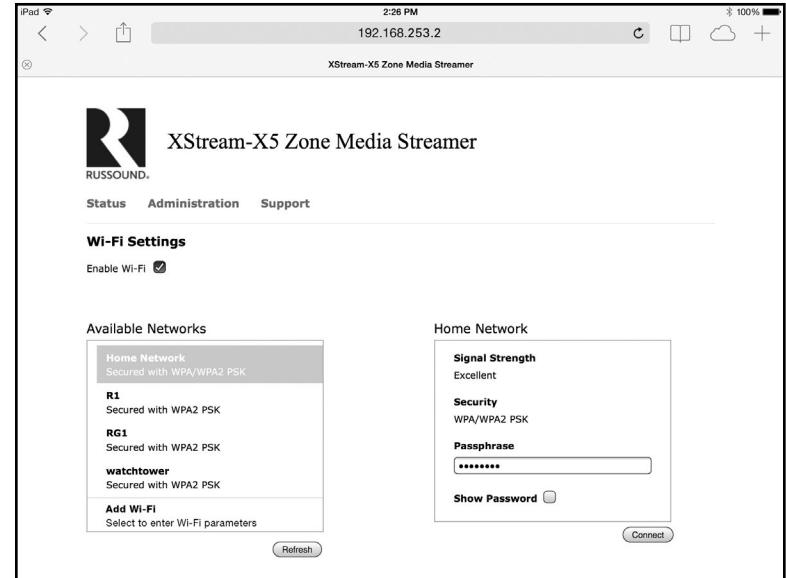
2. Navigate to the Wi-Fi settings on your mobile device or wireless network connections on your computer. The host name of the X5 will appear in the list of available networks. Connect to the X5 host name.



3. Open a browser on a mobile device or computer. For iOS (Safari browser), browse to <http://XstrmX5-XXXXXX.local>. (See sticker example shown on page 8). For other browsers, go to <http://192.168.253.2>. Hover over the Administration tab and select Wireless Settings from the dropdown menu.

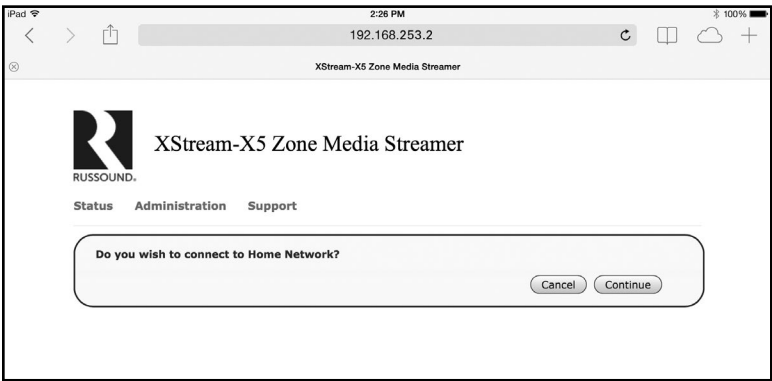


4. Select the desired network from the list of available Wi-Fi networks. If the Wi-Fi network does not broadcast its SSID, you can also manually setup a wireless network by selecting "Add Wi-Fi" from the list.



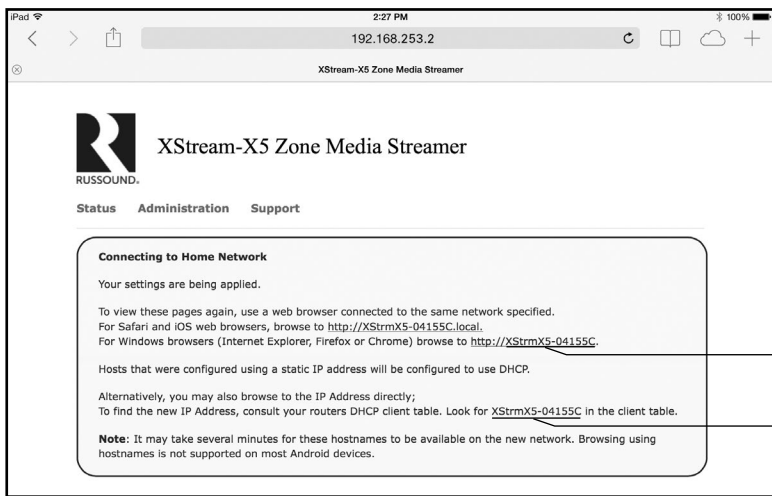
CONNECTING XSTREAM X5 TO YOUR HOME NETWORK

5. Enter security information and press connect. On the confirmation screen, press continue.



6. The X5 will now connect to the network. Once the green LED on the front panel turns solid, the X5 has successfully connected to the network. If the yellow LED begins to blink, the X5 could not connect to the specified network.

Follow the steps shown in the dialog box below.



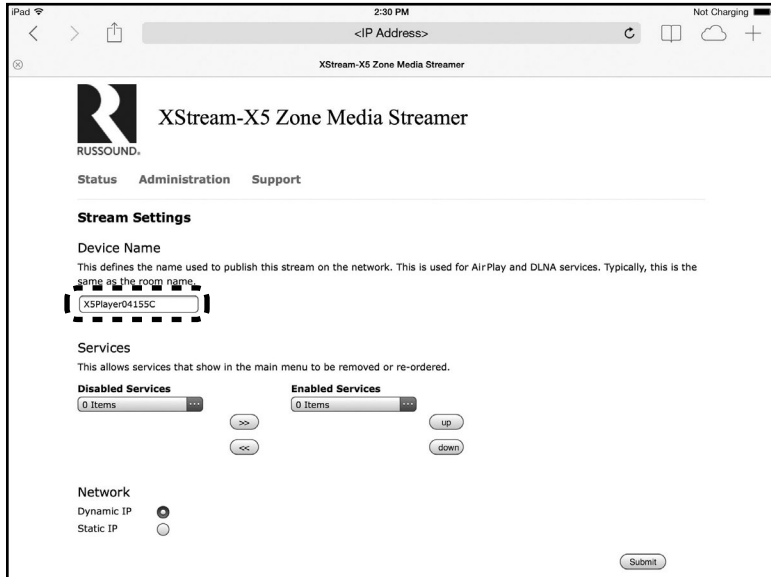
Changing from a wired to a wireless connection:

1. Disconnect the Ethernet cable from the X5. The orange LED will flash rapidly.
2. While the orange LED is flashing, the X5 needs to be reinitialized into Access Point Mode. Depress the Factory Reset button on the bottom panel for 2 seconds. The yellow and green LEDs will blink 6 times before going solid, indicating the X5 is in Access Point mode.

See instructions on pg 8-10 for "making a wireless connection".

Setting device name

Once connected to the home network, you can set the Device name by changing the “Device Name” field on the “Stream Settings” page. To view the Stream Settings page, select Administration (from the dropdown menu), then Stream Settings.



The XStream X5 can be fully configured using the SCS-C5 configuration software. SCS-C5 is available for download from the Support Center at www.russound.com. The software has a Source Setup Wizard to aid in the setup and basic configuration of the sources. Once configured, the system information can be saved to a file for later use.

Items to be programmed with SCS-C5 software include:

Zone (room name) and Source Names - a list of predefined names for both are available and will be visible upon keypads and MyRussound App. Custom naming is also possible.

Source Exclusion – enables or disables the set of sources available to each audio zone.

All ON Participation - defines whether or not the zone will respond to All ON commands from any X5 connected on the network.

Power Management of Sources - enabled / disabled per source. If enabled, the Source IR command feature will be sent as part of the power management feature. The source will turn off 5 minutes after the last zone is turned off. This feature uses IR commands and audio signal sensing to power up sources and initiate audio to confirm source power states.

Sound Controls - Adjust Bass, Treble, Balance, and Loudness initial settings.

Fixed / Variable Line Output - Determines if zone preamp output gain is at a fixed level or controllable with the zone volume adjustment.

IR Learning - Source IR codes can be learned, saved, and managed.

IR Macros – Source IR codes can be programmed together in a sequence to transmit as many as 30 IR commands from a touch of button.

IR Universal Code Library – Universal commands are stored in the X5 database to simplify programming.

INSTALLATION OVERVIEW

Wiring

If using a wired Ethernet connection, run a CAT-5e cable between the controller location and the nearest network port. CAT-5e wire is also used for any keypad connection (optional) and the BTC-1X *Bluetooth* connection (optional). Use the T568A wiring configuration for all connections. Refer to the diagrams on pages 24 and 27. **Note:** all connections must be made with the power OFF.

Route standard 4 conductor speaker wire to the speaker location. The speaker connection requires a minimum 4 ohm load. Standard 16-gauge 4-conductor stranded speaker wire can be run up to 125 feet; 14-gauge wire can be run up to 250 feet.

Installation

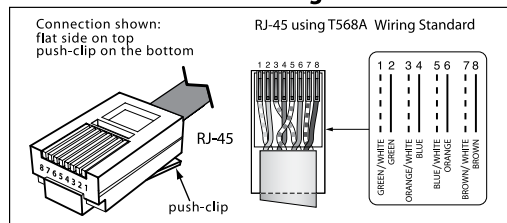
The XStream™ X5 controller can be wall mounted, cabinet mounted or placed on a shelf in an equipment rack. The controller will occupy very little space. The side covers can be removed to reveal mounting tabs. Once mounted, the side panels can be repositioned to hide the mounting hardware. (See diagram of removable side panels).

Ventilation Requirements

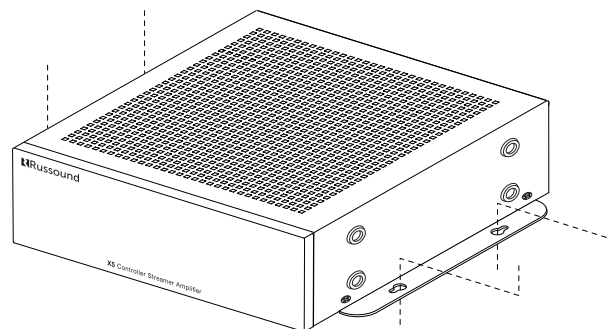
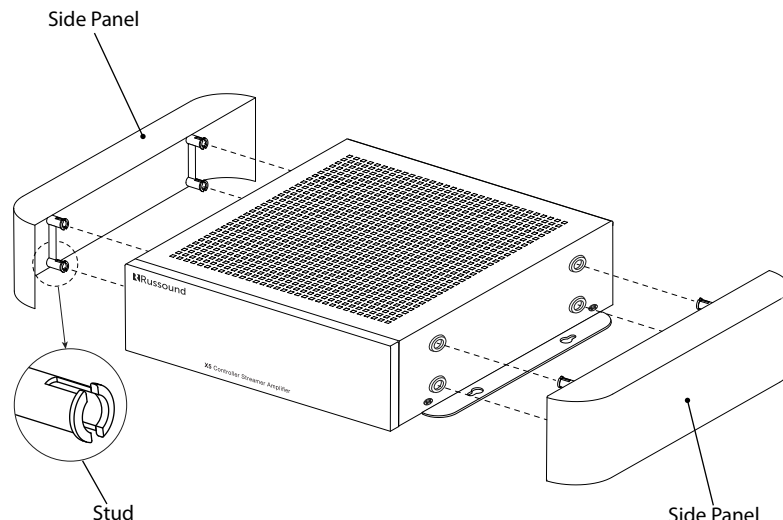
Important: The XStream™ X5 should be situated so that its location or position does not interfere with its proper ventilation. Do not block vents above the unit, as it requires ventilation for proper operation. Do not expose to excessive dust, and do not allow dust to build up on the unit and block vent holes. Do not place the XStream™ X5 above or below a heat-generating component such as an audio amplifier.

Be sure to leave at least 2 inches of space to the sides of the unit with open air flow above. A single-space rack mount vent or about 1.75 inches must be kept clear above and below the unit.

RJ-45 CAT-5 Wiring Scheme

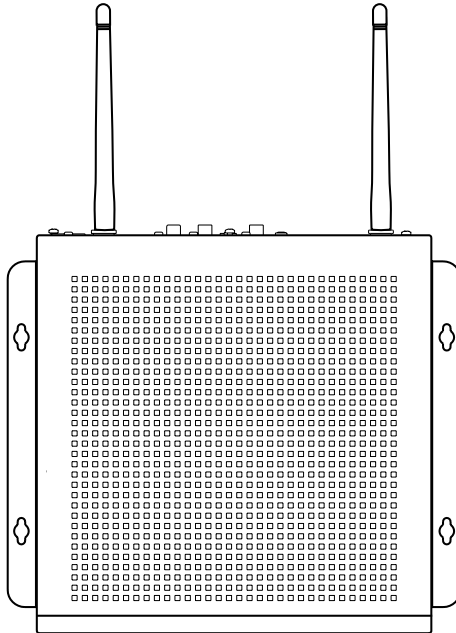


Mounting on the cabinet



Note:
Mount side panels back in place before applying power.

Mounting on the wall



Electrical Power

The XStream™ X5 operates at 100-120VAC ~60 Hz or 220-240VAC ~50 Hz. Voltage is selected automatically by the power supply. It is recommended that the XStream™ X5 and the source equipment be plugged into a dedicated 15-amp circuit. The power switch for the unit is on the rear panel.

Important Considerations

- **Disconnect the power cord before making any connections to the controller**
- Verify that all connections and polarity are correct.
- Keep all power cords away from all signal cables to prevent humming from induced noise.
- Choose reliable signal cables and patch cords.
- Label all wires with the room location at both ends of the wire.
- Avoid running speaker wires or signal cables close to house electrical wiring for any distance. If you have to run them parallel, make sure to space the wires at least two feet from the AC line. If you need to cross an AC line it should be at a 90° angle.



Do not connect the controller's main power feed until all other connections have been made and verified. Live connection or removal of the keypad wiring or other wiring when the system is powered can cause communication problems in the network. Double-check terminations during each phase of the installation to prevent accidental damage. Incorrect wiring is the number one cause for non-warranty product damage.

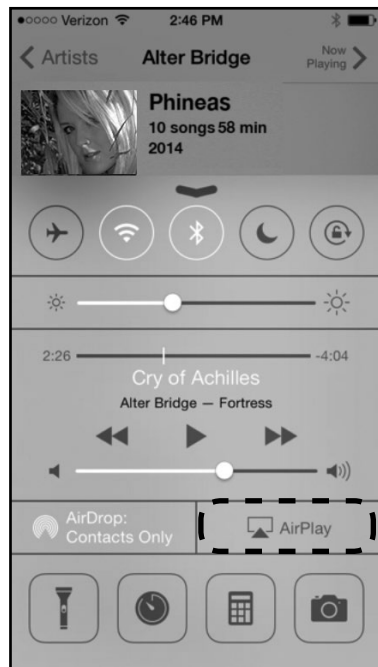
LISTENING TO AIRPLAY STREAMING

The XStream X5 supports Apple's AirPlay technology. Airplay allows you to wirelessly stream the high quality audio content on your iOS device across your home network. AirPlay also shares metadata and provides simple control commands from your iOS device or computer. With AirPlay, your iOS device becomes an extension of your audio system.

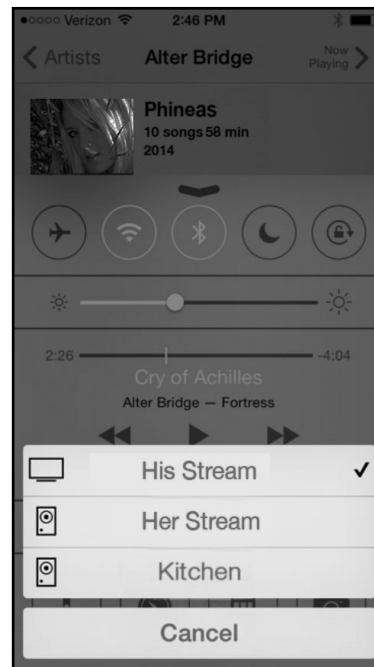
How to use AirPlay on your iOS device:



Open your music app and choose an artist from your playlist.



Swipe from the bottom of the screen to the top of the screen to reveal the AirPlay menu.



When you tap the AirPlay icon, a list of devices will appear for you to stream to. The X5 will appear either as the streamer name or unique device name that's been assigned. Select the X5 device name and the music will begin playing.

Note: If you have a connected keypad or the MyRusound app, the iOS device will show the metadata and transport controls such as Play/Pause, next and previous track, and volume up and down.

Pandora provides a customized experience allowing you to create up to 100 stations based on your musical preferences. You can access the same Pandora account on all network-connected X5 streams.

To listen to Pandora, you will need to subscribe to Pandora Radio service and obtain a valid username and password. This is done easily by accessing the Pandora Radio web-site to create either a free or paid account. The X5 will allow you to login to Pandora and start your listening experience. If you have not created any stations prior to logging into the X5, you will be prompted to do so after entering the Pandora menu option.

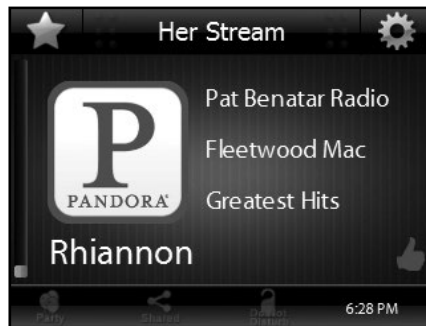
You can now play any Pandora stations that exist in your library as well as using the options available to create new stations using any of these three features.

- **Create New Station:** this allows you to search by artists, song titles, and genres.
- **New Station from Track:** this will create a new station based on the song that is currently playing
- **New Station from Artist:** this will create a new station based on the artist that is currently playing

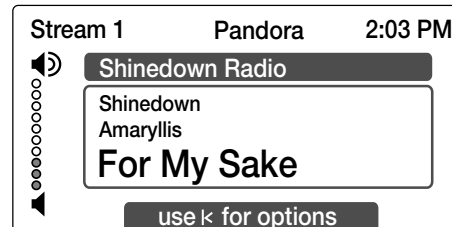
You will have the ability to rate songs by giving them a 'Thumbs Up' or 'Thumbs Down'. Giving a song thumbs up will cause Pandora to play that song more often on a particular station. Give a song a 'Thumbs Down' will cause Pandora to remove the song from being played on a particular station. You will also have access to other Pandora features such as bookmarking tracks, putting tracks on the shelf for a while, renaming stations, deleting stations, and finding out more information about why a track is playing.

Note: When using the MDK-C6 keypads, you will need to press the Previous (|<) button in order to access the Pandora Options menu.

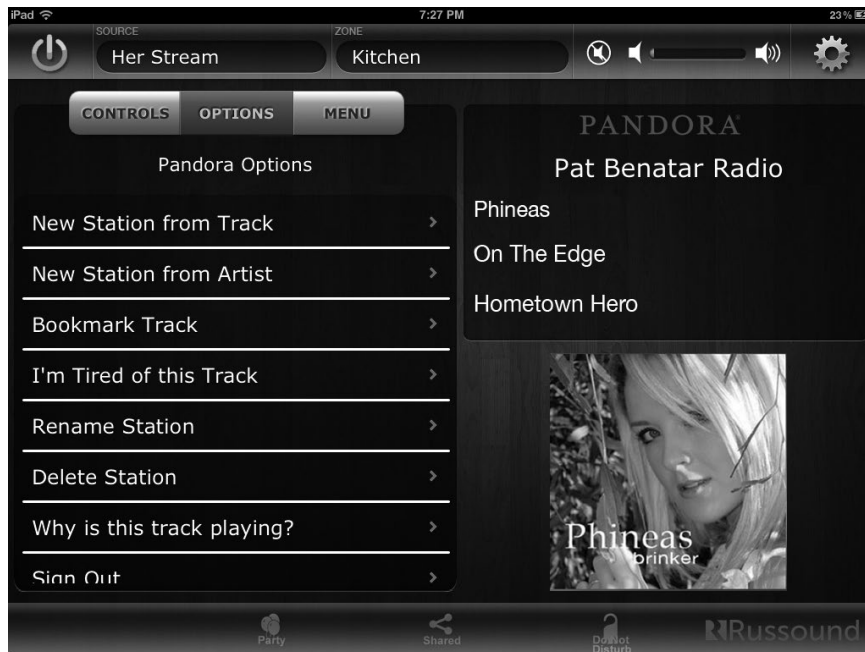
TS3 Now Playing Screen



MDK-C6 Now Playing Screen



MyRussound App Now Playing Screen



LISTENING TO SPOTIFY®

Using This Device With Spotify Connect

Spotify is an award-winning digital music service that gives you on-demand access to over 20 million tracks. Spotify makes it easier than ever to discover, manage and share music with your friends, while making sure that artists get a fair deal. Spotify lets you listen to millions of songs – the artists you love, the latest hits and discoveries just for you.

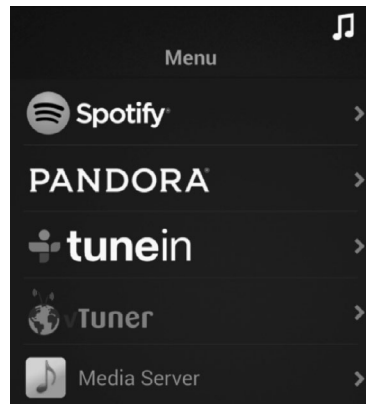
Spotify is not only extremely popular in the US but also worldwide. Spotify is available in 57 markets globally, making it the largest worldwide availability of any streaming service.

The XStream X5 system supports Spotify Connect, allowing you to play Spotify on your X5 system using the Spotify App on your phone or tablet.

In order to get Spotify on your X5, the X5 needs to be updated to the latest firmware version. For more information about firmware versions, please refer to the Russound Support Center on our website. Next, the Spotify App must be installed on the phone or tablet that is connected to the same network as your Russound system. The Spotify App is available for download from the App Store for iOS devices and from the Google® Play Store for Android® devices. However, in order to use Spotify on your Russound system, a Spotify Premium Account is required. New users to Spotify can receive a 30-day free trial from Spotify by going to www.spotify.com/freetrial.

Step 1. Connect X5 to the same network as your phone, tablet or PC running the Spotify app.

Step 2. In the MyRussound app, go to the streaming services menu and choose Spotify. The Spotify app will open. If your phone/tablet doesn't have the Spotify App installed, you will be taken directly to the App Store (iOS) or the Google Play Store (Android) to download and install it.

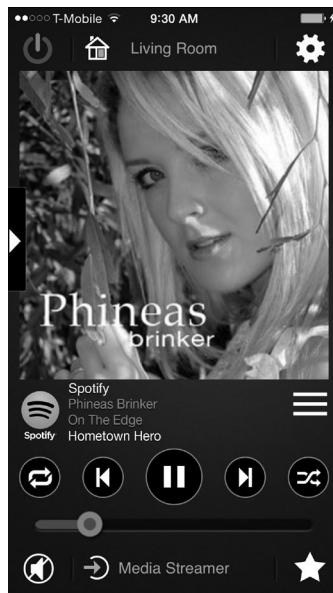
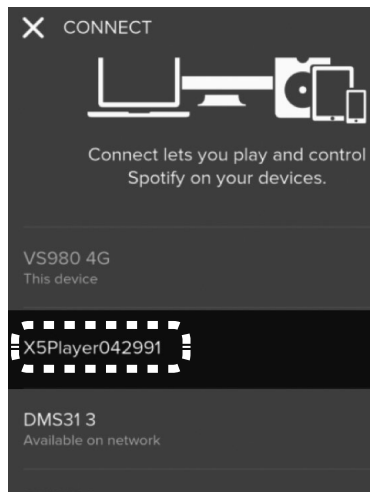


Step 3. Play any song to navigate to the Now Playing screen. Press the Spotify Connect Logo (speaker within a circle on the bottom right of the Spotify app).



Spotify Connect®

Step 4. In the Connect menu, choose your Russound device from the list of available devices that appear.



Step 5. Once you have selected your Russound device, your Spotify music will play on your Russound device. Your music is now being streamed from the Spotify server and can be controlled from your MyRussound™ App or keypad, or you can continue controlling your music from the Spotify App.

Since the Spotify App streams from the Spotify server rather than from the phone/tablet, the phone/tablet is no longer required in order to continue playing your Spotify music. Unlike Airplay, the music will continue playing if your phone/tablet gets disconnected from the Wi-Fi network or if you get a phone call.

Controlling the volume:

On the X5, when Spotify music is playing, the volume control on the MyRussound App and Spotify App are linked, which means a change in volume in one service will also affect the other.

Note: When mute is selected on the MyRussound App, the Spotify App will indicate minimum volume.

For information on how to set up and use Spotify Connect please visit www.spotify.com/connect

The Spotify Software is subject to third party licenses found here : www.spotify.com/connect/third-party-licenses.

LISTENING TO SIRIUSXM® INTERNET RADIO

SiriusXM Internet Radio delivers a variety of commercial-free music including Pop, Rock, Country, R&B, Hip-Hop, Jazz, Classical and much more, plus expert sports talk and analysis. You also get exclusive entertainment, talk, comedy, family programming, local traffic and weather and news from your most trusted sources

There are a variety of programming packages available, including the option of adding "The Best of XM" programming to the SiriusXM Internet Radio service. "The Best of XM" service is not available to Sirius Canada subscribers at this time. Please check with Sirius Canada for any updates using the numbers and web address below.

Family friendly packages are also available to restrict channels that feature mature programming.

To listen to SiriusXM Internet Radio, you'll need to subscribe to SiriusXM Internet Radio service and obtain a username and password. SiriusXM Internet Radio is available to residents of the United States, Puerto Rico, and Canada.

To subscribe to SiriusXM Internet Radio, U.S. customers should visit www.sirius.com/internetradio or call 1-888-539-SIRI (1-888-539-7474).

Canadian customers should visit www.siriuscanada.ca

Current XM Radio Online subscribers will need to log into the XM online account manager and update their password in order for their credentials to work on a SiriusXM Internet Radio compatible device. If the username is over 50 characters long subscribers will need to update the username on the same screen.

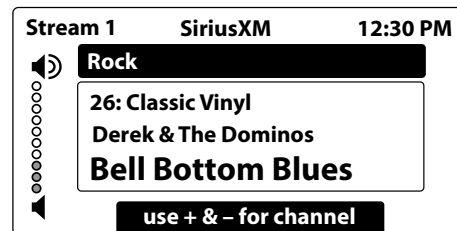
SiriusXM Internet radio permits one instance of streaming content per subscription. So while, the same user account credentials can be entered into all streaming modules of multiple X5 products, only one can stream content at any given time. Selection from another X5, or accessing the SiriusXM account from any other device, will disconnect prior instances of SiriusXM internet radio streaming. Once account credentials are entered, they are saved on the X5 for future use. After logging out, the username and password can be cleared from the log in screen to prevent unwanted access.

SiriusXM channels are filtered by categories so the user will first be prompted for the selection of the category, then the list of all channels within that category will be presented for selection.

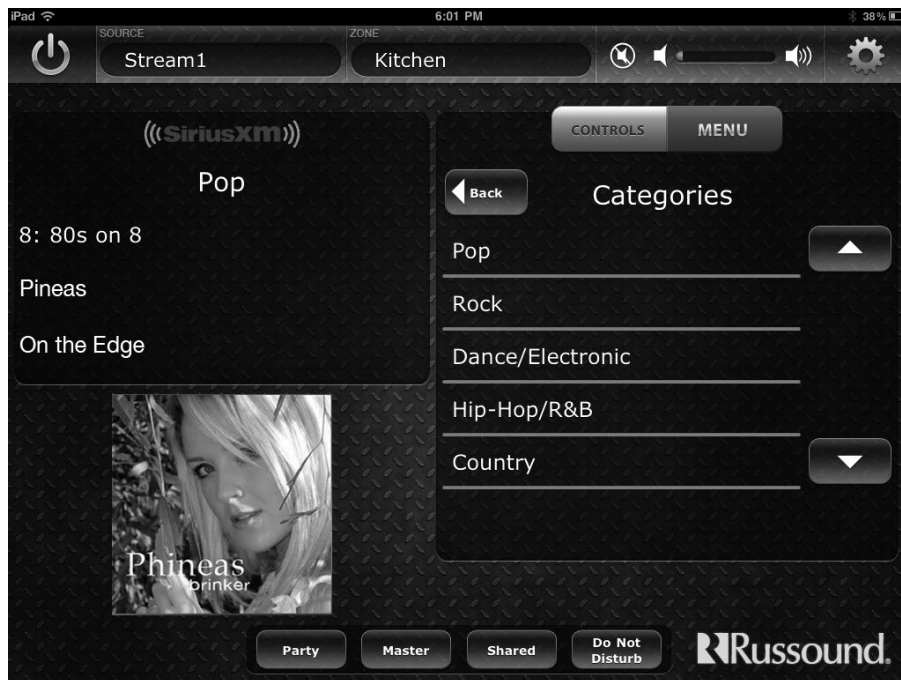
TS3 Now Playing Screen



MDK-C6 Now Playing Screen



MyRussound App Now Playing Screen

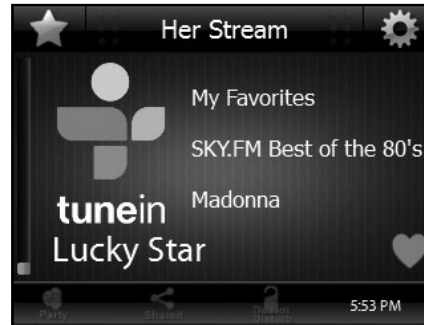


TuneIn™ Internet Radio can be accessed on the X5 and is supported through all supported user interfaces. TuneIn™ lets you listen to the world's radio from the any X5 connected in the home. Whether you love sports, music, news, or comedy, TuneIn gives you the best of what's live with 70,000 radio stations as well as two million on-demand programs. Over 40 million listeners use TuneIn every month, across 200 platforms worldwide. You do not need to subscribe to TuneIn radio with the X5 to enjoy content streaming from the cloud. Listening is easy and the choices are abundant.

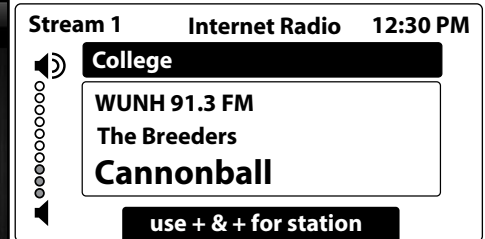
Your TuneIn service can be linked to a TuneIn account by using the TuneIn website. The association code that is required can be found by selecting "Association Code" at the bottom of the TuneIn navigation menu from your MyRussound app.

For more information on TuneIn and to access online, visit at: <http://www.tunein.com>.

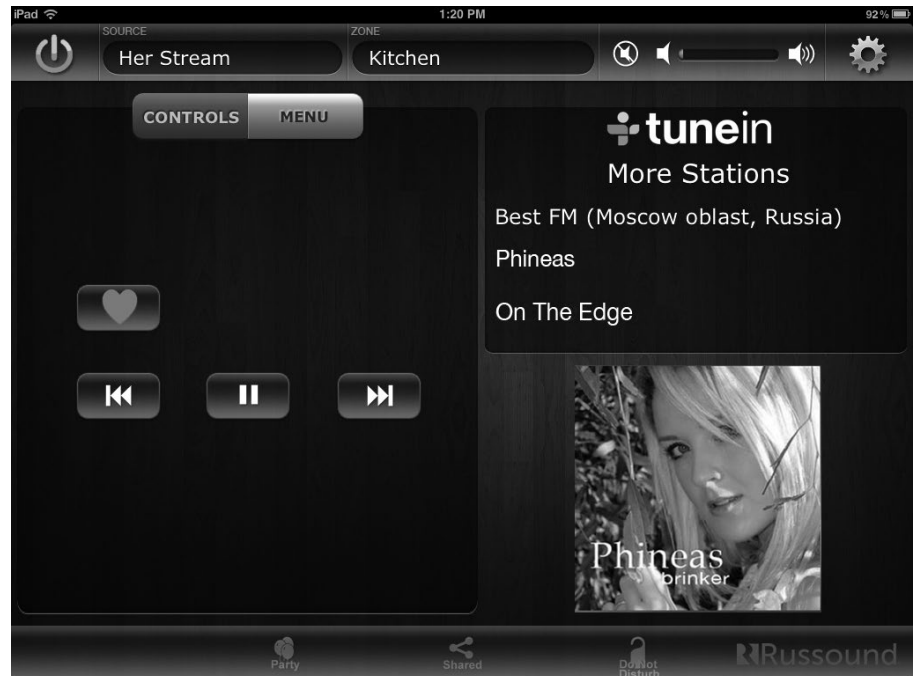
TS3 Now Playing Screen



MDK-C6 Now Playing Screen



MyRussound App Now Playing Screen



LISTENING TO vTUNER INTERNET RADIO

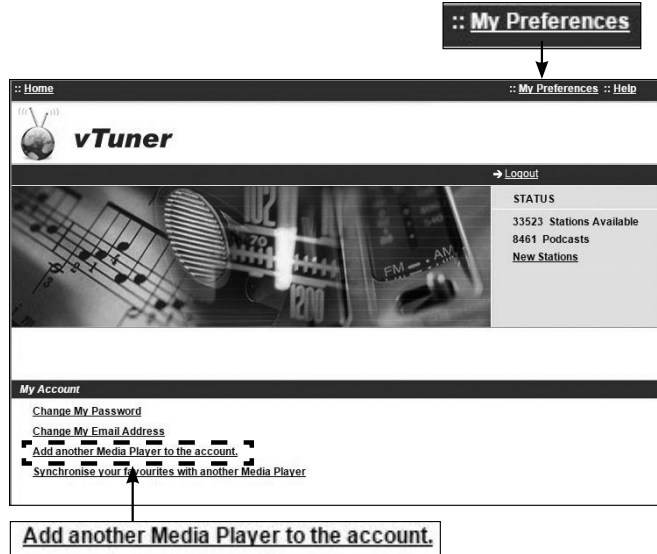
vTuner Internet Radio can be accessed through any supported user interface. vTuner Internet Radio provides access to thousands of internet radio stations and Podcasts from around the world. Users can filter content by Local Stations, Location, Genre, New Stations, Most Popular, and Favorites.

Users can access the online web portal at:
<http://russound.vtuner.com>

Using the X5 and vTuner, users can search stations & podcasts, create favorites, and even add stations not listed in the vTuner database.

Users can create an account for the vTuner online web portal, users will need to provide the Access Code of their X5 as well as a valid email address and a password. Select the "Get access code" option within the vTuner menu to display the access code.

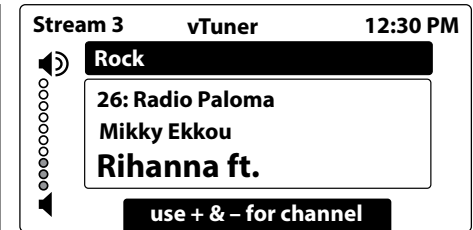
At the vTuner web portal, create an account and access the My Preferences page. Here you can enter the unique Access Code for each X5 device.



TS3 Now Playing Screen



MDK-C6 Now Playing Screen



MyRussound App Now Playing Screen



The X5 can access audio files that reside on a network connected computer or NAS storage device that is UPnP/DLNA compliant. UPnP (Universal Plug and Play) and DLNA (Digital Living Network Alliance) protocols permit network connected devices to discover each other and share content and control. Many media player software programs feature UPnP/DLNA capabilities, and more networked storage devices are providing UPnP/DLNA server functionality.

The X5 supports multiple file formats: MP3 (CBR, VBR), WAV (8, 16, and 24-bit), OGG Vorbis, FLAC (8, 16, and 24-bit). AAC and AAC+ file formats, which are used by Apple for music purchased through iTunes, can also be played. Any content that is protected with DRM (Digital Rights Management) can not be played back.

Users can also install UPnP/DLNA media server software on their computers to access iTunes library content and control it from a Russound user interface.

The menu structure for locating and playing your music will vary depending on the DLNA server being used. Feel free to experiment with different software or hardware to find the best one for your needs.

TS3 Now Playing Screen



MDK-C6 Now Playing Screen



MyRussound App Now Playing Screen



SHARING MODE ON XSTREAM X5

Party Mode and Sharing. What's the difference?

MCA controllers and XStream products have the ability for multiple zones to play the same audio. For many years in Russound RNET systems this was referred to as Party Mode. With the introduction of the XStream X5, the ability for more than one zone to play the same audio is referred to as "Sharing". The process for a user to enable or disable Party mode and Sharing varies between both product lines.

XStream products are designed to work seamlessly with MCA controllers. Here you will find an explanation of the differences between Party Mode and Sharing.

MCA Controllers and Party Mode

Party mode on MCA controllers is a feature that allows the entire system to play the same source in every zone. Any source can be selected and that source plays through all zones (that are enabled to participate in Party Mode). This is easily achieved because the RNET protocol can command any zone to select that particular source used for the Party Mode. It works as a simple source select command duplicated over multiple zones.

In the case of any RNET system, such as the C-Series and MCA-Series controllers, Party Mode can be used for any source and in any zone.

XStream X5 and Sharing

Sharing mode on XStream products is different than Party Mode on RNET Systems. In Sharing mode, only streaming services can be shared and currently up to 4 units can share a stream. In addition, streams cannot be shared between XStream products and MCA controllers. This restriction is largely due to hardware limitations of the XStream products and bandwidth limitations on local networks to be able to support successful synchronization of an audio stream across multiple devices. Another caveat is that Airplay cannot be shared across multiple devices due to a restriction enacted by Apple.

In the case of XStream systems, Sharing Mode can be used for any Streaming service except AirPlay and Spotify Connect with up to 4 other XStream devices.

Sharing Streams

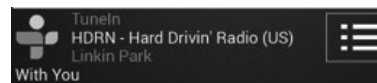
The XStream X5 can share a stream on the network. The XStream X5 can sync with up to 3 other X5 units, and up to 2 separate shared streams can exist in the same system.

Note: Only Streaming services can be shared. The Digital audio input and *Bluetooth* cannot be shared to other X5 units.

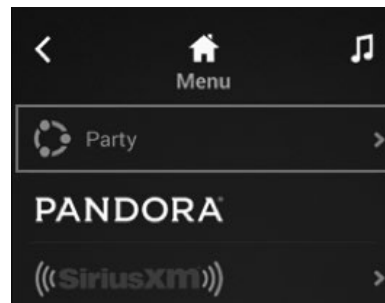
Note: Apple Airplay and Spotify Connect cannot be shared due to licensing restrictions.

Start Sharing a Stream

To start sharing a stream, first choose any streaming service to listen to. Once your music is playing, enter into the Source Menu.



Next, select Party from the Source Menu. Note: The Party Menu will only appear if more than one XStream X5 is found on the network.

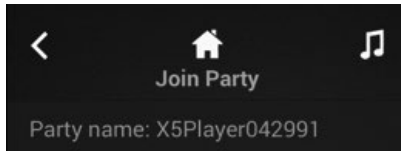
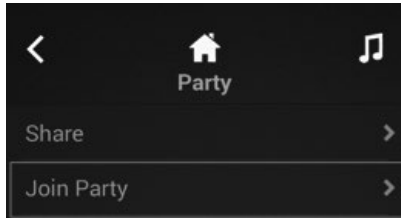


You will be asked to Share or Join Party. Choose Share.



Join the Shared Stream

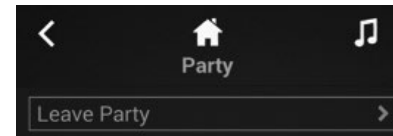
Once the stream has started sharing, you can then go into another X5 zone and join the shared stream.



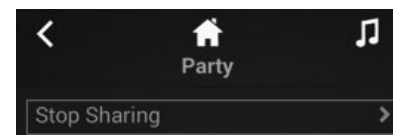
The X5 zone will start playing the shared stream. You can continue adding up to 2 more zones to the shared stream.

Stop Sharing the Stream

To disconnect a zone from the shared stream, enter into the Party menu and select Leave Party.



To stop the shared stream from the source, go into the Party menu for the zone sharing the stream and select Stop Sharing.



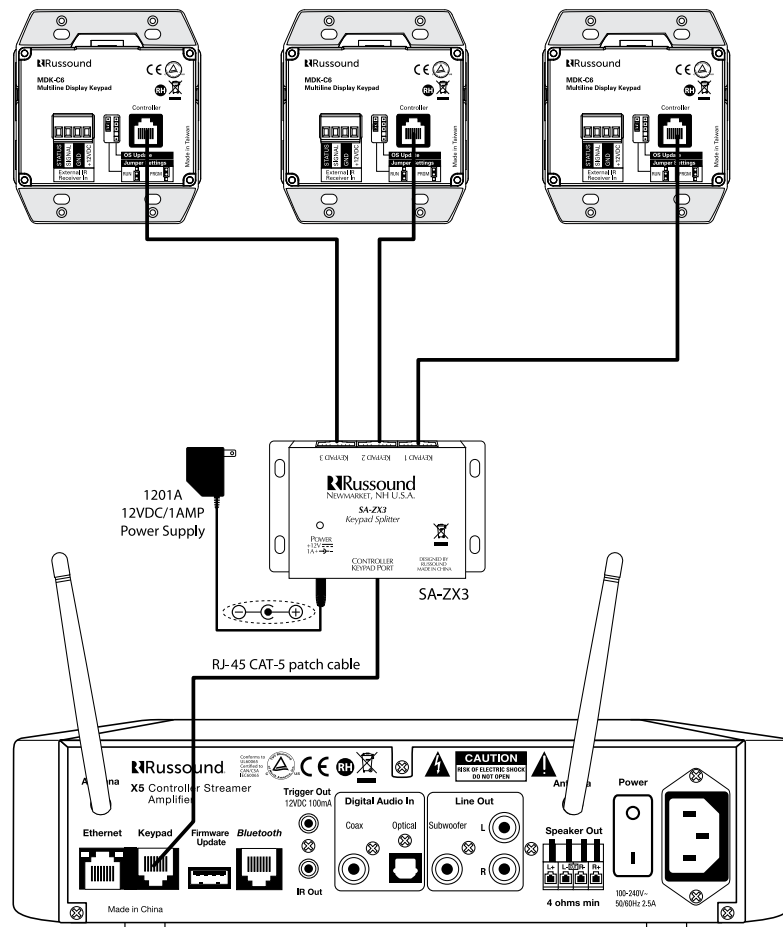
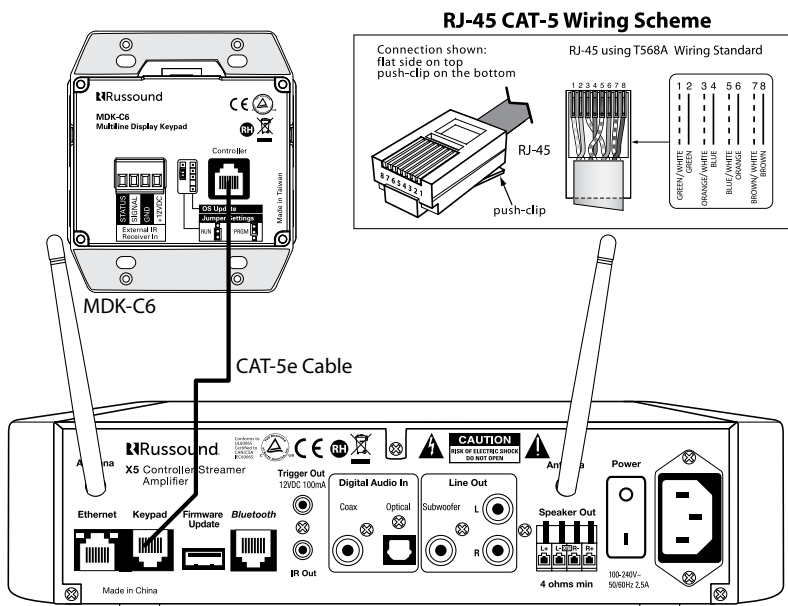
CONTROLLER / KEYPAD CONNECTION

The MDK-C6 keypad is designed for use with our popular C-Series controllers and XStream™ X5, and connects to the keypad port on the rear of the X5.

Connections are made using CAT-5e with RJ-45 connectors using T568A wire configuration. For a clean installation when wiring from a keypad port, use a CAT-5e patch cable to connect from the keypad port to a RJ-45 wall plate (optional). Using the same T568A RJ-45 wiring configuration, use CAT-5e cable from the wall plate to the keypad. The maximum CAT-5e cable length is 250 feet between the controller and the keypad.

If more keypads are desired for an X5, use an optional SA-ZX3 keypad splitter with a Russound 1201A (12VDC 1A) power supply at the controller end. All keypads on an SA-ZX3 control the same X5. More detailed information regarding SA-ZX3 installation and operation can be found in its installation manual.

Note: all connections must be made with the power OFF.



Speaker Output Connections

CAUTION:

Do not connect L- and R- together. Use four-conductor cable and wire each ground individually. Do not use a common ground. Shorting between terminals will cause damage to the digital amplifier.

The XStream™ X5 supports speaker outputs for one room of audio. The 50 watt per channel stereo speaker level outputs are powered by a high-current two-channel digital amplifiers. Each speaker connection requires a 4 to 8-ohm load.

The speakers connect to the XStream™ X5 using the supplied modular snap speaker connector.

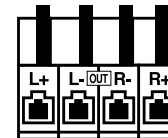
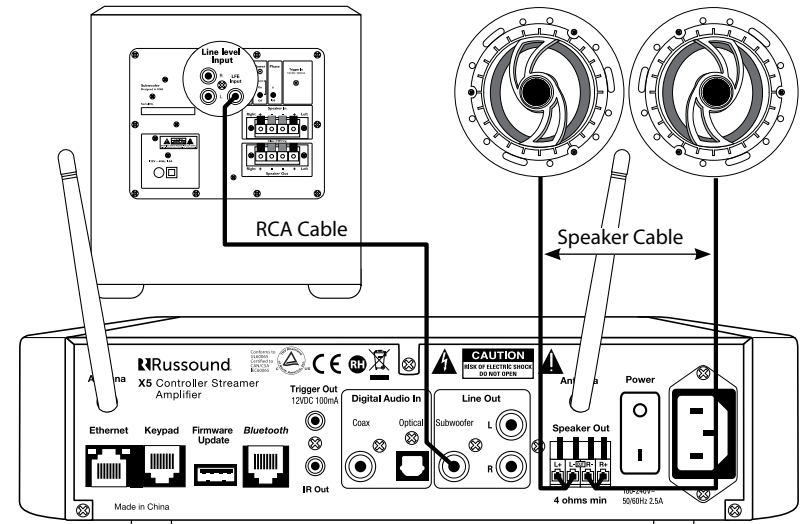
Make sure the X5 is powered off before making any speaker connections in order to prevent shorts and possible damage to your equipment.

Strip 1 to 2 inches (2.5 to 5 cm) off the end of each speaker cable jacket. Then strip 1/4 inch (0.7 cm) of insulation off each wire. Twist the speaker wire strands together so there are no strands separated from the bundle.

Lift the lever for each connection until it's fully open and insert the proper speaker wire, matching polarity for all four wires. Snap the lever down. Check to make sure there are no stray strands of wire outside the terminals. If there are, remove the wire, twist the strands together, and reconnect the wire to the terminal. Insert the modular connector into its designated output on the back of the XStream™ X5.

The XStream™ X5 has RCA line outs for expansion. Use the RCA outputs to connect A-BUS hubs, larger amplifiers or multichannel amplifiers. These connections are set as fixed or variable output through SCS software.

The X5 also offers a subwoofer output connection. This connection has a crossover at 120Hz and is used with active subwoofers when more bass is desired.



Snap Speaker Connector (detachable)



RCA Cable

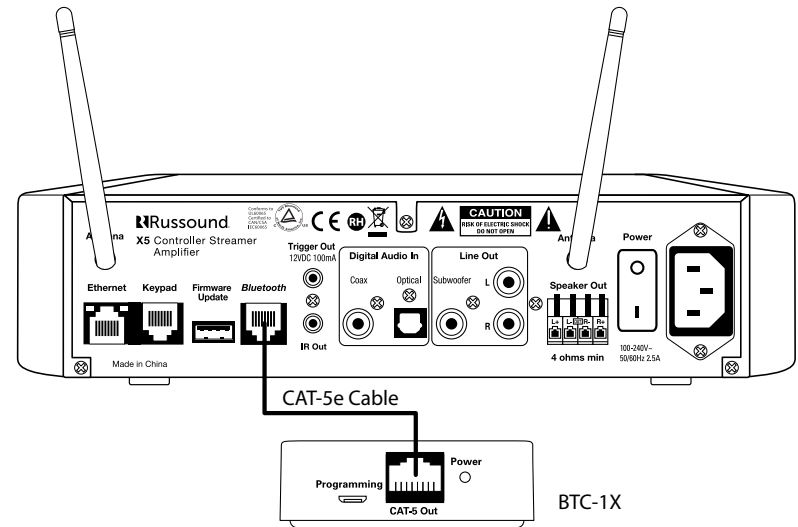
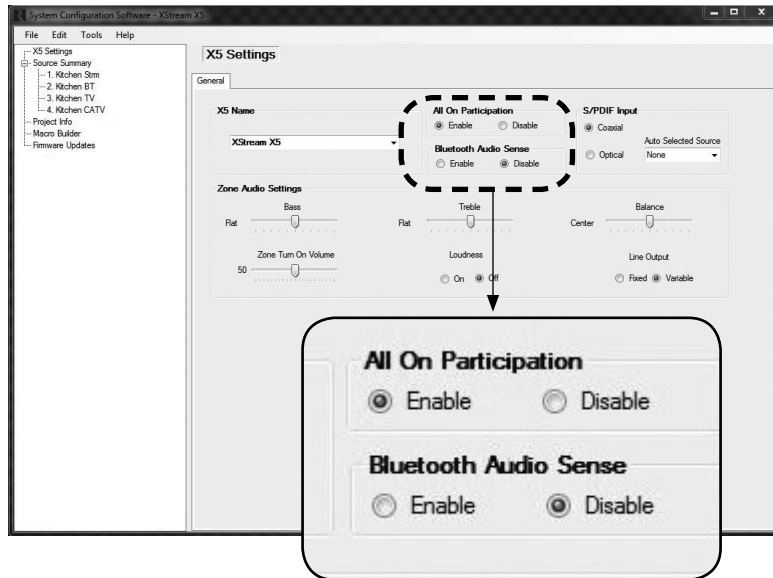
Bluetooth® Connection

The X5 supports a connection for the optional Russound BTC-1X *Bluetooth* module. The BTC-1X *Bluetooth* remote transceiver accessory enables the user the ability to wirelessly stream source content from any *Bluetooth*-enabled device to your X5. The BTC-1X connects via a single CAT5 RJ-45 terminated cable and can be located up to 300 feet away from the X5.

The *Bluetooth* connection takes up source #2. If the *Bluetooth* connection is not being used, then source #2 can be configured for a different source type.

Bluetooth Audio Sensing

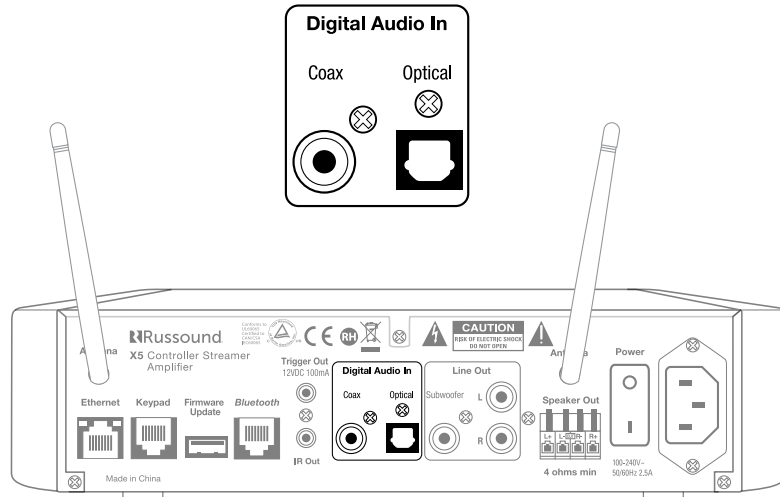
The X5 *Bluetooth* connection can be set to enable a feature that overrides the last source selected when a *Bluetooth* audio signal is sensed. This feature will require that the BTC-1X is connected. The BTC-1X must also be paired to a hand-held *Bluetooth* device. This feature can be enabled using the SCS programming tool. Open SCS and go to the X5 Settings page. Under *Bluetooth* Audio Sense, select "Enable." The *Bluetooth* audio sensing feature is disabled by default.



Cable length - 300' (CAT-5) BTC-1X to X5

SOURCE AUDIO CONNECTIONS

Connect the source output using a quality digital cable. Connect the digital audio output from the source to digital input on the XStream™ X5. Typical applications using the digital inputs are shown on the next page. The connection type is selected in SCS software.

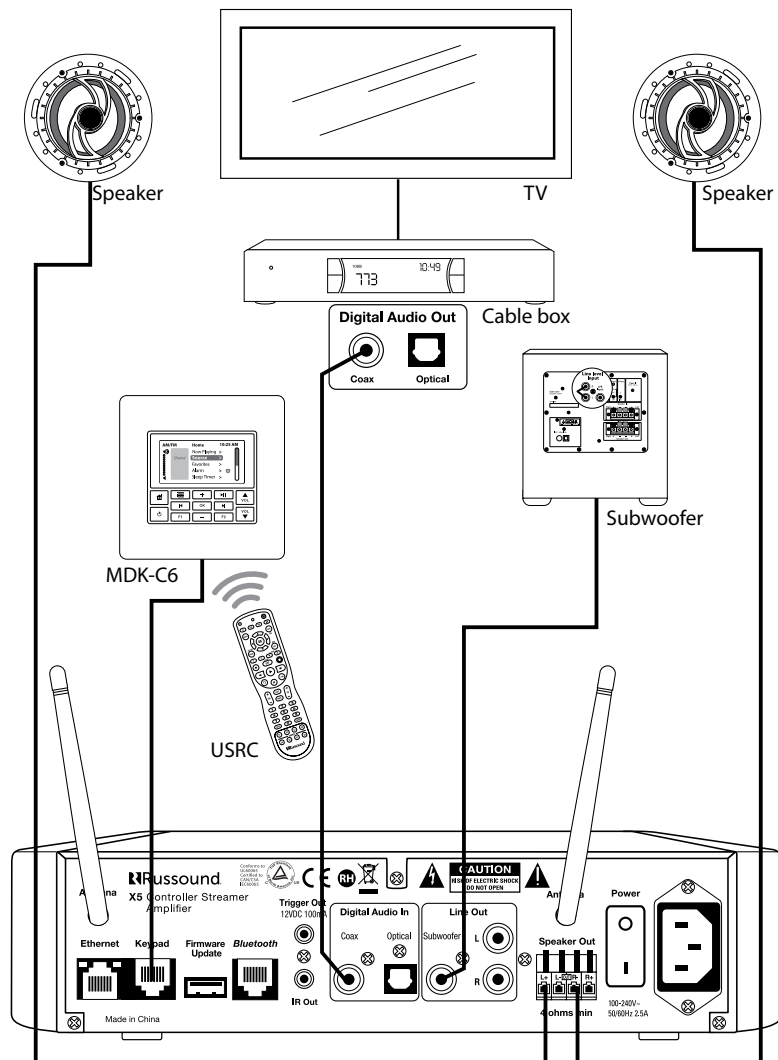


Digital input – automatic selected source enabled feature

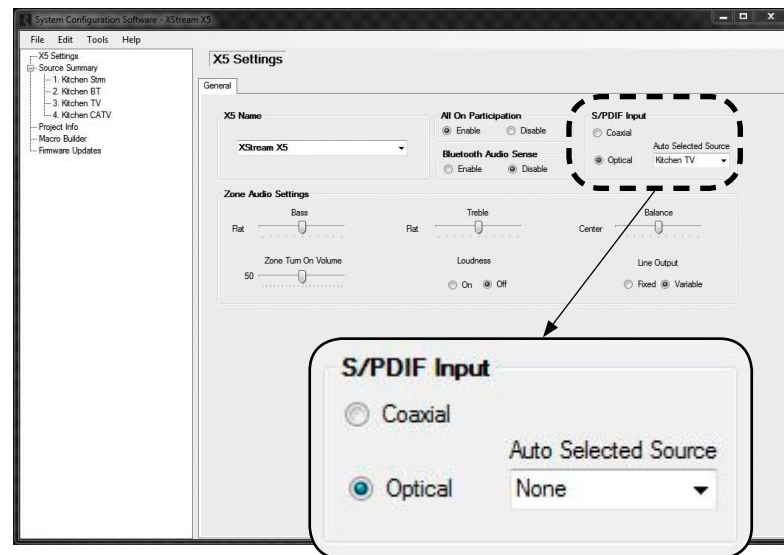
The X5 can be programmed to enable automatic switching of the digital source inputs. This feature will automatically select and play the digital source when there is an active digital connection made to the X5. The X5 zone will turn on when the TV digital signal is active. If using a keypad in that zone, the keypad will also turn on and indicate the source TV on the keypad display. If the MyRussound app is being used as the control of the X5, the app will indicate that the zone is on and the TV source is active. Additionally, if you were listening to music from one of the onboard streaming services, the X5 will automatically switch the audio to the TV when an active digital signal is present.

To enable or disable this feature, programming edits must be made within the SCS dealer programming tool. The feature is easily set up by using the wizard. Once the wizard has finished, sources connected to the X5 will be visible in the configuration tree. Choosing X5 Settings from the programming tree will open the X5 configuration settings for that zone. Once on the X5 Settings page, the S/PDIF Input configuration can be enabled or disabled. To enable the auto selected source feature, chose the connection type, coaxial or digital, and use the drop down box to highlight the source that will be used to sense the digital signal. The source chosen will be the device the keypad and the MyRussound app will show as active. In most cases this will be a TV. The X5 is an audio device only. Sources will be routed through the TV inputs and the digital audio connection from the TV will connect to the X5. (See the connection diagram on the next page)

SOURCE AUDIO CONNECTIONS



In the SCS-C5 programming software, go to X5 settings menu > S/PDIF Input configuration in order to change the source to coaxial or optical.

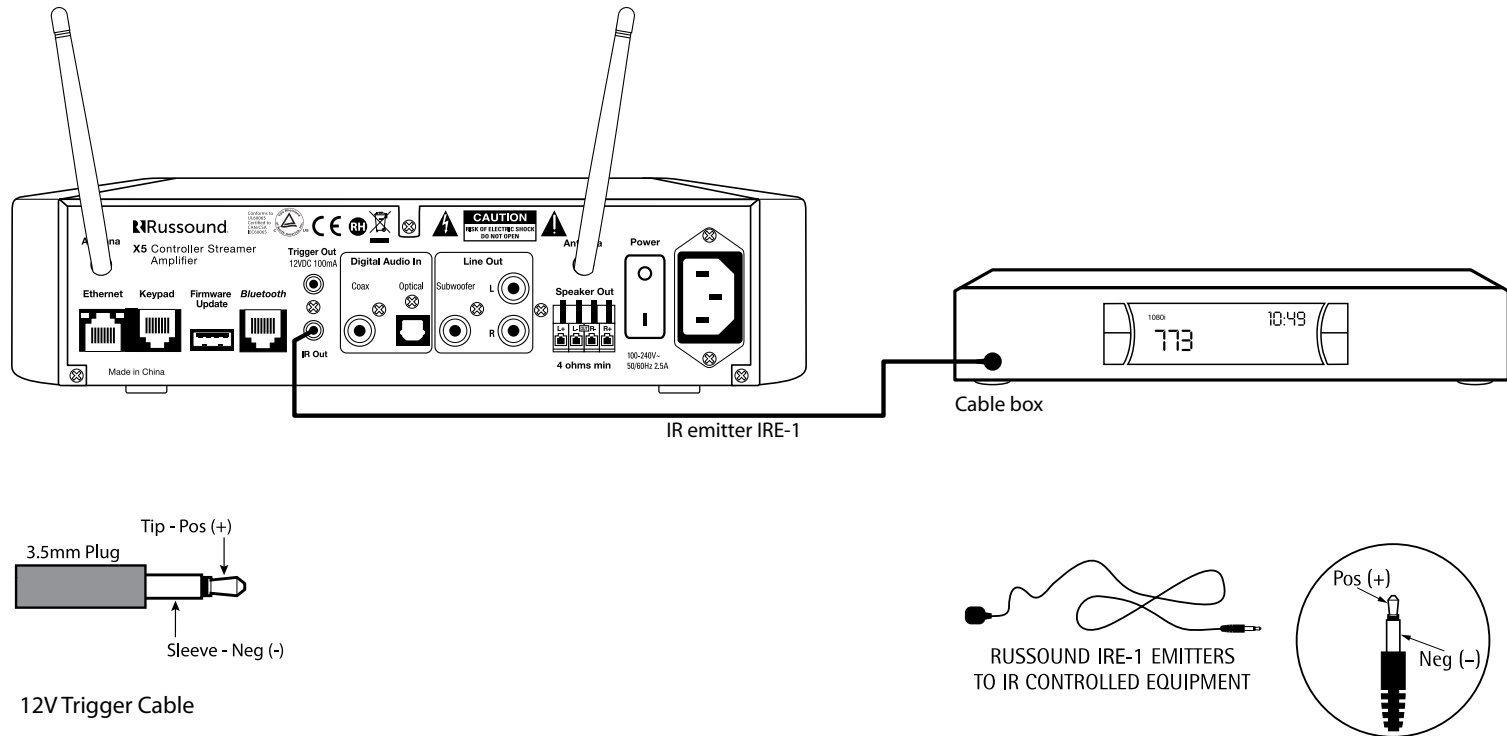


IR CONNECTION

Common IR Output

The common IR output is supported by the IR engine and programming tool in SCS. This comprehensive list of universal source codes and learning IR capabilities supports the controller features built into the X5. They are also carried by the keypad IR receiver and allows for use of the USRC hand held remote control. There is an IR receiver located on the front panel of the X5 for learning IR commands. See SCS software for more details on setting universal codes, learning commands, or building Macros to control source devices connected to the X5.

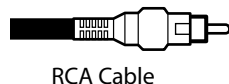
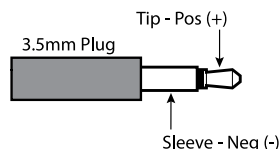
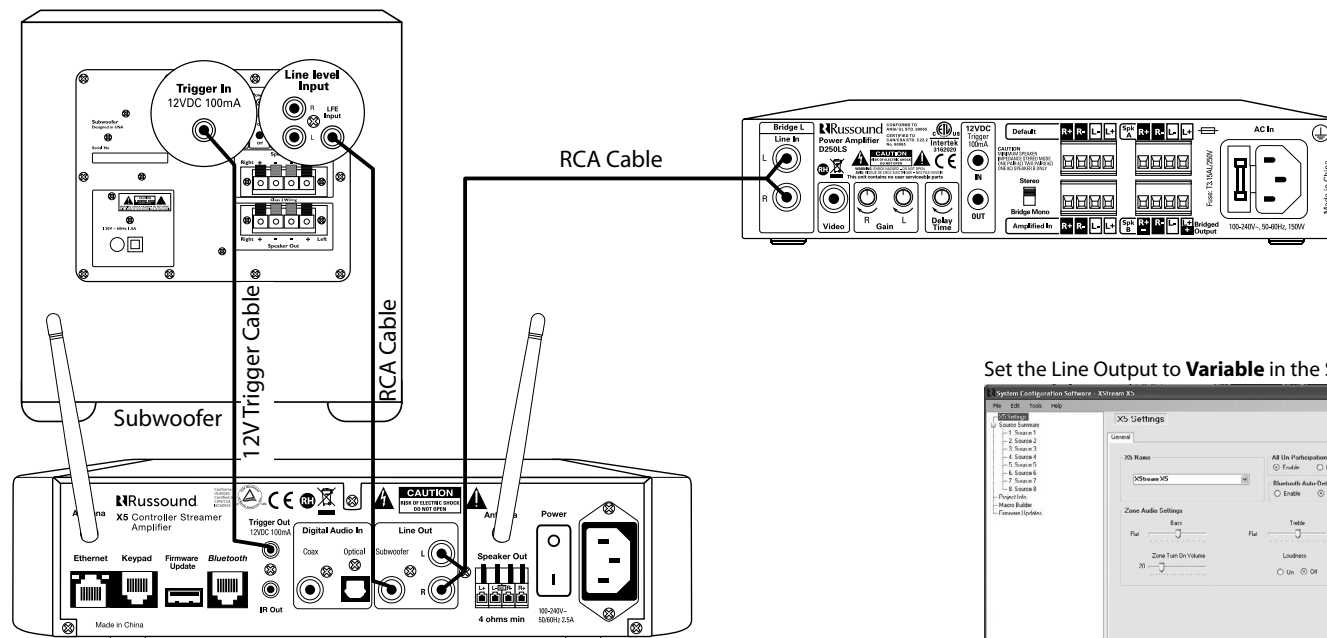
Attach the end of the included IR emitter with the 3.5mm plug to the IR emitter port. Remove the adhesive back at the other end of the emitter and attach the emitter over the source component's IR window. In order to control the connected source component with IR, the source must be selected at the keypad or the app receiving the command. See the diagram below.



There is one 12VDC trigger on the back of the XStream™ X5. The 3.5mm jack provides 12VDC 100mA when the X5 is turned on and is disengaged when the X5 zone is turned off. The trigger can be used to engage any 12VDC trigger device or component that does not exceed 100mA such as a subwoofer or

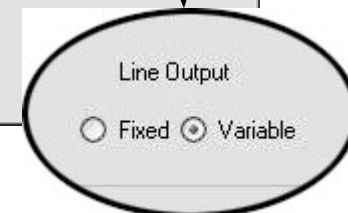
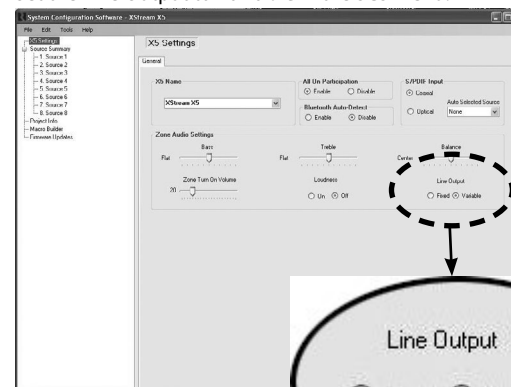
another amplifier. The connection for the trigger output is made using a two-conductor cable with 3.5mm male mono plug at each end. The tip is positive (+) and sleeve is negative (-).

Diagram below shows connection to a subwoofer and an external amplifier for greater sound output for larger rooms



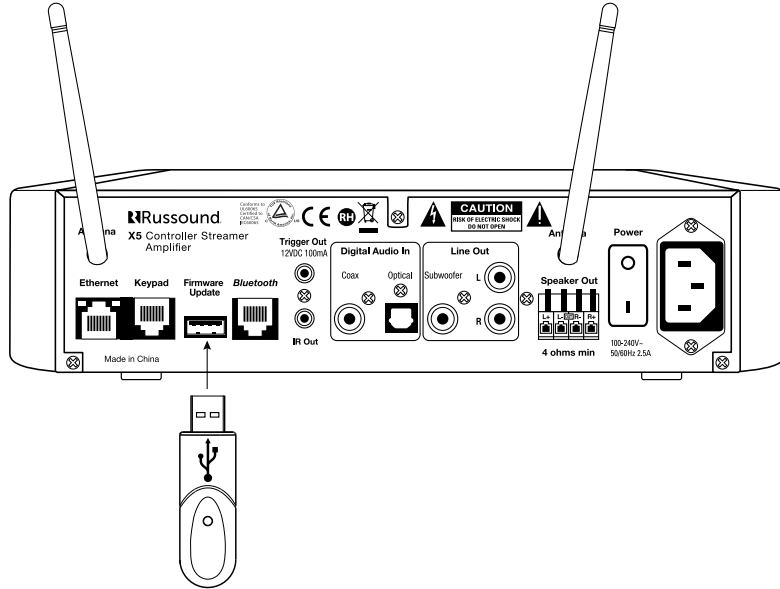
12V Trigger Cable

Set the Line Output to **Variable** in the SCS menu.



USB DEVICE CONNECTION

The XStream™ X5 has a USB 2.0 port on the rear panel for updating the firmware on the controller. The latest version of firmware is available on the Support Center. For instructions on updating the firmware, refer to the firmware update procedure available in the zipped folder of the firmware update file.



Ethernet Port

The XStream™ X5 has an Ethernet port that can be used for connecting the X5 to the network in wired mode. In addition, the Ethernet port is used to configure the X5 using the SCS-C5 configuration software over the network. The Ethernet port is also used for 3rd party integration with Russound's proprietary IP protocol, RIO. Refer to the RIO protocol document, available on the Support Center, for more details.

When the X5 is connected to the local network, the network's DHCP server assigns two IP addresses to the X5: 1 host IP address (controller) and 1 for the media streamer. The Host (controller) IP address is then entered in the SCS start-up screen to enable configuration over IP.

ETHERNET CONNECTION

The Host (controller) IP address can be seen on the MDK-C6 keypad. From the keypad's Home screen, choose Settings, then Installation. From the Installation menu, choose Network settings to see the controller's IP address and MAC address.

During the DHCP process, messages may appear in the IP address window:

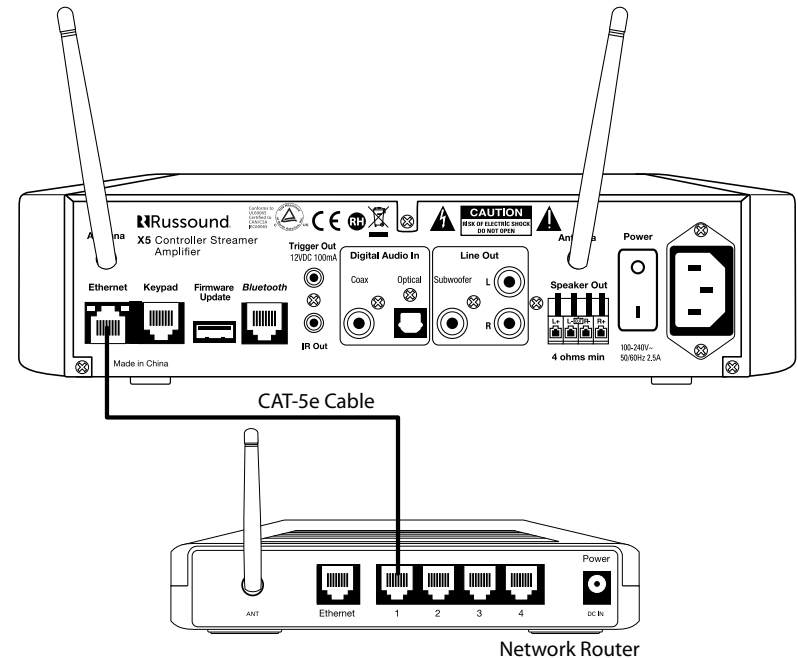
LINK DOWN - the Ethernet port is not detecting a link

DHCP WORKING - DHCP attempting to acquire an address

DHCP FAILED - DHCP was unable to acquire an address or no DHCP server

UNKNOWN ERROR - error other than DHCP failure

To restart DHCP, the Ethernet cable must be disconnected and reconnected to the XStream™ X5, or you may power cycle the controller.



Specifications

Shipping Dimensions	13.75" x 13.75" x 4" (350mm x 350mm x 102mm)
Product Dimensions	10.625" x 9.5" x 2.375" (290mm x 240mm x 60mm)
Shipping Weight	8.0lbs. (3.63kg)
Product Weight	7.0lbs. (3.14kg)
Audio Source Inputs	(2) Digital inputs, Coaxial or Optical (TOSLINK) (1) <i>Bluetooth</i> BTC-1X Transceiver Input (1) Internal Streamer
Communication Ports	(1) Rear- 1 USB 2.0 (1) Ethernet RJ-45, 10/100 Base-T (1) Keypad RJ-45 T568A standard (1) <i>Bluetooth</i> RJ-45 T568A standard
Frequency Response	20Hz-20kHz +/- 1 dB at 1W output into 8 ohms
Audio File Types	MP3, WAV, OGG Vorbis, FLAC, AAC and AAC+
Max. Audio Sampling Rate	192kHz
Fuse Rating	100-120V/T5.0A 250V US and Canada 220-240V/T3.15A 250V Europe
IR Outputs	(1) 3.5mm mono jack, tip positive, common
Keypad Outputs	(1) RJ-45 T568A standard
Power Consumption	11W 100-250VAC 50/60Hz
Ethernet	10/100 Base T
Wi-Fi	802.11 b/g
Signal to Noise Ratio	93 dB unweighted, 96 dB A-weighted
Audio Connection(s)	(1) Detachable, 4 pole, 14ga color coded speaker connector (1) Subwoofer connection, single RCA jack (1) L&R line audio output (fixed or variable).
Total Harmonic Distortion	<0.4%, 50W output into 8 ohms 20Hz-20kHz
Trigger Output(s)	(1) 12VDC 100mA
Watts per channel	50W RMS x 2

Most common problems with the X5 can be solved by performing the steps below.

- Make sure the power switch is in the On position. The power switch is in the rear panel of the product.
- Follow the quick guide instruction sheet to initialize the XStream™ X5. Refer to the LED Diagnostic guide for more information.
- Cycle power by pressing the power switch, waiting 10 seconds, and then pressing the power switch again.
- Check connections from the keypads and speakers to the controller.
- If the keypad doesn't respond to commands, ensure the OS update jumper on the rear of the keypad is in the RUN position.

Networking Best Practices

Some of the most common problems can be caused by network configuration and out-of-date firmware. Improper network configuration can prevent the X5 (or multiple X5 zones) from connecting and communicating on the network.

The first step for troubleshooting is to check networking connections and power cycle the equipment to check for proper communication.

Keep connections as simple as possible and connect only the X5 to a dedicated router (wired or wirelessly). Once communication is confirmed, connect other devices back onto the network.

A dedicated wireless 802.11n or better router is recommended.

The reason for this is that ISP supplied modem/router combination devices may have incompatible settings that can cause issues with the X5 connecting or communicating across the network. It is recommended to not use these modem/router combination devices, because the end user may not have access to all services of the device. The ISP may have sole control over the device settings and send updates to reset, reinitialize, or replace the device at their discretion.

Check for **firmware updates** available for your Russound equipment to make sure the X5 is up-to-date to take advantage of any additional features and supported services. From the SCS-C5 programming software: Tools menu > System Check.

The X5 GUI can be accessed via a web browser by typing in the X5 Host name. If this fails, it could be an issue with Netbios (WINS) port 137 on the network. Alternatively, the IP address of the Russound equipment can be used to access the GUI.

Use a network discovery and IP scanning application that can assist to better understand the network, such as FING. <http://overlooksoft.com/> FING is free and available for iOS and Android and can assist in identifying devices on the network and if there are any IP addressing conflicts.

Router Configuration:

A few routers may need additional configuration to prevent incompatibility or intermittent connection issues. Access the router and check user accessible settings that enable support for **Multicast** or **IGMP** and enable the filters or check for options that are actively filtering these protocols and disable them. For example, if a customer can connect to a website as well as the MCA's Admin page (Unicast) but a Multicast stream like Airplay is intermittent or fails, you will

need to check these settings. Check for other options that could have an effect on communication: Options such as **UPnP** should be **enabled**. Options such as **IGMP Proxy**, **IGMP Snooping**, **Multicast Filtering** or **WMM Proxy** should be **disabled**.

Glossary

Multicast: The delivery of a message or information to a group of destination computers simultaneously in a single transmission from the source.

Unicast: The delivery of a message or information to is sent from one point to another point An example would be connecting to an IP address of a URL such as www.google.com.

IGMP: Internet Group Management Protocol is an integral part of IP Multicast and is used for one-to-many networking applications such as online streaming audio and video, gaming, and allows more efficient use of resources when supporting these types of applications.

WMM: Wireless Media Management is designed to support consumer and corporate applications and works with 802.11a, 802.11b and 802.11g. The specification provides basic prioritization of data packets based on four categories - voice, video, best effort and background.

UPnP: Universal Plug and Play uses Multicast and allows media servers and streaming devices to communicate.

Streaming SiriusXM and Pandora.

Q: Why does the stream say “Are you listening?” or stops playing after 90 minutes?

A: Online services often will send out a popup notice to see if you’re still listening. This happens every 90 minutes for SiriusXM. If you see this message, just click the OK button to continue listening. If you don’t click through, the stream will shut down within 5 minutes of the alert. This will cause the keypad to display “Stopped”.

https://listenercare.siriusxm.com/app/answers/detail/a_id/3641/related/1

<https://help.pandora.com/customer/portal/articles/24252-%22are-you-still-listening-%22>

Q: Why do I get a “Stopped” message when I try listening to the X5?

A: If a service is interrupted or has timed out the X5 will display

“Stopped” which will require you to then press the Menu button to select a streaming service to play to continue.

Q: Why do I get a “Stopped” message on the X5 when I try to listen to my account on another device?

A: The Stopped message is also caused by multiple devices using the same username and password. Most streaming services like Sirius XM and Pandora can be used on more than one device - but only on one device at a time. So chances are, you’ve shared your login with friends or family and it’s currently being used in another location. The most recent person to log in will be the one who is able to listen to the stream. https://listenercare.siriusxm.com/app/answers/detail/a_id/3642/related/1

<https://help.pandora.com/customer/portal/articles/1392219-simultaneous-streaming>

Q: Why does the channel I’m listening to keep closing down?

A: Re-buffering is something all live Internet streaming experiences. It’s mostly due to your Internet connection speed (56K or lower) or excess network traffic. You could try waiting a few minutes or accessing the channel later when there might be less traffic if it is an ongoing issue check how your X5 is connected to the network. Reference the Troubleshooting guide for best practices.

https://listenercare.siriusxm.com/app/answers/detail/a_id/3611/related/1

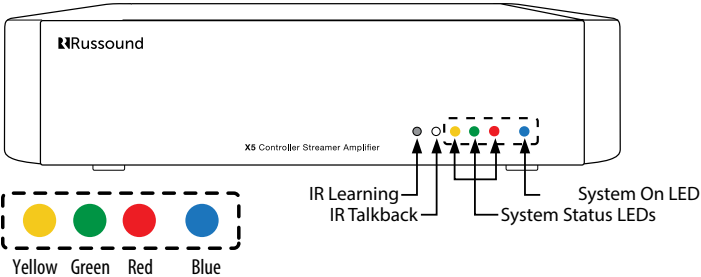
Q: Can I get multiple logins for online listening?

A: Some of the popular services, SiriusXM and Pandora, limit accounts to just one login at a time, per subscription. If another member of your household is sharing your login and you both like to listen often, you may want to consider adding another subscription. For SiriusXM users, you may be eligible for a reduced rate when you add another SiriusXM Internet Radio subscription to your existing account. You can add a SiriusXM Internet Radio subscription using their Online Account Center

https://listenercare.siriusxm.com/app/answers/detail/a_id/3615/related/1

<https://help.pandora.com/customer/portal/articles/1392219-simultaneous-streaming>

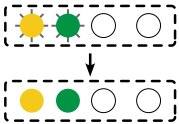
X5 LED DIAGNOSTIC CHART



Booting Solid yellow LED.	
Access Point Solid green LED and solid yellow LED. Yellow LED may initially blink for a short period of time.	
Ready Solid green LED.	
Zone On Solid blue LED.	
Firmware Update Blinking green LED	
Firmware Update During Initialization Solid yellow, blinking green LED.	
Network Error Blinking yellow LED.	
Access Point - Error Solid green LED with yellow LED blinking continuously. May require reinitializing access point mode.	
Error Codes All LEDs can be used to display various error codes. Error codes are derived from the number of times each LED blinks.	

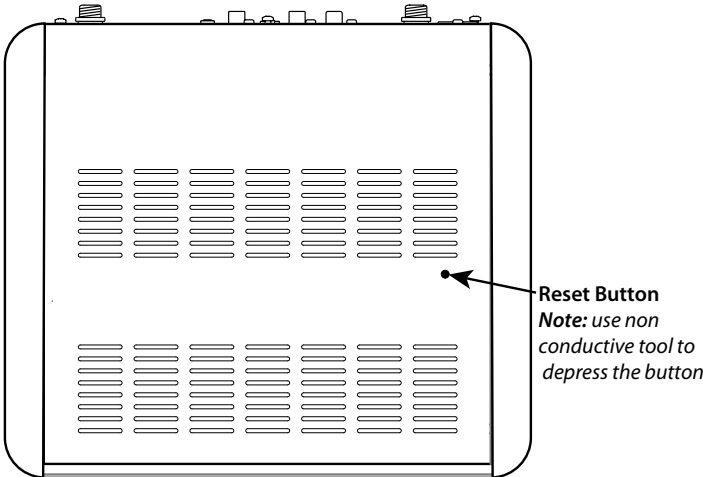
Reinitializing Access Point Mode

Depress the button on the bottom panel for 2 seconds. Yellow and green LEDs will blink 6 times then go solid. If the Ethernet cable is connected, the Red LED will blink as a warning that the X5 will reboot in wired mode. See pg 8-10 for "Making a wireless connection"



Factory-Initialization

Depress the button on the bottom panel for more than 10 seconds. The red LED will go solid while the X5 is initialized to factory defaults. The device will then enter Access Point mode. All settings and account information are deleted.



X5 Bottom Panel

Limited Warranty

The Russound XStream X5 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.



X5 Controller Streamer Amplifier Installation Manual

The Wi-Fi CERTIFIED Logo is a certification mark of the Wi-Fi Alliance. The Wi-Fi CERTIFIED Logo is a registered trademark of Wi-Fi Alliance.

The Spotify software is subject to third party licenses found here: www.spotify.com/connect/third-party-licenses

SiriusXM Internet Radio Service is available in the USA, PR or Canada. SiriusXM Internet Radio subscriptions are sold separately and are governed by the Sirius Terms and Conditions (see www.sirius.com). Be sure to read this agreement before you purchase your subscription. Sirius, XM and all related marks and logos are trademarks of Sirius XM Radio Inc. and its subsidiaries. All rights reserved.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Russound is under license. other trademarks and trade names are those of their respective owners.

AirPlay works with iPhone, iPad, and iPod touch with iOS 4.3.3 or later, Mac with OS X Mountain Lion, and Mac and PC with iTunes 10.2.2 or later.

AirPlay, the AirPlay logo are trademarks of Apple Inc., registered in the U.S. and other countries.

This product includes some software components that are licensed under the General Public License (GPL). Source code for GPL components is available upon request.

©2015 Russound. All rights reserved. All trademarks are the property of their respective owners. Specifications are subject to change without notice.

Russound is not responsible for typographical errors or omissions.

Russound, Inc.

1 Forbes Road, Newmarket, NH 03857

tel 603.659.5170 • fax 603.659.5388

email: tech@russound.com www.russound.com