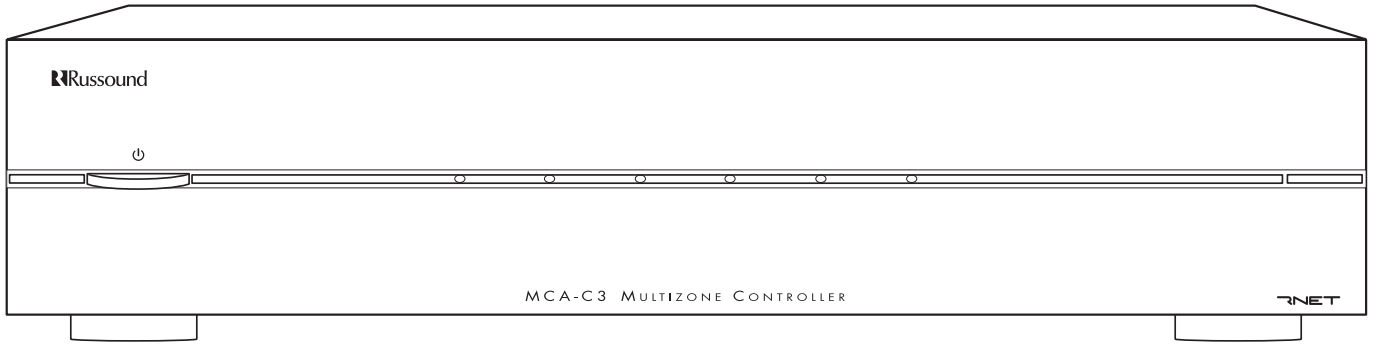
Russound®



MCA-C3

6 Source Multizone Controller Amplifier
User and Installation Manual

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

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

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Safety Instructions

1. Read Instructions - All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the appliance in the operating instructions should be adhered to.
4. Follow Instructions - All operating and user instructions should be followed.
5. Water and Moisture - The appliance should not be used near water; for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.
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. To remove all power (supply mains) from the appliance, remove the plug from the wall outlet.
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.

Conforms to UL60065
Certified to CAN/CSA IEC60065

NOTE: EU Standby Power Requirements are met when the MCA-C3 controller is configured with six (6) MDK-C5 keypads attached.

Grounding an Outdoor Antenna

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

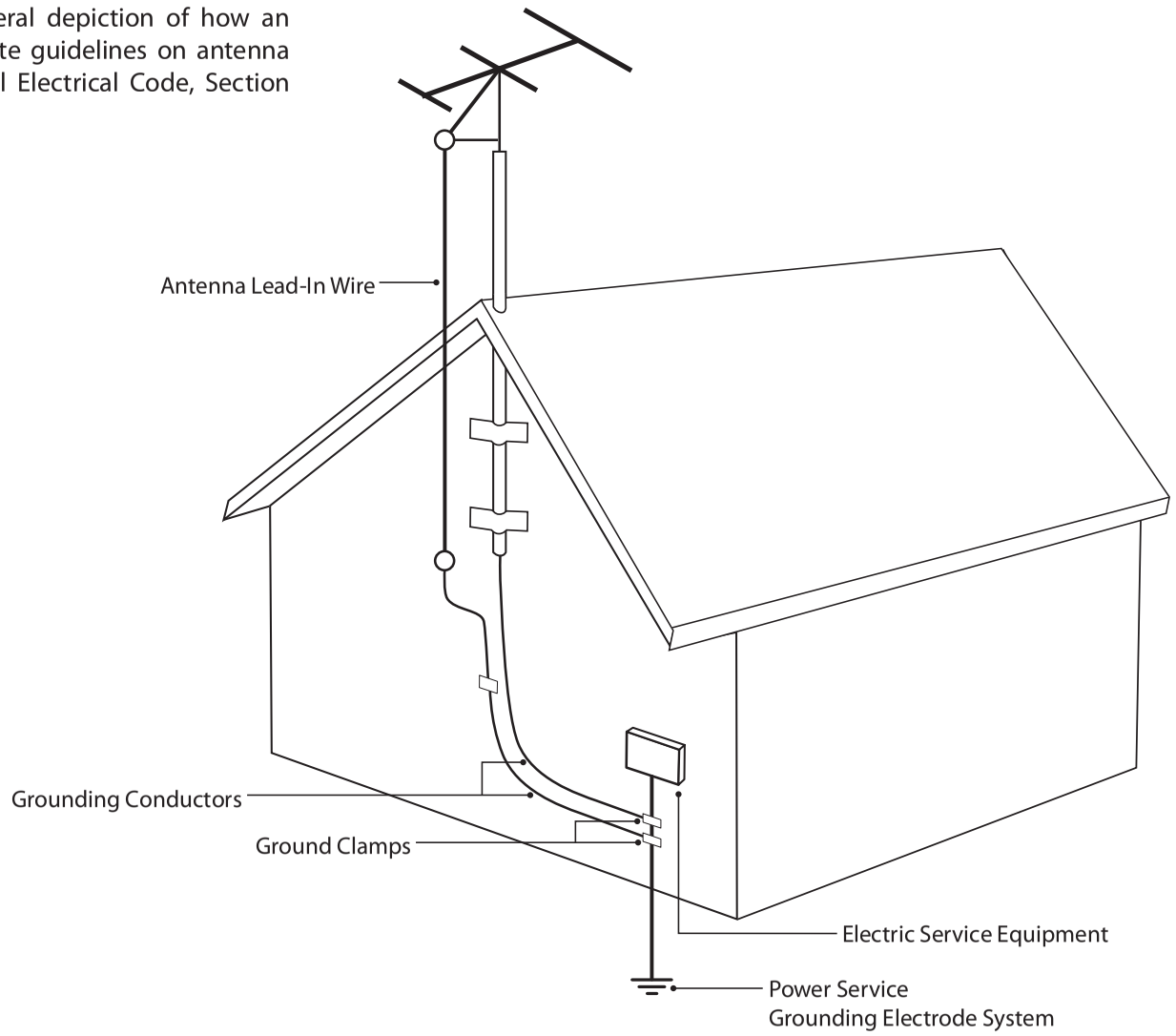


TABLE OF CONTENTS

Safety Instructions 2
Product Overview 5
Controller Illustrations 6
Keypad Features 8
Keypad Usage 9
Remote Control Illustration 11
Installation Overview 12
Installation Guide 13
Keypad Rear Illustration 14
Keypad IR Connection 15
Color Plate Conversion 16
Controller / Keypad Connections 17
Speaker Connections 18
Source Connections 19
IR Connections 20
Multiple Controller Installation 21
Trigger Connections 22
Additional Ports and Antenna Connections 26
SCS-C5 Configuration Software 27
System Start Up 28
Remote Control Programming 29
Remote Control Device Codes 31
Technical specifications 37
Warranty 38

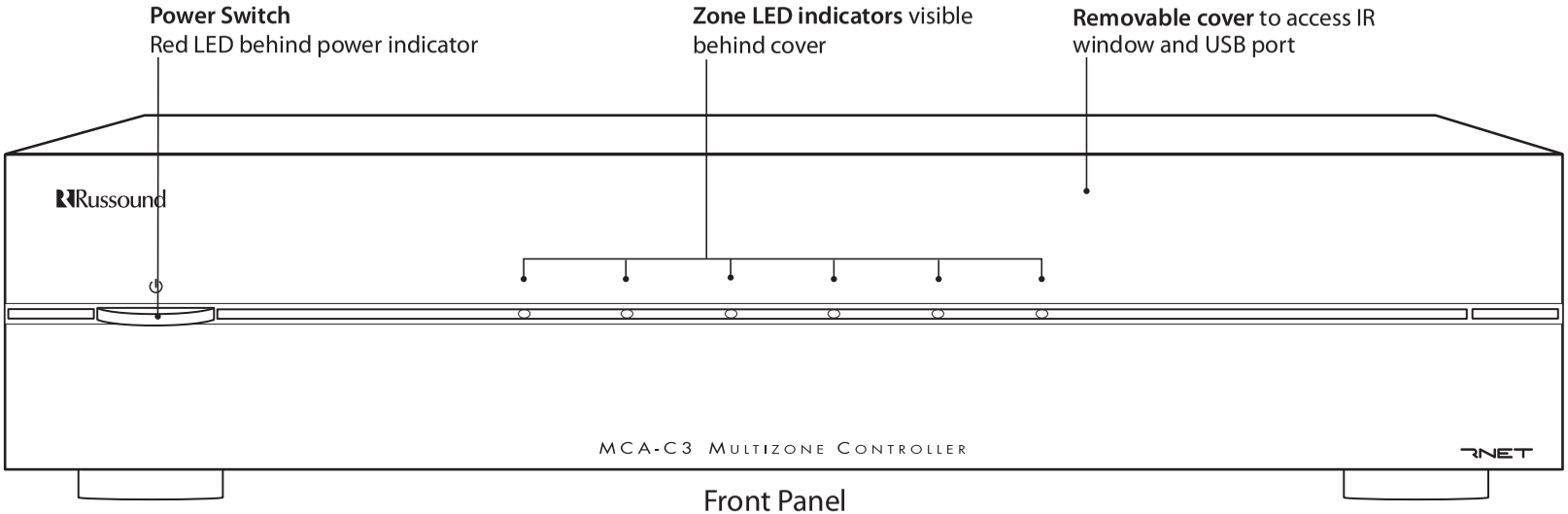
Thank you for choosing the Russound MCA-C3 multizone controller amplifier to enhance your home with multiroom audio.

The MCA-C3 caters to homeowners who want control over their multiroom audio systems with such capabilities as infrared (IR) tools to manage the system from anywhere in the house. Six source inputs, simplified programming, and user adjustable sound controls make listening to music throughout the home easier than ever.

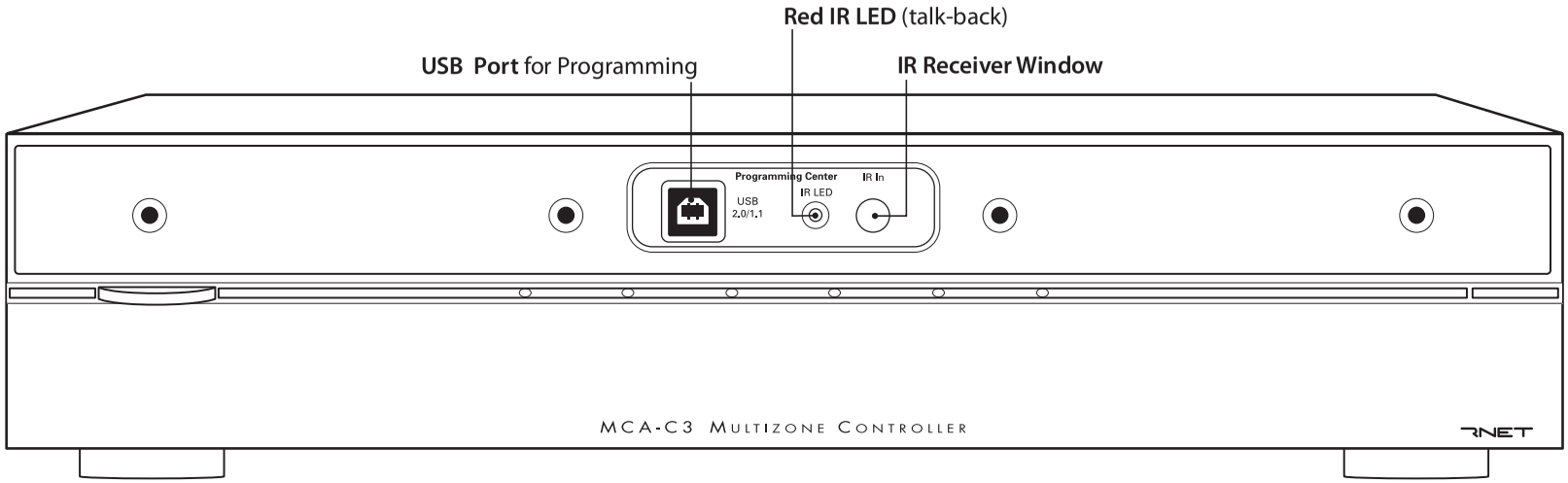
Key features include:

- 6 sources delivered to up to 6 zones for sharing music throughout the home
- Scalable to 36 zones by connecting up to six controllers
- Incorporates RNET smart sources, transmitting metadata (song, artist and other information) for display on the keypads
- A built-in AM/FM tuner with RDS support (source 1 optional use)
- Supported user interfaces are MDK-C5 keypad and UNO-TS2 touchscreen
- EuP compliant for low power standby mode
- Audio paging with a DC voltage trigger input
- Party mode, Do Not Disturb, and source / zone linking options
- Alarm clock and sleep timer
- A remote control with simplified programming and control via intelligent IR learning capabilities for quick setup
- Ethernet connectivity for programming and control
- Front panel USB port for programming ease
- SCS-C5 Configuration software for PC programming
- Rear panel RS232 port for integration with third party control systems
- Source power management with line level auto-sensing
- Twelve channels of analog amplification rated at 20 watts per channel
- Line level outputs for zones 1 and 2
- Six zone specific 12VDC trigger outputs
- Routed IR source control outputs for each source, and one common IR output
- Home Theater trigger in/out
- Controller Wake On LAN support

Important Note: SCS-C5 Configuration software is necessary to program the MCA-C3 system. It can be downloaded from the Document Center at www.russound.com.



Front Panel



Front Panel with cover removed

Zone 12V Triggers
12VDC 100ma outputs ready when corresponding zone is active

Home Theater 12 VDC Trigger
Activates source power management when sharing sources with home theater

Controller ID Switch
Set ID for multiple controller configurations or firmware updates

Serial Interface
RS232 port for firmware updates and communication

Page 12VDC Trigger
Accepts paging device input

AC Voltage Switch
Select appropriate voltage

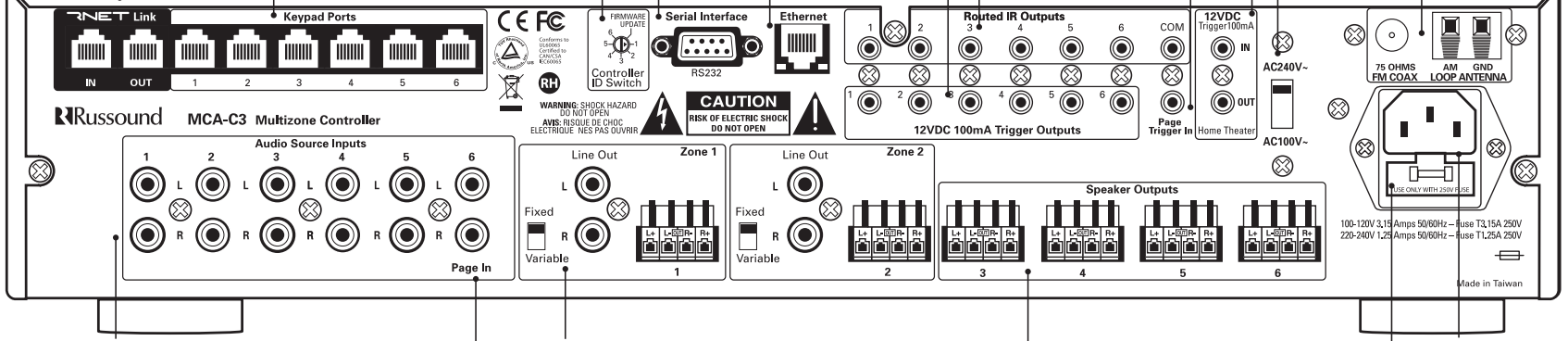
RNET Link - Links multiple controllers and RNET sources

Keypad Ports - RJ45
Connections for zone keypads

Ethernet Port
For programming and control

IR Outputs
6 routed, 1 common

AM/FM Antenna
Antenna connections for internal tuner



Audio Source Connections
Signal sensing stereo line level inputs

Page Audio In
Source 6 configurable as paging audio input (right channel only)

Line Level Outputs
Can be set Fixed or Variable for zones 1 and 2 (always Hot when set to Fixed)

Speaker Outputs - Connect 8 Ohm speakers for each of the zones

AC 120/240V Input
Detachable grounded power cord connection

Fuse Holder
Holds replaceable fuse for AC input connection

Rear Panel

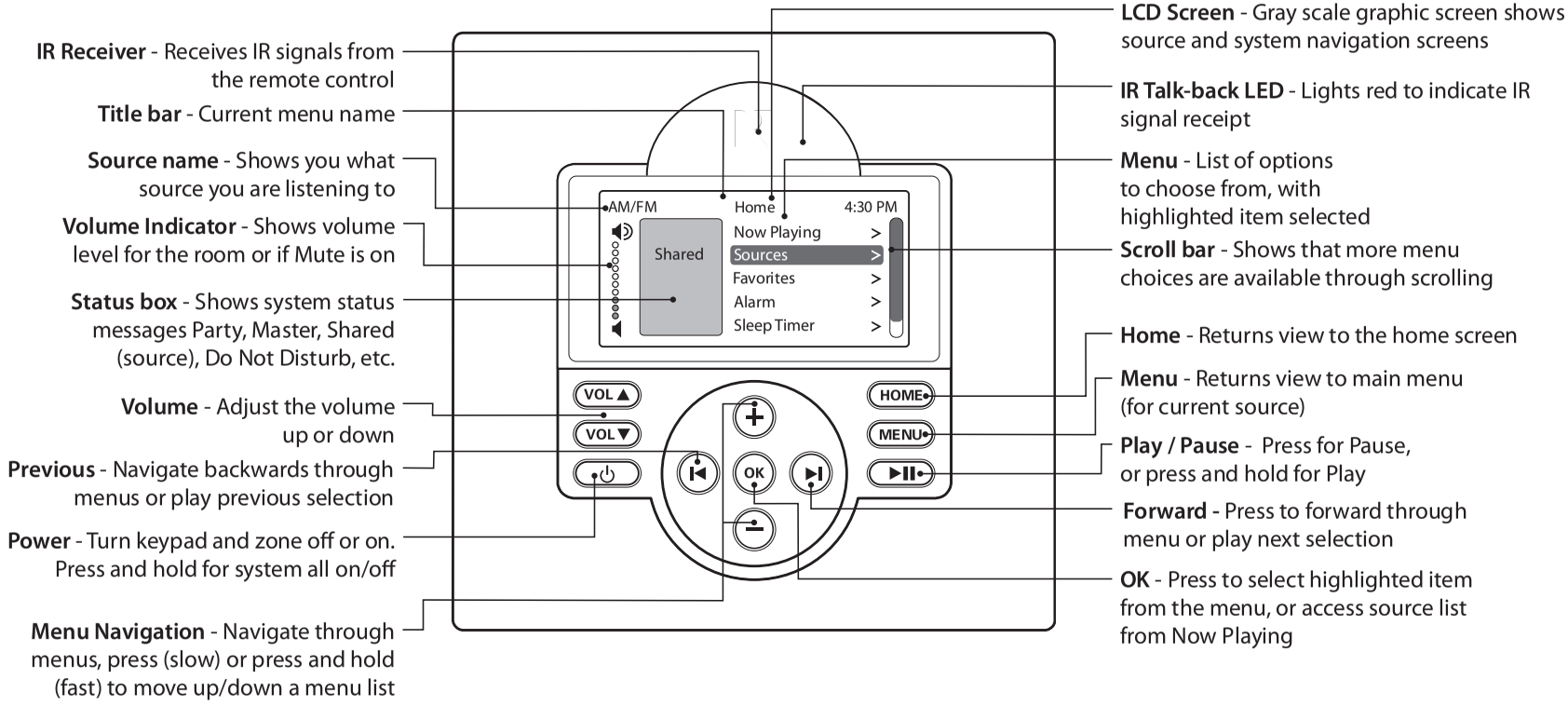
MDK-C5 Keypad

The MDK-C5's buttons and menus allow the user to easily find and control music sources and to make changes to system settings and room audio levels.

Six backlit oblong buttons access power on/off, music play/pause, volume up/down, and menu shortcuts. The OK button in the center activates a menu choice and the navigation buttons allow you to move through menus and lists. All music sources, audio adjustments and system settings are arranged in menus and lists. The navigation buttons also act as source controls to select next / previous song, etc., depending upon the type of source.

The keypad's home screen, buttons and navigation buttons are described below.

The main menu (Home) options include: Now Playing, Sources, Alarm, Sleep Timer, Party Mode, Do Not Disturb, and Settings. The Settings menu includes the audio, clock, display, and installer options. The audio settings include bass, treble, balance, loudness, and turn on volume.



MDK-C5 Keypad Functions

Basic Operation

Turn on the zone - Press the power button on the keypad or press power on the SRC-C5 remote control to turn on the zone and hear music. The zone will default to the last playing source before being turned off. Press and hold the power button (when ON) to turn on all the keypads.

Turn off the zone - Press the power button on the keypad or press the power button on the SRC-C5 remote control to turn off the keypad and music. Press and hold the power button (when OFF) to turn off all other keypads.

Volume adjustments - Press the Volume up/down buttons on the side of the keypad, or press the VOL +/- button on the SRC-C5 remote control.

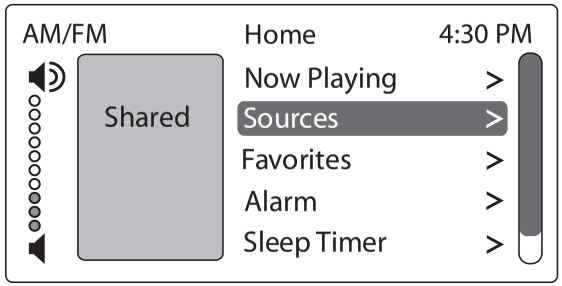
Mute Audio - Press the Mute button on the SRC-C5.

Main Menu - Sources

From the home screen, select "Sources." A list of available audio sources appears. Select a source, or press a numbered "Source" button on the SRC-C5 remote control.

Once selected, choose music from that source. Each source has its own menu and screens. Main menus list what is available: channels, genres, playlists, songs, or artists.

Shared - When you see "Shared" on the screen, what you are listening to is also playing in another room. If you change the selection (song, channel, playlist) *on that source*, the change will also happen in the other "Shared" room.



Main Menu - Favorites

Favorites - Save a source or a radio station/channel as a favorite.

Add new - Tune to the music source you want to save as a favorite. From the Favorites menu, select "Add New." Name the favorite using the +/- buttons to move through the alphabet and the forward button to move to the next character. Press the OK button to save.

Edit name - Choose the favorite to rename and use the +/- buttons to scroll through the alphabet and the forward button to move to the next character.

Delete favorite - Choose the favorite to be deleted, press the OK button to delete.

Main Menu - Alarm

Set the keypad as an alarm clock and wake up to music. From the home screen menu, scroll to and select "Alarm" for the following options:

Alarm on/off - Activates alarm on or off. If an alarm is set a clock icon will appear on the keypad display.

Wake time - Set the time for the alarm to go off.

Wake to - Choose the music source to wake to.

Choose days - Set the alarm to go off on weekdays, all days or just once.

Set snooze - Choose the interval (5 to 30 minutes) before the alarm goes off again.

Alarm level - Set the volume of the alarm.

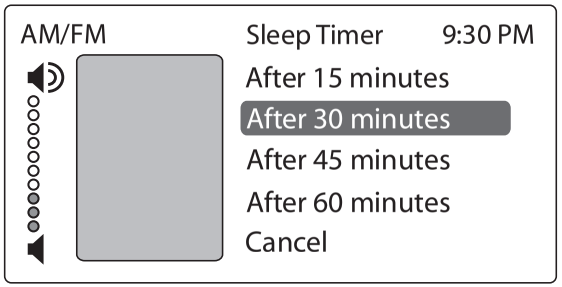
How to:

Turn off active alarm - Press the power button on the keypad or SRC-C5 remote control.

Snooze - Press the pause button on the keypad or SRC-C5 remote control.

Main Menu - Sleep Timer

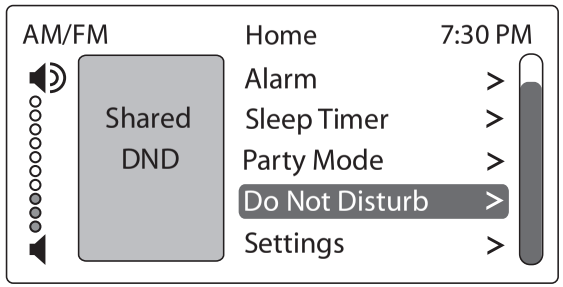
You can set the timer so the zone turns off in one of the following increments: 15, 30, 45, or 60 minutes.



Main Menu - Set Party Mode or Do Not Disturb

Party and Master - The keypad that shows Master has started a "party" and keypads that show Party are "attending." All rooms are listening to the same music, and only the Master can change the music. Volume control remains independent.

Do Not Disturb - Someone in another room has chosen a source and locked out anyone else from changing it. That room also won't be disturbed by paging or a doorbell chime.



Main Menu - Settings

Audio - From the home screen, scroll to and select "settings," and choose "audio settings." You'll see items to adjust, such as bass, treble and balance. Each selection has its own screen and shows levels for real-time adjustments.

Clock

Set Time - From the Clock menu, select "Set Time." Press the +/- buttons to move through numbers. Press the |< or >| buttons to move the cursor and press OK to save.

Set Date - From the Clock menu, select "Set Date." The date format is month/day/year. Press the +/- buttons to move through numbers. Press the |< or >| buttons to move the cursor, and press OK to save.

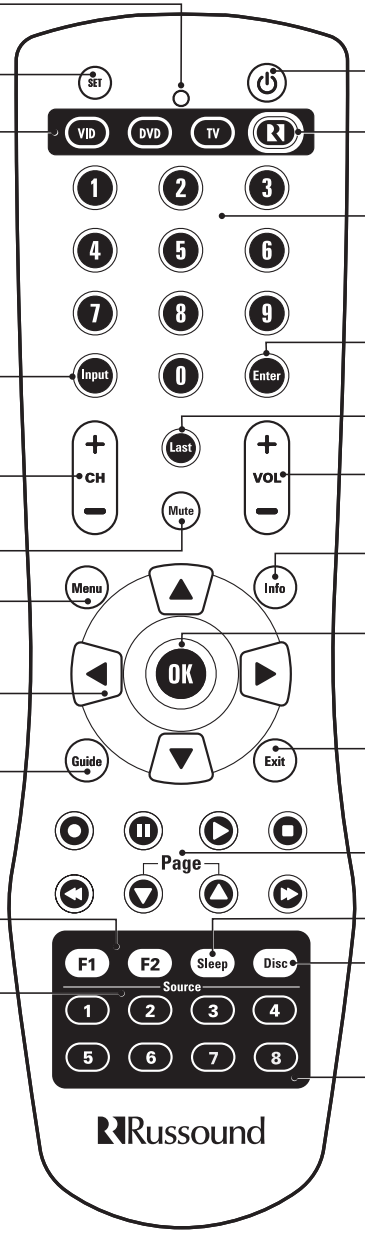
Clock Format - From the home menu, select "Settings," then "Clock." Choose "Clock Format," and select 12 hour (AM/PM) or 24 hour (1200) format.

Display - Set the contrast and brightness for the keypad display. Use the buttons to move the cursor to the desired level.

Installer Options

IR Enable/Disable - The default is Enabled. If an external IR receiver is used, the keypad IR receiver should be disabled. From the main menu, select "Settings," then "Installation," then IR Enable/Disable. Select "disable" and exit back to the menu.

Diagnostics - The MDK-C5 provides firmware version information for Controller 1 and the keypad. Network information such as Controller IP and MAC address are also provided.



LED - IR Indicator.

Set - Program sequences

VID / DVD / TV - Use these keys to select a local device.

Input - Switch the TV's, VCR's, SAT's or DVD's input to view TV or video programs. Without a local device selected, toggles through sources on keypad.

Channel - Change channels sequentially - up or down.

Mute - Press to turn the sound off or on in the zone.

Menu - Display the menu for the selected device.

Cursor Keys - Move the cursor in the menu screens of the selected device.

Guide - Display the program guide for the selected device.

Programmable Favorites - Select and save favorite source or music.

Source Keys - Use these keys to select specific sources on the keypad and to set which source the remote will control.

Power - Turn the selected source on or off.

Russound Zone Control - Activates control of Russound system controller and keypads, and its connected sources.

Numeric Keys - Directly enter channels (e.g. 09 or 31).

Enter - Press to choose the highlighted menu option of selected device. May perform "OK" function for devices.

Last - Press to recall the last-viewed channel.

Volume - Raise or lower the sound level of the zone being controlled.

Info - View the current channel and program information.

OK - Press to choose the highlighted menu option of selected device. May perform "Enter" function for devices.

Exit - Exit the selected device's menu, guide, or program without making a menu selection.

Control Keys - Skip backward, rewind, fast forward, skip forward, record, stop, pause, or play tracks on source device.

Sleep Timer - Access the sleep timer function on the keypad.

Disc - Direct disc selection on the appropriate device.

Overlays - There are several optional source button overlays included. Review the source configuration and match the system programing and source placement to the chosen overlay (if used). Peel the backing from the rear of the overlay and fit it over the source button block on the SRC-C5 remote.

Ventilation Requirements

Important: The MCA-C3 should be situated so that its location or position does not interfere with its proper ventilation. Do not block vents above or to the sides of 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 MCA-C3 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.

Installation

The MCA-C3 controller can be rack mounted or placed on a shelf in an equipment rack. The controller occupies two rack spaces with feet removed.

The controller can be installed in an equipment rack using the included rack-mount ears and hardware to attach the ears to the controller chassis.

Up to six controllers can be connected for up to 36 zones on the system.

Electrical Power

The MCA-C3 operates at 100-120VAC ~60 Hz or 220-240VAC ~50 Hz. Voltage is selected by the voltage switch on the rear panel and incorporates the appropriate detachable power cord. It is recommended that the MCA-C3 and the source equipment be plugged into a dedicated 20-amp circuit. A power line conditioner can reduce interference problems caused by noise found in some electrical systems.

The power switch for the unit is on the front panel.

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.

Power Management and EU Standby Power Requirements

The MCA-C3 controller meets EU Standby Power requirements by using power management to turn off the controller and sources.

After the last zone is powered off and the Home Theater trigger input is inactive, the sources are powered off after five minutes. Then if there is no activity, the home theater trigger turns off in another minute. Finally, the controller is placed into standby after another minute. Standby power consumption is less than 1 watt.

Any keypad activity will wake the system from standby. In addition, Wake On LAN may be used to wake the system from standby.

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.
- For multiple controllers, the controller ID must be set with the rotary switch on the rear panel. Each controller must be set to a unique number before powering connected controllers.

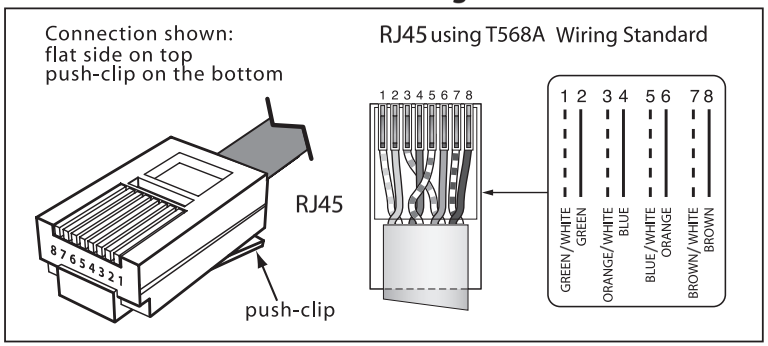
Important: The necessary software (SCS-C5) to program and configure the system is available via download from the doc center at www.russound.com. With your laptop, you can configure the system and name all of the zones prior to connecting with the MCA-C3 controller. See Section on page 27 for items to be programmed with the software.

Wiring

Route CAT-5e cable between the keypad locations and the controller. Terminate all CAT-5e cables with an RJ45 connector using the T568A wiring standard configuration. Utilize a UL/CSA approved electrical box at the keypad (double-gang at least 32 cu. in.) and controller locations. Using connector specific wall plates at the controller location will better organize all of the incoming cables. Route CAT-5e wire from the electrical box to each keypad location, with runs not to exceed 250 feet. Label the wires at both ends with the zone and location.

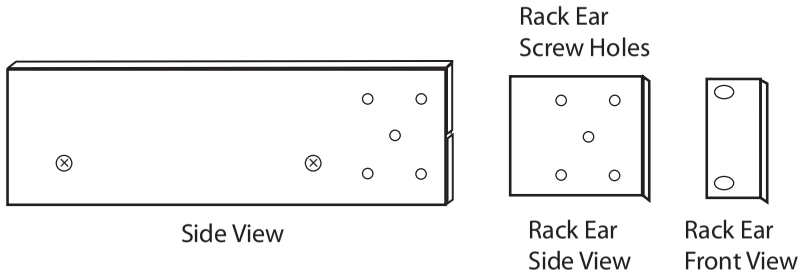
Route standard 4 conductor speaker wire to each speaker location. Each speaker connection requires an 8-ohm load and will provide 20 watts per channel. Standard 16-gauge 4-conductor stranded speaker wire can be run up to 125 feet; 14-gauge wire can be run up to 250 feet.

RJ45 CAT-5 Wiring Scheme

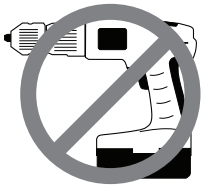


Rack Mount Installation

To attach the rack ears, locate the five rack mount holes on each side of the controller's chassis. Align the holes in the rack ears with the holes in the chassis. Insert and tighten the screws.



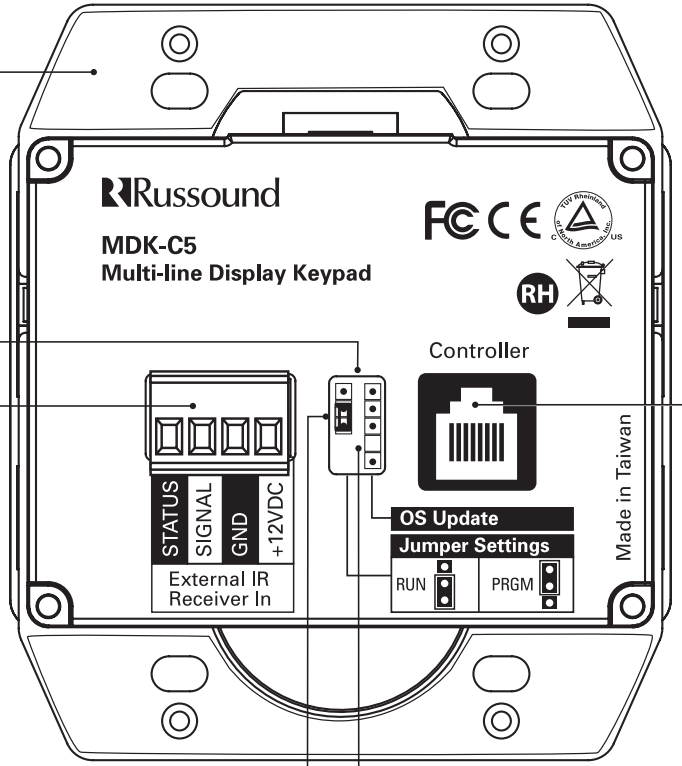
CAUTION
Mounting screws must be hand-tightened. Over-tightening the mounting screws can cause the buttons to jam and malfunction.



Foam Spacer
Remove spacers for better fit in retrofit box or P-ring installations

Cover
Remove to expose Update port and jumper

External IR Connection
Four pole detachable screw down connection for optional external IR receiver



Controller
RJ45 CAT-5e connection to controller keypad input

OS Update Jumper
Selects "Run" or "Program" mode

Programming Port
Insert cable here for firmware updates. Requires Advanced Programming Cable P/N 2500-521065.

MDK-C5 Keypad (rear)

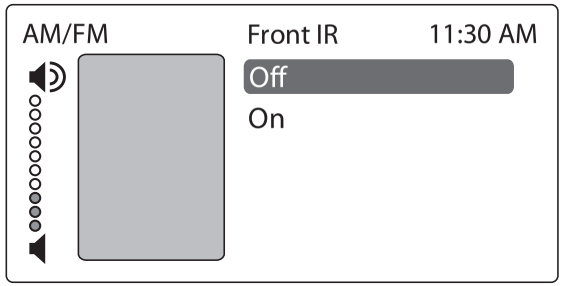
External IR Connection to MDK-C5 Keypad

NOTE: *EU Standby Power Requirements are met WITHOUT the use of an external IR receiver.*

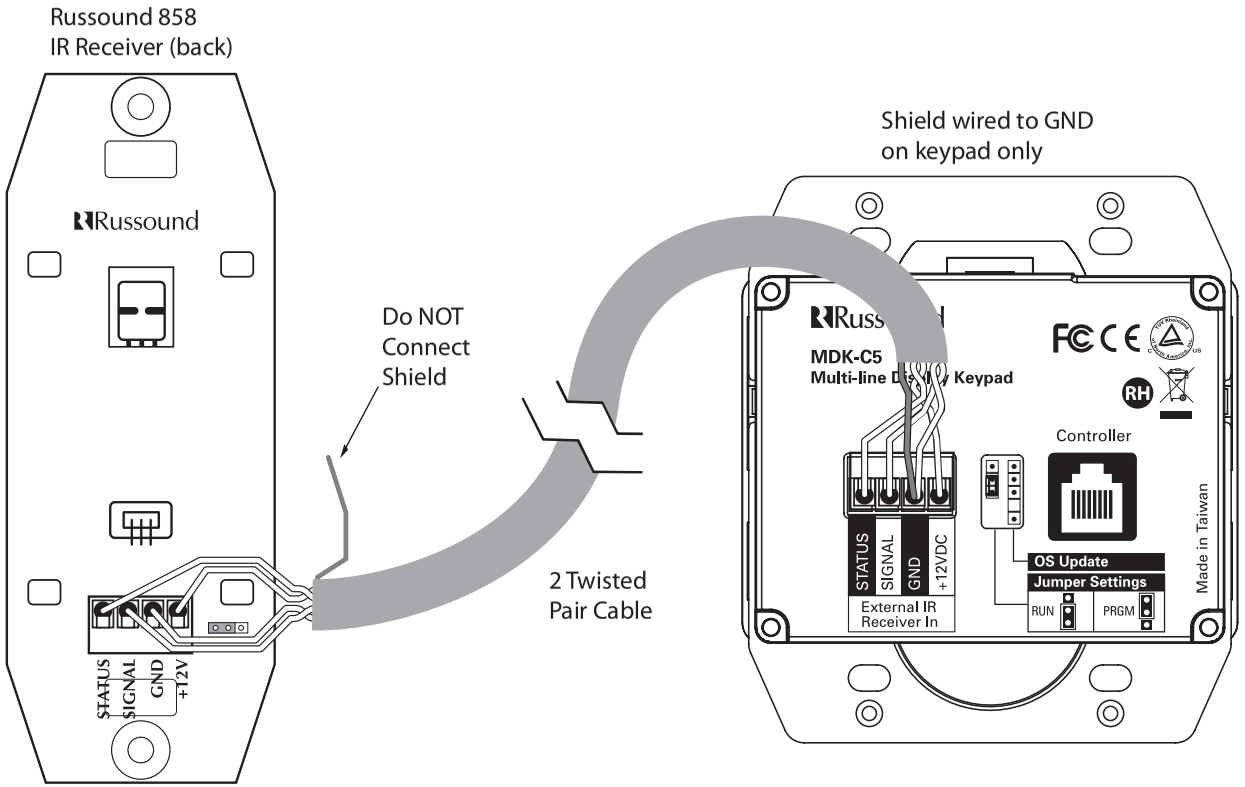
The MDK-C5 keypad has an External IR Receiver In terminal for connecting an external IR Receiver such as the Russound 858, SaphIR 862 Eye, or SaphIR 860 Phantom.

Use two twisted pair wire with one pair connecting GND (GROUND) and IR (SIGNAL) and the other pair connecting ST (STATUS) and V+ (+12VDC). Do not connect the shield to the IR receiver terminals.

If utilizing an external IR receiver, then you must disable the IR receiver in the keypad. This is disabled in the installer options menu on the keypad. See screen at right.



Disable Keypad IR



Connection of External IR to Keypad

MDK-C5 Color Plate Conversion

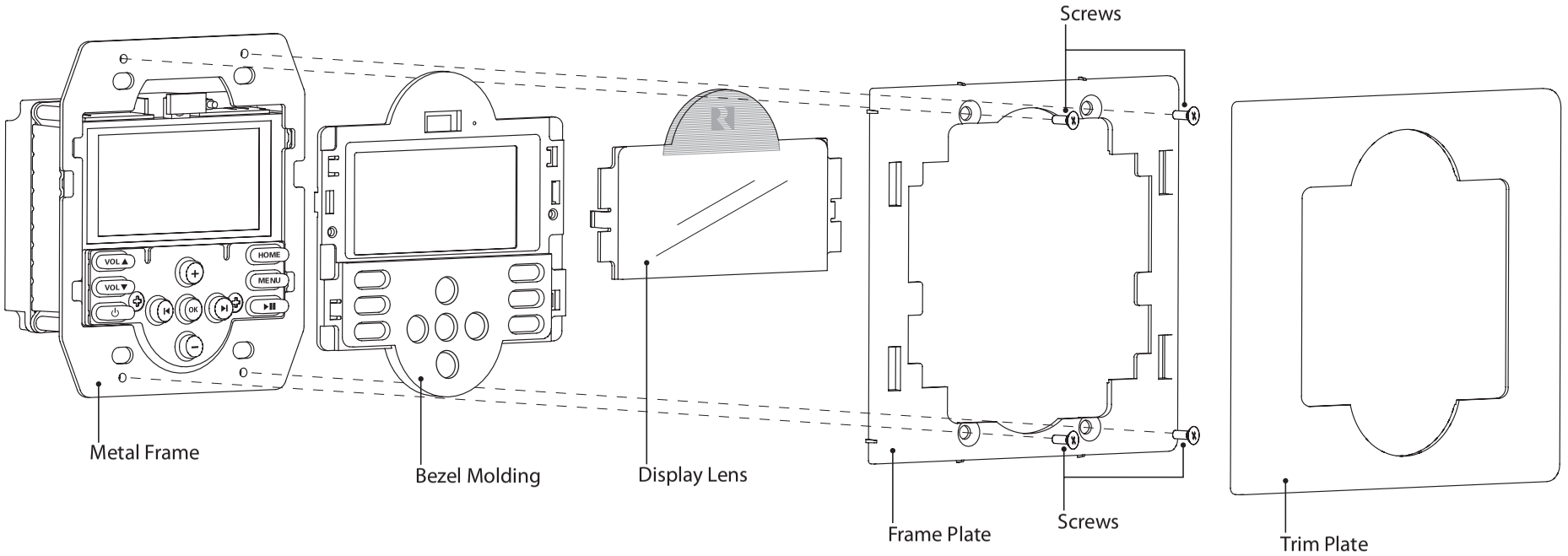
You will need both small straight and Phillips head screwdrivers to change the color plates on the keypad. The Bezel Molding and the Trim Plate will be switched for the new color plates.

1. If installed, remove the MDK-C5 keypad from the wall. Gently pull the Trim Plate off the mounting plate. Unscrew the unit from the electrical box, and disconnect the cable.
2. Unscrew the plastic Frame Plate. Keep the Frame Plate and screws for reattachment later.
3. Remove the Display Lens from the Bezel Molding by providing inward pressure to the two locking tabs while simultaneously pushing it away from the Bezel Molding.
4. Once the Display Lens is removed, put aside for reattachment later. Be careful to not damage the display.
5. Remove the Bezel Molding by gently pressing in each of the 4 locking tabs (2 per side) while pushing it away from the metal frame.
6. Reverse the order for installation, taking the following precautions.

   a. Make sure the button key mat is positioned properly on the front circuit board and without dust or debris on the button contact points prior to attaching the Bezel Molding.

   b. Make sure that there isn't any debris or fingerprints on either the display or back of the Display Lens prior to reattachment.

   c. Use a clean, dry, lint-free soft cloth to gently wipe the display or back of the Display Lens to clean if necessary. Never use cleaning agents as this can cause streaking or permanent damage to either part.



Keypad Disassembly / Assembly

Controller / Keypad Connection

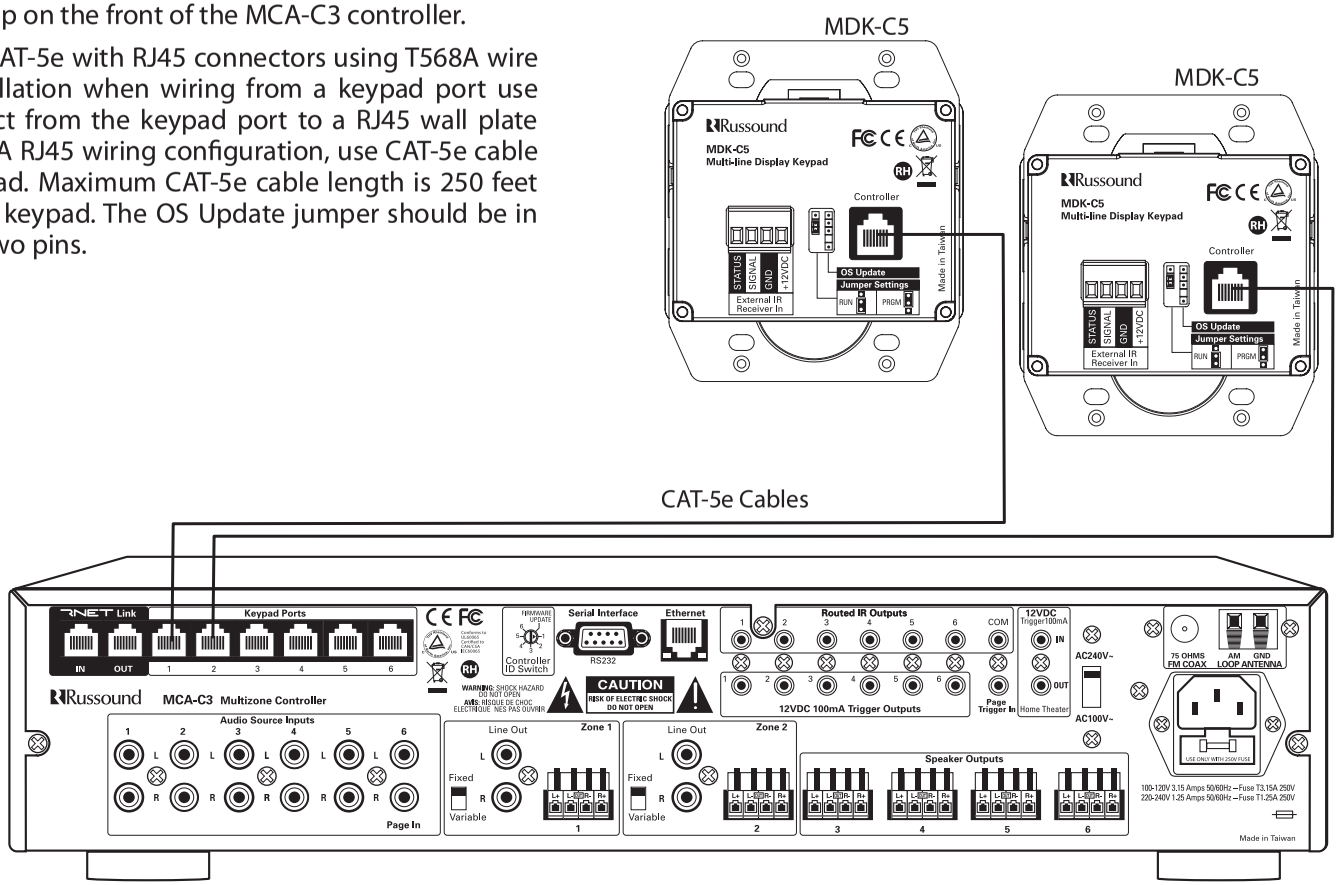
NOTE: EU Standby Power Requirements are met when the MCA-C3 controller is configured with six (6) MDK-C5 keypads attached.

The MDK-C5 keypad is designed for use with the C-Series controllers, and connects to a keypad port near the top left on the rear of the controller. These RJ45 ports support MDK-C5 keypads and UNO-TS2 touchscreens .

The six keypad ports correspond to the six zones supported by the MCA-C3. When a connected keypad is powered on, the zone becomes active and the corresponding zone LED lights up on the front of the MCA-C3 controller.

Connections are made using CAT-5e with RJ45 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 RJ45 wall plate (optional). Using the same T568A RJ45 wiring configuration, use CAT-5e cable from the wall plate to the keypad. Maximum CAT-5e cable length is 250 feet between the controller and the keypad. The OS Update jumper should be in the RUN position on the lower two pins.

If more keypads are desired for a zone, 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 zone. More detailed information regarding SA-ZX3 installation and operation can be found in its installation manual.



Keypad connection to the MCA-C3

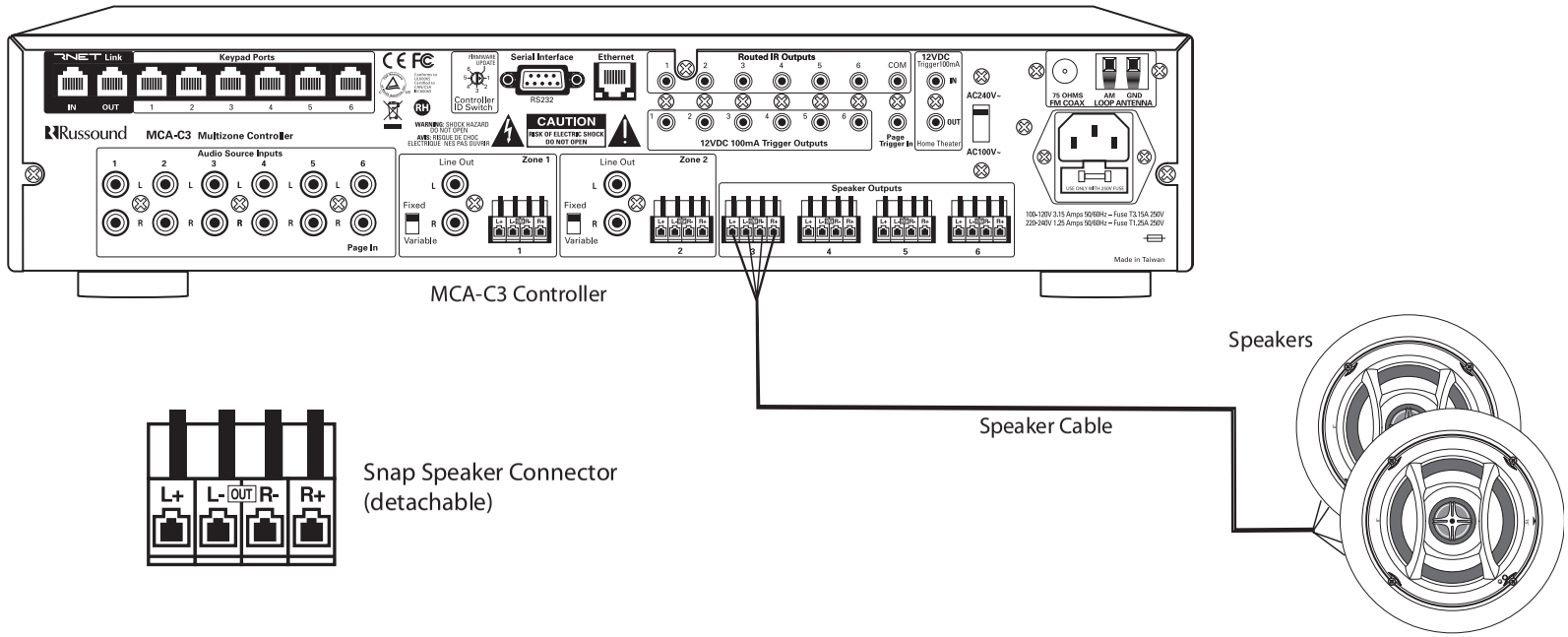
Speaker Output Connections

The MCA-C3 supports speaker outputs for all zones. These 20 watt per channel stereo speaker level outputs have high-current two-channel analog amplifiers. Each speaker connection requires an 8-ohm load.

The speakers are connected to the MCA-C3 using the supplied modular snap speaker connectors. Each of these color coded connectors is designated for the speaker set of a particular amplified zone. To avoid confusion, connect one zone speaker set at a time starting with Zone 1, taking care to keep zone and speaker wire identities straight.

Strip 1 to 2 inches (2.5 to 5 cm) off the end of each speaker cable jacket. Then strip ¼ 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 black lever for each connection until it locks open and insert the proper speaker wire, matching channel and 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 MCA-C3.



Speaker Output Connections

RNET Source Data Connections

The RNET Link In and Link Out can be used to connect the MCA-C3 to other specified Russound RNET-enabled source equipment. The connection is made using a CAT-5e patch cable from the Link Out of the controller and into the Link In of the RNET-enabled source. Another CAT-5e patch cable can be used to link out of that source and link into another RNET-enabled source in the system. Use a standard CAT-5e patch cable with an RJ45 connector on each end.

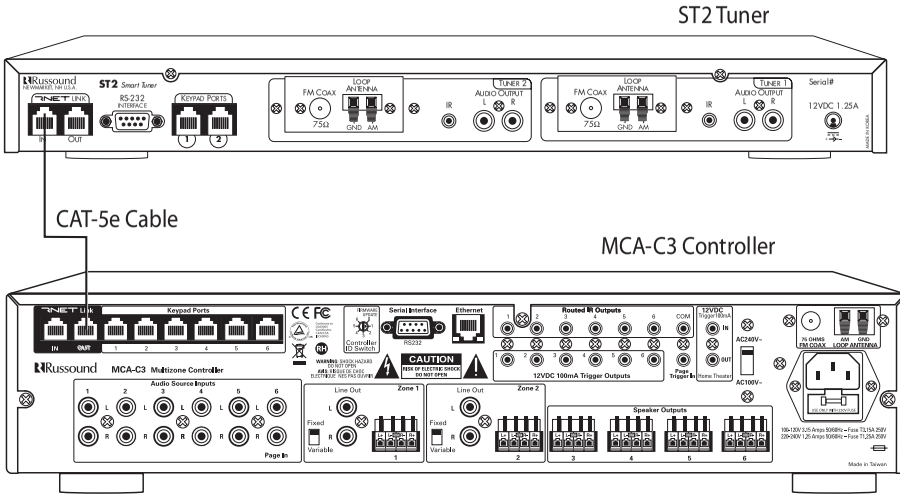
Along with RNET data signals, the RNET Link In and Link Out port passes source IR signals. To avoid potential cross-talk between the source-specific IR repeating signal lines, the cable can not exceed 18 inches in length.

Source Audio Connections

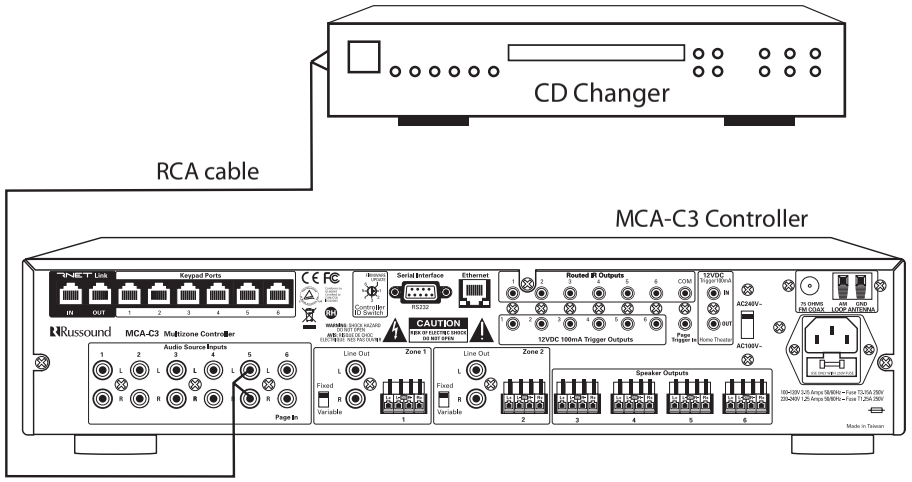
On the MCA-C3, sources 1 through 6 have standard stereo audio inputs. All source inputs have audio signal sensing. These sources can be programmed during zone setup to be global sources, or zones can be individually programmed to restrict access to sources.

There is an internal AM/FM tuner that, if enabled, will occupy source 1. The tuner is enabled with the SCS-C5 software and cannot be any other source number. If utilizing the internal tuner, do not connect/configure another source on source 1.

Connect each source output using quality RCA signal cables. Connect the Left and Right Audio outputs from each source to the corresponding inputs on the MCA-C3 controller.



RNET Source Connection to MCA-C3



Audio Source Connection to MCA-C3

IR Connections

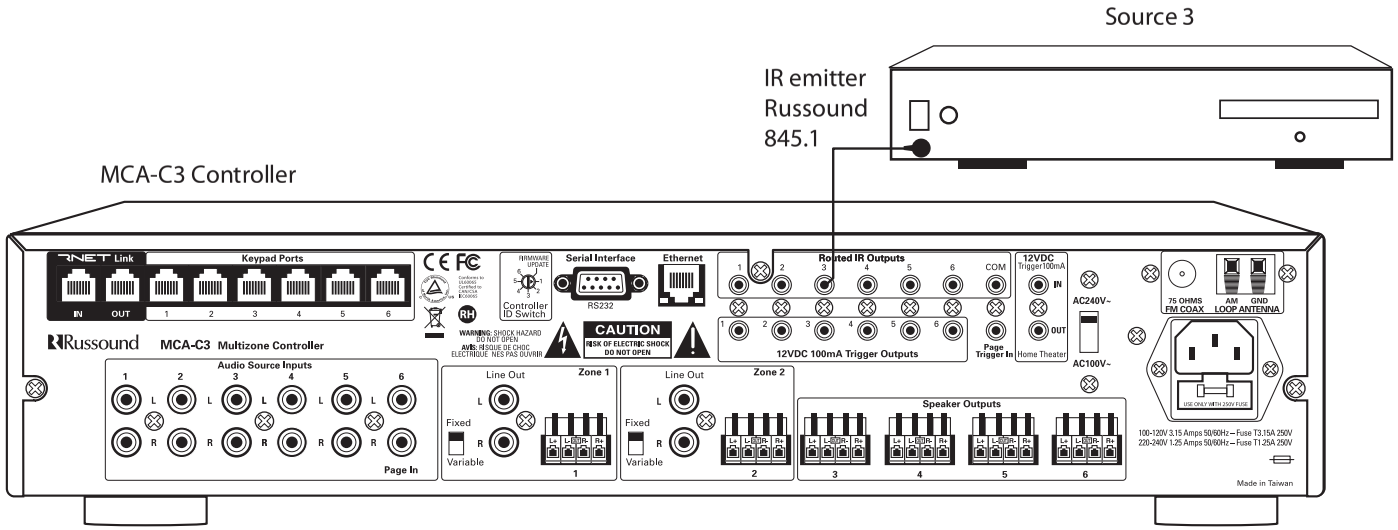
Routed IR Outputs

These six routed IR emitter outputs are supported by the MCA-C3 IR engine and support IR pass-through. They are also carried by the RNET Link cable to additional controllers.

Attach the end of the 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. When using the IR routed outputs, in order to control this source component with IR, the source must be selected at the keypad receiving the command.

Common IR

This output is supported by the MCA-C3 IR engine and supports IR pass-through from any of the IR sources or zones. These allow control of any source equipment without that source being selected on the keypad. The connection for the common IR output is made using an IR emitter with a 3.5mm plug. The Russound 845.1 single IR emitter is recommended, or use an IR connecting block such as the Russound 857 which allows multiple units to be controlled through a common IR output.



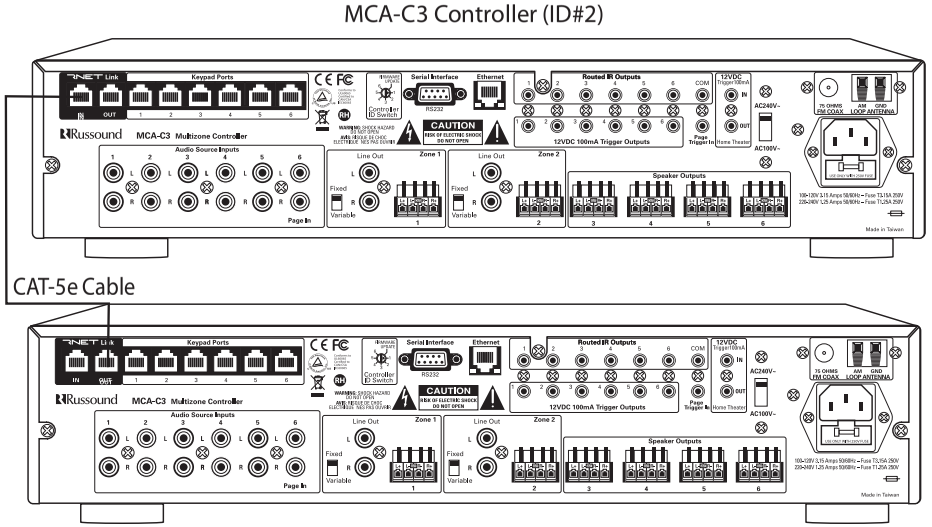
IR Connections to MCA-C3

Linking Multiple Controllers

The RNET Link In and Link Out can be used to connect two or more (up to 6) MCA-C3 controllers (does not support MCA-C5, CAV6.6, CAM6.6 or CAA66 controllers). The connection is made using a CAT-5e patch cable from the Link Out of the first controller and into the Link In of the next controller. Along with RNET data signals, the RNET Link In and Link Out port passes source IR signals.

The CAT-5e patch cable must have an RJ45 connector on each end with T568A wiring configuration. It can not exceed 18 inches (45.7 cm) in length to avoid potential cross-talk between the source-specific IR repeating signal lines.

NOTE: Use standard RCA Y-splitter cables to split audio between two controllers. In some multicontroller systems, line level audio distribution amps may be used.

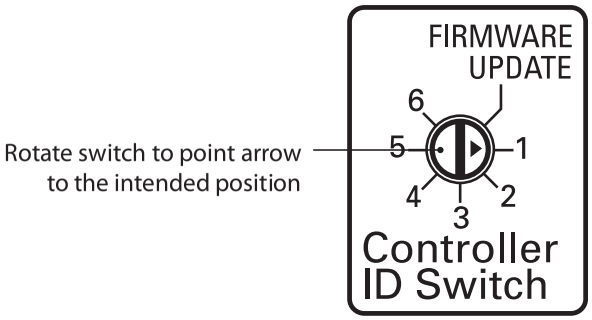


Linked Controllers

Controller ID Switch Settings

The Controller ID switch is a rotary switch with seven positions. It is used to set the controller ID number for multi-controller systems, and to put the MCA-C3 into Firmware Update mode.

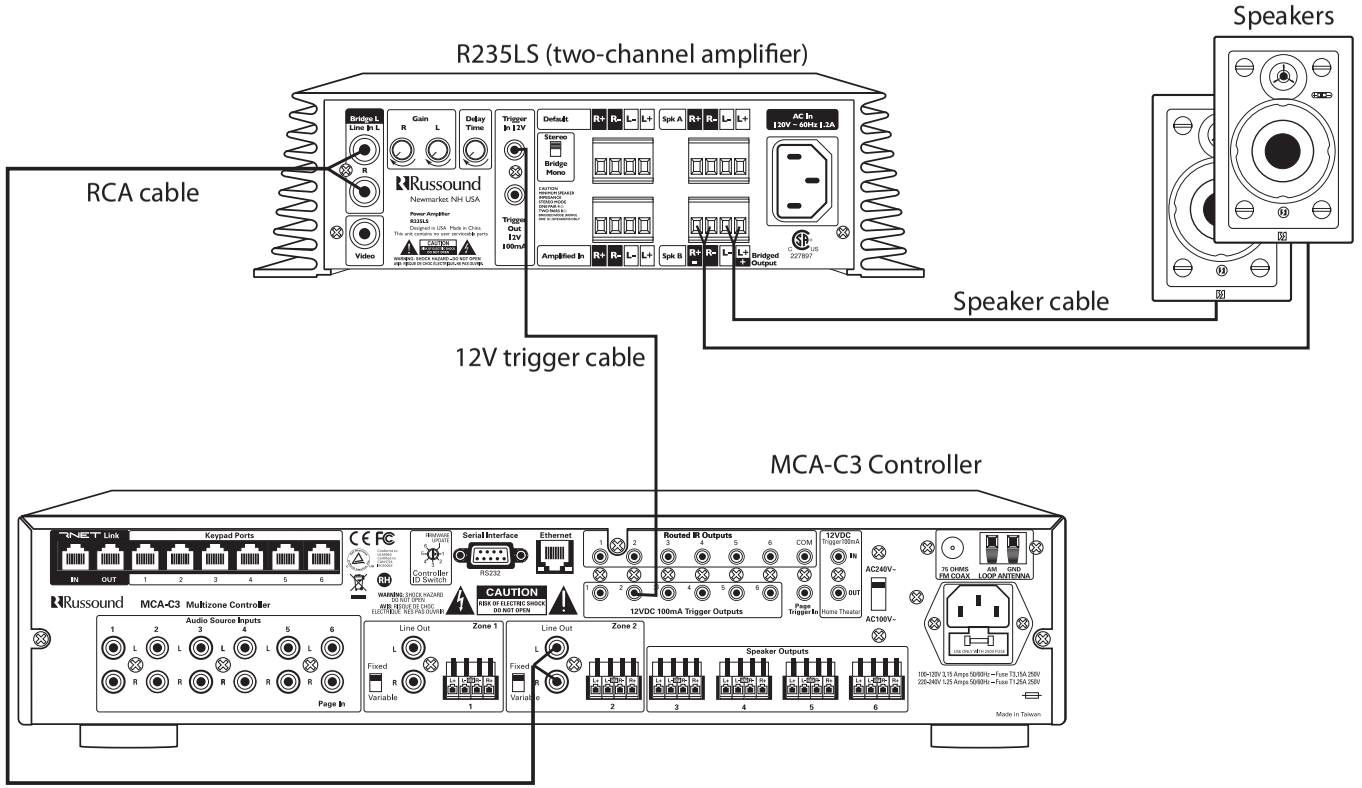
If two or more MCA-C3 controllers are connected using the RNET Link In and Link Out ports, each controller must have a unique controller ID prior to being connected through the RNET ports. Set each controller's ID switch to a unique number. Any multi-controller configuration requires that one controller be set to controller ID #1. This action must be performed before the system setup procedure is completed through SCS-C5 software and before powering up the system. The small arrow on the dial should point at the desired setting.



Zone 12VDC Trigger Outputs

There are six zone 12VDC Triggers which are located under the routed IR outputs. The 3.5mm mini port provides 12VDC 100mA when the corresponding zone is turned on and is disengaged when the zone is turned off. The trigger can be used to engage any 12VDC trigger device or component that does not exceed 100mA, such as the Russound R235LS amplifier. The connections for the trigger outputs are made using a two-conductor cable with 3.5mm male mini-plug ports at each end. The tip is positive (+) and sleeve is negative (-).

NOTE: When the Zone 1 and/or 2 Line out connections are set at Fixed, the connection is always on.

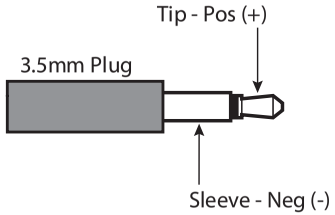


Typical Amplifier Connection

Page Trigger IN

The page trigger can be used to trigger a page event, configurable using SCS-C5 software (see pg. 27). The 12VDC trigger input selects the audio input from Source 6 (if configured in software as the Page Input) and sends it to any zone that does not have page disabled or that is not in Do Not Disturb mode. Do not use the page trigger input if there is a regular audio source connected to Source 6.

Note: The diagram at right shows the required cable to the 12VDC trigger in from the phone system - this will initiate the page.

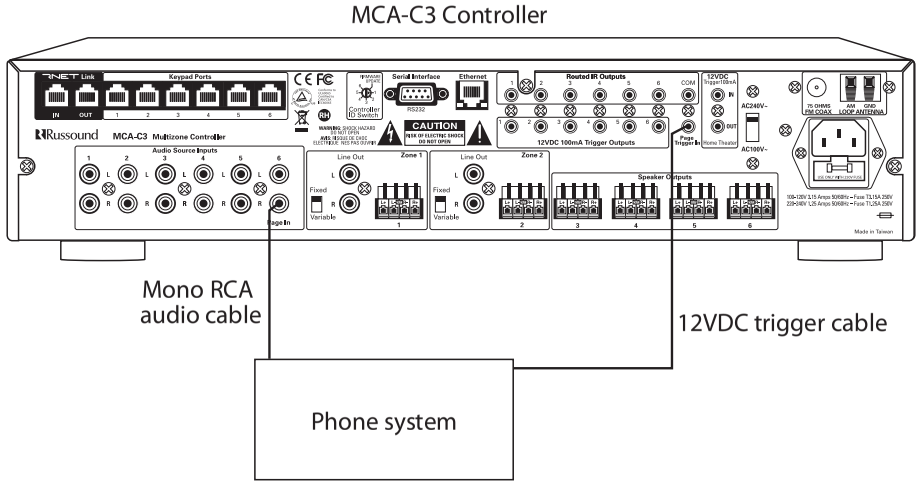


Polarity of 3.5mm Plug

Paging Audio IN

The MCA-C3 has a paging audio input on Source 6 (right channel only) that accepts line level audio signals via RCA cables. The paging inputs interface with the page output of a telephone system or other peripheral device. When a page event is triggered, it interrupts audio outputs for all enabled zones. System paging can be disabled permanently in each zone by software programming or temporarily with Do Not Disturb. To utilize Source 6 for paging input, it must be configured as a page source in the SCS-C5 set up.

Note: If Source 6 is enabled for paging events then only five source inputs are available.



Typical Paging Configuration
(if using source 6 for paging events)

Home Theater Triggers

These triggers are used to integrate with home theater systems that can provide a 12 volt trigger. The MCA-C3 can be used to power manage sources that are being shared with the home theater system. For example, the power management system will check to see the state of the home theater before powering down source gear. Refer to the sample configuration diagram on the next page for connections.

IN

This 12VDC Trigger input will have different functionality based on the state of the system and the state of the trigger. The connections for the trigger are made using a two-conductor cable with 3.5mm male mini-plug. The tip is positive (+) and the sleeve is negative (-).

"System Off' (all zones have been off for at least 5 minutes): If 12VDC is applied to this input, it will activate the power management ON command to the sources. While all zones are still OFF and 12VDC is removed, the system will wait 5 minutes and then activate the power management OFF command to the sources.

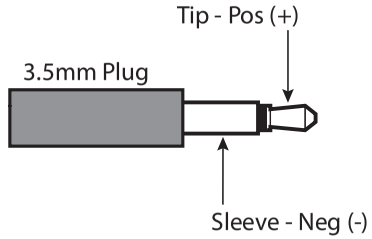
"System On" (at least one zone is on): If 12VDC is present but all zones get turned OFF, the power management OFF commands will not be sent until 5 minutes after the 12VDC is removed from the trigger.

Note: If the trigger is not being used, power management will operate normally.

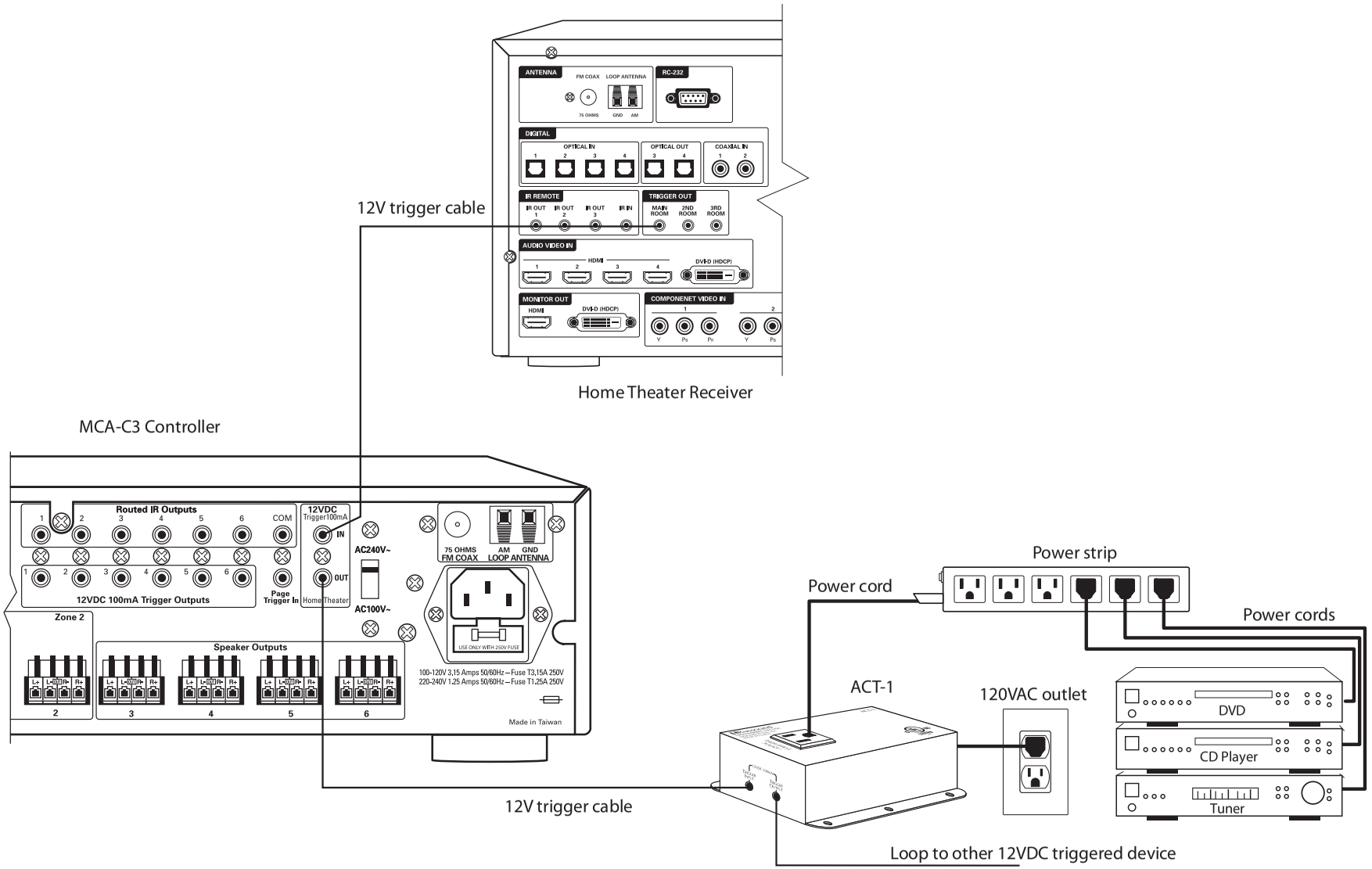
OUT

The 12VDC 100mA trigger out can be used to engage any 12VDC trigger device or component such as the Russound ACT-1 triggered outlet. The connections for the trigger out are made using a two-conductor cable with 3.5mm male mini-plug ports at each end. The tip is positive (+) and the sleeve is negative (-).

The output will be activated when the first zone is turned on (system on) and is deactivated six minutes after the last zone is turned off (system off), unless the home trigger input has 12VDC present.



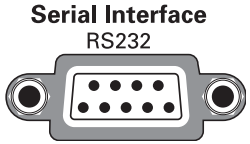
Polarity of 3.5mm Plug



Sample Configuration - Home Theater Trigger

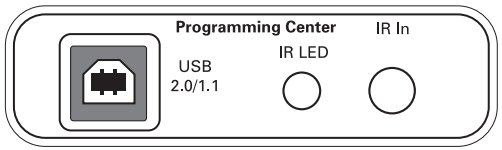
RS232 Serial Interface

The RS232 serial port is located on the back of the MCA-C3 and uses a DB-9 cable connection. The MCA-C3 supports serial communication with various third-party automation systems through the RS232 port. The RS232 port supports RNET hex and RIO text communication protocols, and ARCAM DAB tuner control. These features can be enabled using the SCS-C5 software (see pg. 27). This port can also used for firmware updates. A third party toolkit and firmware update protocol is available on the Document Center at www. russound.com.



USB Port

The MCA-C3 has a USB 2.0/1.1 port on the front panel for ease of controller programming with SCS-C5 software.



Ethernet Port

The MCA-C3 has an RJ45 port on the rear panel for connectivity to the local Ethernet network for SCS-C5 programming and RIO text control. In a multicontroller system, only Controller 1 Ethernet port is active.

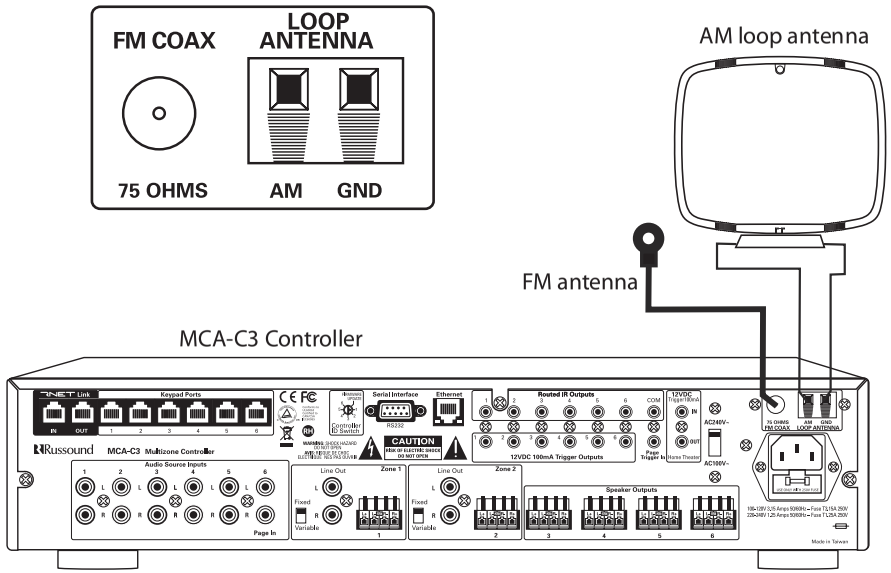
AM/FM Antenna Connections:

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. 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 controller, and attach the 75-ohm coax cable to the balun.

FM Antenna

Attach the included FM antenna to the 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 controller.



Programmable options with SCS-C5 software

The necessary software (SCS-C5) to program and configure the system is available via download from the Doc Center at www.russound.com. With your PC laptop, you can configure the system prior to connecting with the MCA-C3 controller. 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. Reports can also be generated for a hard copy back up of the system configuration.

Items to be programmed with SCS-C5 software include:

Source Configuration - group by zone- or source-based options.

Zone and Source Names - a list of predefined names for both are available and will be visible upon keypads and in reports. Custom naming is also possible following the character parameters.

Source Exclusion - defines the set of sources available to each zone.

Party Mode Participation - defines whether the zone can participate in Party mode.

Zone and Source Linked Groups - Two groups of each type are allowed per controller. Groups share source selection and party mode participation.

All ON Participation - defines whether or not the zone will respond to the All ON command.

Page Event mode - defines whether a zone will respond to a page event.

Page Volume - sets the volume of a page event in each zone.

Power Management of Sources - enabled / disabled per source. If enabled the source will turn on when the first zone is turned on or the home theater trigger has 12 VDC present. The source will turn off 5 minutes after the last zone is turned off, or 5 minutes after input is discontinued from the home theater trigger. This feature uses IR commands and audio signal sensing to power up sources and initiate audio to confirm source power states. **NOTE:** Power management must be enabled for RNET sources for controller to go into standby mode.

Internal AM/FM Tuner on Source 1 - If the tuner is utilized, any input via the Source 1 input ports on the rear of the unit needs to be disabled.

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

IR Keycode Learning - allows IR codes to be learned, saved, and managed.

Page Input on Source 6 - assigns Source 6 as a paging input.

Start up

1. Make connections of sources, speakers and keypads to the controller(s).
2. In a multiple controller configuration, set the controller IDs to unique numbers. Use CAT-5e linking cables of no more than 18 in (45.7 cm) to link the controllers. Link by interconnecting the RNET Link ports.
3. Plug in and power the sources and controllers.
4. The left LED showing power on the front panel of each controller should be lit.
5. Configure the system using the SCS-C5 software. Load the program onto Controller#1 using the front USB port or back panel Ethernet port.
6. Check operation of the keypads, power on, and cycle through sources. For correct operation, each RNET source must be configured with a unique source ID and must match the assignment made with the SCS-C5 Configuration software (see pg. 27).
7. Check zone keypads. The zone LED should be lit on the front of the controller if the corresponding keypad is on. The LED will not be lit if the keypad is not turned on or is absent.
8. Check operation of all keypad functions.
9. Check for functional IR signal pass-through (if applicable).
10. The system is now ready to use.

Troubleshooting

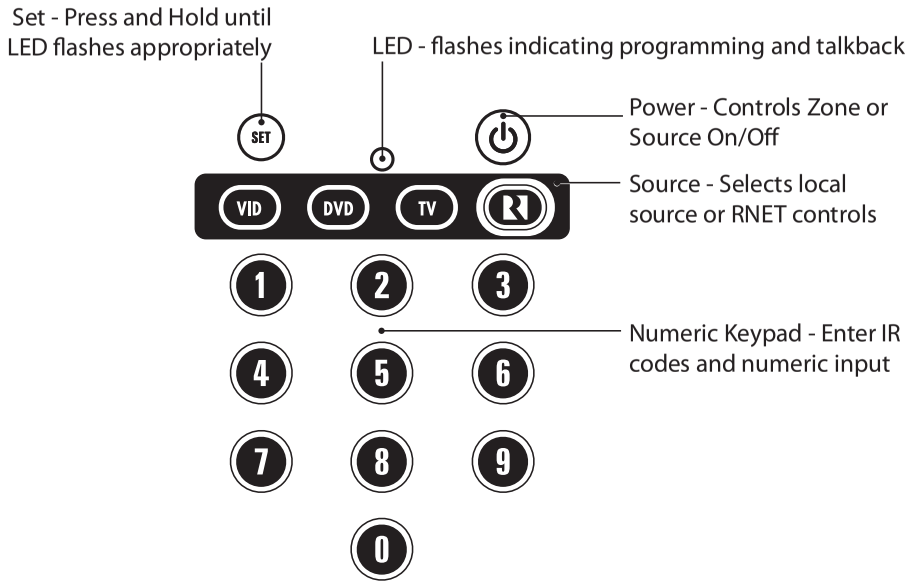
- When the controller and the keypads are powered ON, all the corresponding zone LEDs on the face of the controller will be green. Improper connection may cause one or more LEDs not to be lit. Check all connections.
- Cycle power by pressing the power button, waiting 10 seconds, and then pressing the power button again.
- Check connections from the keypads and speakers to the controller(s).
- If the keypad doesn't respond to commands ensure the OS update jumper on the rear of the keypad is in the RUN position (on the lower pins).

Programming a Device

NOTE: System sources are programmed with SCS-C5 Configuration software. The SRC-C5 remote has the capability of being programmed for local sources.

To control Universal TV, VCR or DVD, Cable or Satellite Receivers, Amplifier or tuner, and Auxiliary devices, follow these steps. Before proceeding, find the codes for the devices you want to program in "Manufacturer's Codes" in this manual.

1. Turn on the device (e.g., DVD player) and if needed, load media.
2. Press a device key.
3. Press and hold SET until the red LED blinks twice, then release.
4. Enter the first five-digit code for your device. The LED blinks once as each digit is entered. If the code is correct, the LED blinks twice.
   Note: If the LED does not blink twice, repeat step 4 and try entering the code again.
5. Aim the remote at the device and press POWER. The device should turn off. If it does not, repeat steps 3-5, trying each code for your brand until you find one that works. If you cannot find a code that works see "Searching for Your Code" in this manual.
6. Repeat steps 1-5 for the other devices you want to control. For future reference, write down each working device code.



Remote Control Programming Keys

Searching for your Code

If your device does not respond to the remote after trying all codes listed for our brand, or if your brand is not listed, try searching for your code:

1. Press a device key once.
2. Press and hold SET until the red LED blinks twice, then release.
3. Enter 9-9-1, then the device group number (see below). The LED blinks twice.
   - 0 Cable (Cable Converters, Video Accessories, Satellite Receivers)
   - 1 TV (TVs)
   - 2 VCR (VCRs, DVD players)
   - 3 Audio (Audio Amplifiers, Audio Amp/Tuners, CD players)
4. Aim the remote at the device and press POWER. The remote sends IR codes from its library to the selected device, starting with the most popular code first. If the device responds, go to step 6.
5. If the device does not respond, press CH+. the remote will try the next code. Continue until the device responds. Press CH- to try the previous code.
6. Press SET to lock in code. To search for other device codes, repeat steps 1-5.

Checking the Codes

If you have set up the remote using the procedure in "Searching for Your Code," you may need to find out which five-digit code is operating your equipment. For example, to find out which code is assigned to your TV:

1. Press the key to which the TV is assigned.
2. Press and hold SET until the red LED blinks twice, then release.
3. Enter 9-9-0. The LED blinks twice.
4. To view the code's first digit, press 1. Count the LED blinks (e.g., three blinks =3), and enter the number in the appropriate device list in step 8 of "Programming a Device." If a code digit is 0, the LED does not blink.
5. Repeat step 4 for the remaining digits, using 2 for the second digit, and so on.
6. To check for other device codes, repeat steps 1-5, using the appropriate key.

Using Learning

The SRC-C5 includes a Learning feature so you can add functions that are unique to your home entertainment devices (e.g., VCR Tracking Up or Down). The following precautions apply:

- The original remote control must be in working order and available for learning to work properly.
- Learned keys are mode specific, so each one can store a unique function for each mode.
- Do not use the following keys for learning: Device Keys, SET, Back, or Record.
- Learning capacity is approximately 40 to 100 keys, depending on the code being learned.
- Certain device codes are not learnable including multi-frequency types, some high frequency ones, and other unusual formats.
- For optimum learning, avoid high levels of ambient light such as natural sunlight or energy-efficient fluorescent lights.

Programming a learned key

***Note**: If more than 15 seconds pass between key presses, the remote exits programming.*

1. Press and hold SET until LED flashes twice.
2. Press 9-7-5.
3. Press a device key once to assign a mode for learning.
4. Place the SRC-C5 head-to-head (about 2" apart) from your original remote control. Also locate the key (on original remote control) that will serve as the teaching function.
5. On the SRC-C5, press a key where the learned function will be stored.
6. On the original remote, press and hold the key to be learned. The SRC-C5 LED will turn off. Continue holding the key on the original remote until the SRC-C5 LED blinks twice.

   Note: If the LED displays one long blink, a learning error has occurred. Try repeating this step again until a successful capture occurs. If the function is still not captured, press and hold SET to exit programming. Review the learning precautions listed above, or the Troubleshooting tips below, before beginning again at step 1.
7. Repeat steps 4-6 for another key on same device, or steps 1-6 for another device.

Deleting a single learning key

1. Select a source.
2. Press and hold SET until the LED flashes twice.
3. Press 9-7-6.
4. Press the key (twice) containing the learned function to be deleted. The remote blinks twice.
5. Repeat steps 1-4 for another key on the same source, or press and hold SET to exit programming.

Deleting all learned keys in a specific mode

1. Press and hold SET until the LED blinks twice.
2. Press 9-7-6.
3. Press a device key twice to delete all the learned keys for that mode. The LED blinks twice.
4. Repeat steps 1-3 for another set of keys for a device, or press and hold SET to exit programming.

Factory Initialization of SRC-C5

1. Press and hold SET until the LED blinks twice.
2. Press 9-8-0.
3. After the LED flashes four times, the remote will be reset to factory default.

Changing Volume Lock

The SRC-C5 remote is preset to allow independent volume control of each selected device (Global Volume Unlock). However, you may change the Volume Lock setting to Global Volume Lock so that one device's volume will control volume in all other modes. After that, you can perform Individual Volume Unlock on a selected device to set its volume control for independent operation or Global Volume Unlock to remove all volume locking.

Locking Volume Control to One Mode (Global Volume Lock)

1. Press and hold SET until the red LED blinks twice, then release.
2. Enter 9-9-3 and then press the mode key for the device you want to control volume (e.g., TV). The LED blinks twice. Now when you press VOL+, VOL-, or Mute, the selected device will control the volume regardless of the current mode.

Unlocking All Volume Control (Restoring Global Unlock)

1. Press and hold SET until the red LED blinks twice, then release.
2. Enter 9-9-3 and then press VOL+. The LED blinks four times. Volume is independently controlled for all programmed devices.

Unlocking a Single Device's Volume Control

1. Press a device key (VID, DVD, etc.).
2. Press and hold SET until the red LED blinks twice, then release.
3. Enter 9-9-3 and then press VOL-. The LED blinks four times. Volume is independently controlled for the selected devices.

MANUFACTURER's CODES

Setup Codes for Audio Amplifiers

Accuphase	30382
Acurus	30765
Adcom	30577, 31100
Aragon	30765
AudioSource	30011
Bel Canto Design	31583
Bose	30674
Carver	30892
Curtis Mathes	30300
Durabrand	31561
GE	30078
Harman/Kardon	30892
JVC	30331
Kenwood	30356
Klipsch	30765
Left Coast	30892
Lenoxx	31561
Luxman	30165
Marantz	30321, 30892
Mark Levinson	31483
Mondial	30765
Nakamichi	30321
NEC	30264
Optimus	30300, 30395
Parasound	30246
Philips	30892
Pioneer	30013, 30300
Polk Audio	30892
PS Audio	31523
RCA	30300
Realistic	30395
Sansui	30321
Shure	30264
Sony	30689, 30815
Soundesign	30078, 30211
Victor	30331
Wards	30013, 30078, 30211
Yamaha	30133, 30143, 30354, 30504
YBA	31502

Setup Codes for Audio Amp/Tuners

ADC	30531
Adcom	30616, 31616, 31617
Aiwa	30121, 30158, 30189, 30405, 31089, 31243, 31321, 31347, 31388, 31405, 31641
Akai	30076, 30224, 31255, 31512
Alco	31390
AMC	31077
Amphion Media Works	31563, 31615
Amplifier Technologies	31584
AMW	31563, 31615
Anam	31074, 31609
Apex Digital	31257, 31430
Arcam	31120, 31189
Atlantic Technology	31487
Audiophase	31387
Audiotronic	31189
Audiovox	31390, 31627
Bel Canto Design	31584
Bose	30639, 31229, 31253
Brix	31602
Cambridge Soundworks	31370, 31477
Capetronic	30531
Carver	30008, 30042, 30121, 30189, 30360, 31089, 31189, 31289
Casio	30195
Clarinette	30195
Classic	31352
Coby	31263, 31389, 31513
Compaq	31136
Criterion	31420
Curtis	30797, 31596
Curtis Mathes	30080
Daewoo	31250
Dell	31383
Denon	30004, 30121, 30273, 30771, 31104, 31142, 31311, 31360, 30023, 30302
Emerson	30255, 30424
Fisher	30042, 30219, 30360, 31409, 31801
Fosgate	31487
Garrard	30146, 30281, 30424, 30440, 30463
Gateway	31517, 31567
GE	31379
Glory Horse	31263
Go Video	31352, 31532
GoldStar	30281
GPX	31299
Hafler	30146
Harman/Kardon	30110, 30189, 30891, 31289, 31306
Hewlett Packard	31181
Hitachi	31273, 31801
Initial	31426
Inkel	30062
Integra	30135, 31298
JBL	30110, 31306
JVC	30074, 31058, 31263, 31282, 31374, 31495
Kansai	30440
Kenwood	30027, 30042, 30077, 30186, 30239, 30313, 30314, 30569, 31027, 31051, 31052, 31313, 31569, 31570
KLH	31390, 31412, 31428
Koss	30255, 30424, 31366, 31497
Lasonic	31510, 31798
Lenoxx	31437
Lexicon	31076
LG	30281, 31293
Linn	30189
Liquid Video	31497
Lloyd's	30195
LXI	30181
Magnavox	30128, 30189, 30195, 30391, 30531, 31089, 31189, 31269, 31514
Marantz	30039, 30128, 30189, 30200, 31089, 31189, 31269, 31289
McIntosh	31289
MCS	30039, 30346
Memorex	31596
Micromega	31189
Mitsubishi	31393
Modulaire	30195
Musicmagic	31089
Myryad	31189
NAD	30320
Nakamichi	30097, 30347, 31313, 31555
NEC	30235
Norcent	31389
Nova	31389
Onkyo	30135, 30380, 30842, 31298, 31531
Optimus	30042, 30080, 30177, 30181, 30186, 30219, 30440, 30531, 30670, 30738, 30797, 30801, 30849, 31023, 31074
Oritron	31366, 31497
Outlaw	31487
Outlaw Audio	31487
Panasonic	30039, 30309, 30367, 30518, 31288, 31308, 31316, 31350, 31363, 31509, 31518, 31548, 31633, 31763, 31764
Penney	30195
Philips	30189, 30391, 31089, 31120, 31189, 31266, 31268, 31269, 31283, 31365, 31368
Pioneer	30014, 30080, 30150, 30244, 30531, 30630, 30801, 31023, 31084, 31184, 31343, 31384
Polaroid	31508
Polk Audio	30189, 31289
Proscan	31254
Quasar	30039
RadioShack	31263
RCA	30054, 30080, 30346, 30360, 30530, 30531, 31023, 31074, 31154, 31254, 31390, 31511, 31609
Realistic	30163, 30181, 30195
Regent	31437
Rio	31383, 31869
Rio Audio	31383
Saba	31519
Samsung	31295, 31500
Sansui	30189, 30193, 30346, 31089, 31189, 31764
Sanyo	30219, 30801, 31251, 31469, 31801
Scott	30163, 30322
Sharp 3	0186, 30771, 31286, 31361, 31386
Sharper Image	30797, 31263, 31385, 31409, 31410, 31411, 31416, 31545, 31546, 31549, 31556, 31723
Sherwood	30062, 30491, 30502, 31077, 31423, 31517, 31567, 31653
Shinsonic	31426
Sirius	31602, 31627
Sonic	30281
Sonic Blue	31383, 31532, 31869
Sony	30158, 30168, 31042, 31058, 31131, 31158, 31258, 31347, 31349, 31367, 31371, 31382, 31406, 31441, 31442, 31458, 31503, 31529, 31558, 31658, 31758, 31759, 31858
Soundesign	30670
Stereophonics	31023
Sunfire	30313, 30314, 31052, 31313
Sylvania	30797
Teac	30163, 30463, 31074, 31267, 31390, 31528
Technics	30039, 30208, 30309, 30518, 31308, 31309, 31384, 31518, 31633
Techwood	30281
Thorens	31189
Toshiba	30080, 30135
Venturer	30849, 31390
Victor	30074
Wards	30014, 30054, 30080, 30158, 30189
XM	31406
Yamaha	30081, 30176, 30186, 31176, 31276, 31331, 31375
Yorx	30195
Zenith	30281, 30857, 31293

Setup Codes for Cable Converters

ABC	00001, 00003, 00007, 00008, 00011, 00013, 00014, 00017
Allegro	00153, 00315
Americast	00899
Antronix	00022, 00207
Archer	00022, 00153, 00207, 00797
Belcor	00056
Bell & Howell	00014
Bell South	00899
Cable Star	00056
Cabletenna	00022
Cableview	00022
Century	00153
Citizen	00153, 00315
Clearmaster	00883
ClearMax	00883
Cleartron	01327
Colour Voice	00025, 00031

Setup Codes for Cable Converters

(continued)

Comtronics	00040
Contec	00019
Coolmax	00883
Digi	00637
Director	00476
Dumont	00637
Eastern	00002
Emerson	00797
Everquest	00015, 00040
Focus	00400
Garrard	00153
GC Electronics	00056, 00207
Gemini	00015, 00797
General Instrument	00003, 00011, 00276, 00476, 00810
Global	01327
GoldStar	00040, 00144
Goodmind	00797
Hamlin	00009, 00020, 00034, 00259, 00273
Hitachi	00011
Hytex	00007
Jasco	00015, 00153, 00315
Jerrold	00003, 00011, 00012, 00014, 00015,
00276,	00476, 00810
Linsay	00440
Magnavox	00027
Memorex	00000
Motorola	00014, 00276, 00476, 00810, 01106, 01254, 01376
Movie Time	00063, 00156
Multitech	00883
Novaplex	00618
NSC	00063, 00156
Oak	00007, 00019
Optimus	00021
Pace	00008, 00237, 01877
Panasonic	00000, 00021, 00107
Panther	00637
Paragon	00000
Philips	00025, 00027, 00031, 00153, 00317, 01305
Pioneer	00144, 00533, 00877, 01021, 01877
Popular Mechanics	00400
Pulsar	00000
Quasar	00000
RadioShack	00015, 00315, 00797, 00883
RCA	00021
Realistic	00207
Recoton	00400
Regal	00020, 00259, 00273, 00279
Regency	00002
Rembrandt	00011
Runco	00000
Samsung	00040, 00144
Scientific Atlanta	00008, 00017, 00477, 00877, 01877
Seam	00510
Signal	00015, 00040
Signature	00011
SL Marx	00040
Sony	01006
Sprucer	00021
Starcom	00003, 00015
Stargate	00015, 00040, 00797
Starquest	00015
Supercable	00276
Supermax	00883
Sylvania	00001
Tandy	00258
Teleview	00040
Texscan	00001
TFC	00310
Time Warner Cable	01877
Timeless	00040
Tocom	00012, 00013
Torx	00003
Toshiba	00000
Tristar	00883
Tusa	00015
TV86	00063
Unika	00022, 00153, 00207
United Artists	00007
Universal	00022, 00056, 00153, 00191, 00207
V2	00883
Viewmaster	00883
Viewstar	00027, 00063, 00258
Vision	00883
Vortex View	00883
Zenith	00000, 00525, 00899
Zentek	00400

Setup Codes for CD Players

ADC	30018
Adcom	30155, 30234
Aiwa	30012, 30124, 30157
Akai	30156
Arcam	30157
Audio Alchemy	30194
Audio-Technica	30170
BSR	30194, 30245
Burmester	30420
California Audio Labs	30029, 30303
Carrera	30194
Carver	30157, 30179, 30437
Classic	31297
Crown	30122
DAK	30245
DBX	30254
Denon	30003, 30626, 30873
DKK	30000
DMX Electronics	30157
Emerson	30155, 30164, 30305, 30469
Fisher	30088, 30174, 30179, 30342, 31325
Garrard	30245, 30280, 30393, 30420, 30425
GE	30009
Gemini	30625
Genexxa	30032, 30164, 30305
GoldStar	30417, 31208
GPX	31296
Harman/Kardon	30157, 30173, 30426, 31202
Hitachi	30032, 30155
Integra	30101
JVC	30072, 30655, 31294
Kenwood 3	0028, 30037, 30190, 30626, 30681, 30826
KLH	31318
Kodak	30287
Koss	31317
Krell	30157
Kyocera	30018
LG	31208
Linn	30157
Luxman	30093
LXI	30305
Magnavox	30157, 30305
Marantz	30029, 30157, 30180, 30626
Mark Levinson	31484
McIntosh	30287
MCS	30029, 30043
Miro	30000
Mission	30157
MTC	30420, 30625
Nakamichi	30147
NEC	30043, 30234
Nikko	30164, 30170, 30174, 30625
NSM	30157
Onkyo	30101, 30868
Optimus	30000, 30032, 30037, 30087, 30145, 30175, 30179, 30194, 30196, 30280, 30305, 30342, 30420, 30426, 30437, 30468, 31063, 31075
Panasonic	30029, 30303, 30752
Parasound	30194, 30420
Philips	30157, 30287, 30626
Pioneer	30032, 30305, 30468, 31062, 31063, 31087
Polk Audio	30157
Proceed	30420
Proton	30157
QED	30157
Quad	30157
Quasar	30029
RadioShack	31075
RCA	30009, 30032, 30053, 30155, 30179, 30305, 30420, 30468, 30764, 31062
Realistic	30155, 30164, 30175, 30179, 30180, 30420
Rotel	30157, 30420
SAE	30157
Sansui	30157, 30202, 30305
Sanyo	30087, 30179
Scott	30155, 30164, 30305
Sears	30305
Sharp	30037, 30180, 30861
Sherwood	30180, 30196, 30426, 31067
Shure	30043
Simaudio	30157
Sonic Frontiers	30157
Sony	30000, 30100, 30185, 30490, 30604, 30605, 31364
Soundesign	30145, 30425
STS	30018
Sugden	30157
Symphonic	30305
TAG McLaren	30157
Tascam	30420
TDK	31208
Teac	30174, 30180, 30393, 30420
Technics	30029, 30207, 30303
Tivoli Audio	31553
Vector Research	30194, 30417
Victor	30072
Wards	30053, 30157
Yamaha	30036, 30170, 30187, 30490, 30888, 31292
YBA	30625
Yorx	30461

Setup Codes for Video Accessories

ABS	01272
Alienware	01272
CyberPower	01272
Gateway	01272
Hewlett Packard	01267, 01272
Howard Computers	01272
HP	01272
Hush	01272
iBUYPOWER	01272
InterVideo	01393
Jensen	01165
JVC	01384
Keyspan	01344
KWorld	01403
LG	01415
Linksys	01272, 01365
Macro Image Technology	01383
Media Center PC	01272
Microsoft	01272
Mind	01272
Motorola	01363
MyHD	01383
Niveus Media	01272

Setup Codes for Video Accessories

(continued)

Northgate	01272
Panasonic	01120
Pinnacle Systems	01268
Pioneer	01010
Princeton	00113, 00295
Rabbit	00081
Ricavision	01272
Roku	01486
Samsung	01190, 01490
Sensory Science	01126
Sharp	01010
SMC	01456
Sony	01272, 01324, 01364
Stack 9	01272
Streamzap	01309
Systemax	01272
Tagar Systems	01272
TeleCaption	00171
Toshiba	01272
Touch	01272
Viewsonic	01272, 01329
Vizio	01126
Voodoo	01272
ZT Group	01272

Setup Codes for DVD Players

Adcom	21094
Advent	21016
Aiwa	20641, 21912
Akai	20695, 20770, 20899, 21089, 21975
Allegro	20869
Amphion Media Works	20872, 21176, 22001, 22016
AMW	20872, 21176, 22001, 22016
Anam	21913
Apex Digital	20672, 20717, 20755, 20794, 20796, 20797, 20830, 21004, 21020, 21056, 21061, 21100, 21915, 21937
Aspire Digital	21168
Audiologic	20736
Audiovox	20717, 21041, 21071, 21072, 21121, 21122
Axion	21071, 21072
B & K	20655, 20662
Bel Canto Design	21571
Blaupunkt	20717
Blue Parade	20571
Broksonic	20695, 20868
Byd:sign	20872
California Audio Labs	20490
Cambridge Soundworks	21916
CAVS	21057
CineVision	20833, 20869, 20876
Classic	21917
Coby	20778, 20852, 21086, 21107, 21165, 21923
Criterion	22007
Curtis Mathes	21087
CyberHome	20816, 21023, 21024, 21117, 21129
Daewoo	20705, 20784, 20833, 20869, 21172, 21918
Daytek	20872
Denon	20490, 20634
Disney	20675
Dual	21068, 21085
DVD2000	20521
Emerson	20591, 20675, 20821
Enterprise	20591
Fisher	20670, 21919
Funai	20675
Gateway	21073, 21077, 21158
GE	20522, 20717, 20815
General Electric	20717
Go Video	20715, 20744, 20783, 20833, 20869, 21044, 21075, 21099, 21144, 21158, 21730, 21970
Go Vision	21071, 21072
GPX	20699, 20769
Gradiente	20490
Greenhill	20717
Grundig	20539
Harman/Kardon	20582, 20702
Hitachi	20573, 20664, 21919
Hiteker	20672
Initial	20717, 21931
Integra	20571, 20627, 21924
Jamo	22003
Jaton	21078
JBL	20702, 21926
Jensen	21016
JVC	20558, 20623, 20867, 21901, 21940
jWin	21049, 21051
Kenwood	20490, 20534, 20682, 21063
KLH	20717, 21020, 21149, 21939
KLH Digital	20717
Konka	20711, 20719, 20720, 20721
Koss	20651, 21980
Landel	20826
Lasonic	20798, 21173
Lecson	21533
Lenoxx	21938
LG	20591, 20801, 20869, 21906
Liquid Video	21980
LiteOn	21058, 21158
Loewe	20511
Magnasonic	20651, 20769
Magnavox	20503, 20539, 20646, 20675, 20821, 21914, 21976
Malata	20782, 21159
Marantz	20539
McIntosh	21533
Memorex	20695
Microsoft	20522
Mintek	20717, 20839, 21990
Mitsubishi	20521, 21521
Momitsu	21082
NAD	20591, 20692
NEC	20785
Nesa	20717
Next Base	20826
Niro	22024
Norcent	20872, 21003, 21107, 21923
Nova	21923
Onkyo	20503, 20627, 20792, 21924, 21985
Orion	20695
Oritron	20651, 21980
Panasonic	20490, 20503, 20632, 21362, 21462, 21490, 21762, 21907, 21908, 21909, 21910, 21925, 21986, 21990, 22017
Philco	22000
Philips	20503, 20539, 20646, 20675, 20854, 21914, 20885
PianoDisc	21024
Pioneer	20525, 20571, 20631, 20632, 20638, 21571, 21902, 21965
Polaroid	21020, 21061, 21086, 21200, 21998
Polk Audio	20539
Portland	20770
Presidian	20675
Prima	21016
Princeton	20674
Proceed	20672
Proscan	20522
ProVision	20778
Qwestar	20651
RCA	20522, 20571, 20717, 20822, 21022, 21132, 21193, 21913, 21965, 21974
Regent	21938
Rio	20869, 22002
Rotel	20623
Rowa	20823
Saba	21977
Sampo	20698, 20752
Samsung	20490, 20573, 20744, 20820, 20899, 21044, 21075, 21932, 21979
Sansui	20695
Sanyo	20670, 20695, 20873, 21919, 21967
Sensory Science	21158
Sharp	20630, 20675, 20752
Sharper Image	21117, 21995
Sherwood	20633, 20770, 21043, 21077
Shinsonic	20533, 20839, 21931
Sigma Designs	20674
Sonic Blue	20869, 21099, 21970, 22002
Sony	20533, 20772, 20864, 21033, 21533, 21903, 21904, 21934, 21981, 22020
Sova	21122
Sungale	21074
Superscan	20821
SVA	20860, 21105
Sylvania	20630, 20675, 20821
Symphonic	20675
Teac	20717, 20809, 21984
Technics	20490
Technosonic	20730
Techwood	20692
Terapin	21031
Theta Digital	20571
Tivo	21996
Toshiba	20503, 20695, 21045, 21154, 22006, 21988, 21996
Tredex	20799, 20800, 20803, 20804
Urban Concepts	20503
US Logic	20839
V	21064
Vizio	21064, 21226
Vocopro	21027
Xbox	20522
Xwave	21001
Yamaha	20490, 20539, 20545
Yamakawa	20872
Zenith	20503, 20591, 20869, 21906

Setup Codes for Satellite Receivers

AlphaStar	00772
Chaparral	00216
Crossdigital	01109
DirecTV	00099, 00247, 00392, 00566, 00639, 00724, 00749, 00819, 01076, 01108, 01109, 01142, 01392, 01414, 01442, 01443, 01444, 01639, 01640, 01749, 01856
Dish Network	00775
Dish Network System	00775, 01005, 01170, 01505, 01775
Dishpro	00775, 01005, 01505, 01775
Echostar	00775, 01005, 01170, 01505, 01775
Expressvu	00775, 01775
Funai	00338
GE	00392, 00566
General Instrument	00869
GOI	00775, 01775
Goodmans	01246
Hisense	01535
Hitachi	00214, 00489, 00491, 00819, 01250, 00023, 00201
HTS	00775, 01775
Hughes	00749, 01442, 01749
Hughes Network Systems	00749, 01142, 01442, 01443, 01444, 01749
iLo	01535

Setup Codes for Satellite Receivers

(continued)

Jerrold	00869
JVC	00492, 00775, 01170, 01775
LG	01226, 01414
Magnavox	00722, 00724
Matsushita	00214, 00340, 00500
Memorex	00724
Mitsubishi	00749
Motorola	00856, 00869
NEC	00496, 01270
Next Level	00869
Panasonic	00214, 00247, 00340, 00500, 00701
Paysat	00724
Philips	00099, 00722, 00724, 00749, 00819, 01076, 01142, 01442, 01749
Pioneer	01442
Proscan	00392, 00566
Proton	01535
RadioShack	00869
RCA	00143, 00392, 00566, 00855, 01392
Samsung	01108, 01109, 01142, 01276, 01442
Sanyo	00493, 01219
Sharp	00494
Sony	00163, 00294, 00639, 01639, 01640
Star Choice	00869
Tivo	01142, 01442, 01443, 01444
Toshiba	00486, 00749, 00790, 00819, 01285, 01749
UltimateTV	01392, 01640
Uniden	00722, 00724
US Digital	01535
USDTV	01535
Voom	00869
Zenith	01856

Setup Codes for TVs

A-Mark	10003
Abex	10032
Admiral	10093, 10463
Advent	10761, 10783, 10815, 10817, 10842, 11933
Adventura	10046
Aiko	10092
Aiwa	11910, 11911, 11914
Akai	10030, 10060, 10672, 10702, 10812, 11903, 11935
Alaron	10179
Albatron	10700, 10843
Ambassador	10177
America Action	10180
Ampro	10751
Anam	10180
Anam National	10055, 10161
AOC	10003, 10019, 10030, 10052, 10185
Apex Digital	10156, 10748, 10765, 10767, 10879, 11943
Archer	10003
Audiovox	10003, 10092, 10180, 10451, 10623, 10802, 10875, 11937, 11951, 11952
Aventura	10171
Axion	11937
Belcor	10019
Bell & Howell	10016, 10154
BenQ	11032, 11756
Boxlight	10893
Bradford	10180
Brockwood	10019
Broksonic	10003, 10180, 10236, 10463, 11905, 11911, 11929, 11935, 11938
Candle	10030, 10046, 10056, 10186
Carnivale	10030
Carver	10054, 10170
Celebrity	10000
Celera	10765
Changhong	10765
Citizen	10030, 10039, 10046, 10056, 10060, 10092, 10186, 10280, 11928
Clairtone	10185
Clarion	10180
Colt	11906
Commercial Solutions	10047, 11447
Concerto	10056
Contec	10157, 10180, 10185
Craig	10161, 10180
Crosley	10054
Crown	10039, 10180
Curtis Mathes	10016, 10030, 10039, 10047, 10054, 10056, 10060, 10093, 10145, 10154, 10166, 10451, 10466, 10702, 11147, 11347, 11919
CXC	10180
Daewoo	10019, 10039, 10092, 10451, 10623, 10661, 10672, 11661, 11909, 11928
Daytron	10019
Dell	11080, 11178, 11454
Denon	10145, 10511
Denstar	10628
Dumont	10017, 10019
Durabrand	10003, 10171, 10178, 10180, 10463, 11034, 11463
Dwin	10093, 10720, 10774
Electroband	10000, 10185
Electrograph	11755
Electrohome	10381
Emerson	10019, 10038, 10039, 10154, 10171, 10177, 10178, 10179, 10180, 10185, 10236, 10280, 10282, 10451, 10463, 10623, 11905, 11909, 11911, 11928, 11929, 11944
Envision	10030, 10813
Epson	10833, 10840
ESA	10171, 10812
Fisher	10154, 10159
Fujitsu	10179, 10186, 10683, 10809, 10853
Funai	10171, 10179, 10180, 10264, 10342, 11904, 11913
Futuretech	10180
Gateway	11755, 11756
GE	10021, 10027, 10047, 10051, 10055, 10135, 10178, 10282, 10451, 11347, 11447, 11907, 11917, 11919, 11922
General	10186
Gibralter	10017, 10019, 10030
Go Video	10886
GoldStar	10001, 10019, 10030, 10032, 10178, 11926
Goodmans	10360
Grundig	10683
Grunpy	10179, 10180
Haier	10768, 11034
Hallmark	10178
Harley Davidson	10179, 11904
Harman/Kardon	10054
Harvard	10180
Havermy	10093
Helios	10865
Hello Kitty	10451
Hisense	10748
Hitachi	10016, 10032, 10038, 10056, 10145, 10151, 10178, 10179, 11145, 11150, 11245, 11904
Hyundai	10849
Infinity	10054
Inteq	10017
Janeil	10046
JBL	10054
JCB	10000
Jensen	10761, 10815, 10817, 11933
JVC	10036, 10053, 10160, 10653, 11253, 11923
Kaypani	10052
KEC	10180
Kenwood	10019, 10030
KLH	10765, 10767
Kloss	10024, 10046
Konka	10628, 10632, 10638, 10703, 10707, 11939, 11940
KTV	10030, 10039, 10180, 10185, 10280
LG	10178, 10442, 10700, 10856, 11178, 10006, 10022
Lloyd's	11904
Loewe	10136
Logik	10016
Luxman	10056
LXI	10047, 10054, 10154, 10156, 10178
Magnasonic	11913, 11928
Magnavox	10020, 10024, 10030, 10036, 10054, 10096, 10179, 10186, 10187, 10386, 10706, 10802, 11254, 11454, 11904, 11913, 11931, 11944
Magnin	11907
Majestic	10016
Marantz	10030, 10054, 10704, 10854, 10855, 11154, 11454
Maruman	10391, 10627
Matsushita	10161, 10250, 10650
Maxent	11755
Megapower	10700
Megatron	10003, 10145, 10178
MEI	10185
Memorex	10016, 10150, 10154, 10178, 10179, 10463, 11911, 11920, 11924, 11926, 11927
MGA	10019, 10030, 10150, 10178, 11907
Midland	10017, 10032, 10039, 10047, 10051, 10135
Minutz	10021
Mitsubishi	10019, 10036, 10093, 10150, 10178, 10250, 10836, 10868, 11150, 11250, 11917
Monivision	10700, 10843
Motorola	10055, 10093
MTC	10019, 10030, 10056, 10060, 10185
Multitech	10180
NAD	10156, 10178, 10866
NEC	10019, 10030, 10036, 10056, 10156, 10170, 10474, 10497, 10882, 11704
NetTV	11755
Nikko	10030, 10092, 10178
Norcent	10748, 10824
Noshi	10018
NTC	10092
Onwa	10180
Optimus	10154, 10166, 10250, 10650, 11913, 11924, 11927
Optoma	10887
Optonica	10093, 10165
Orion	10179, 10236, 10463, 11463, 11905, 11911, 11929
Panasonic	10051, 10055, 10161, 10250, 10650, 11410, 11919, 11924, 11927, 11941, 11946, 11947
Penney	10003, 10018, 10019, 10021, 10027, 10030, 10032, 10039, 10047, 10051, 10060, 10135, 10156, 10178, 11347, 11907, 11919, 11926
Philco	10019, 10020, 10030, 10054, 10096
Philips	10037, 10054, 10690, 11154, 11454
Pilot	10019, 10030, 10039
Pioneer	10038, 10166, 10679, 10866, 11457
Polaroid	10765, 10865
Portland	10019, 10039, 10092
Prima	10761, 10783, 10815, 10817, 11933

Setup Codes for TVs *(continued)*

Princeton	10700, 10717
Prism	10051
Proscan	10047, 10466, 11347, 11447, 11922
Proton	10003, 10052, 10178, 10466
Pulsar	10017, 10019
Quasar	10051, 10055, 10165, 10250, 10650, 11919, 11924
RadioShack	10019, 10030, 10032, 10039, 10047, 10056, 10154, 10165, 10178, 10180, 11904, 11920
RCA	10018, 10019, 10038, 10047, 10090, 10135, 10679, 11047, 11147, 11247, 11347, 11447, 11547, 11907, 11917, 11919, 11922, 11948, 11953, 11958
Realistic	10019, 10030, 10032, 10039, 10056,10154, 10165, 10178, 10180
Rhapsody	10185
Runco	10017, 10030, 10497, 10603
Sampo	10030, 10032, 10039, 10052, 11755
Samsung	10019, 10030, 10032, 10056, 10060, 10178, 10587, 10702, 10766, 10812, 10814, 11060, 11903
Samsux	10039
Sansui	10463, 11904, 11911, 11929, 11935
Sanyo	10088, 10154, 10159, 10376, 10424, 10798, 10799, 10893, 11907
Scimitsu	10019
Scotch	10178
Scott	10019, 10178, 10179, 10180, 10236
Sears	10047, 10054, 10056, 10154, 10156, 10159, 10171, 10178, 10179, 11904, 11926
Sharp	10039, 10093, 10157, 10165, 10256, 10386, 10491, 10688, 10689, 10787, 10818, 10851, 11917
Sharper Image	11950
Sheng Chia	10093
Shogun	10019
Signature	10016
Simpson	10186, 10187
Sole	10813
Sony	10000, 10080, 10111, 10834, 11100, 11300, 11904, 11925
Soundesign	10178, 10179, 10180, 10186
Sova	11952
Spectricon	10003
Squareview	10171
SSS	10019, 10180
Starlite	10180
Studio Experience	10843
Superscan	10093, 10864
Supre-Macy	10046
Supreme	10000
SVA	10587, 10748, 10768, 10865, 10870, 10871, 10872
Sylvania	10020, 10030, 10054, 10096, 10171, 10381, 11931, 11944
Symphonic	10171, 10180, 11904, 11913
Tandy	10093
Tatung	10003, 10055, 11756
Technics	10051, 10250
Technol Ace	10179
Techview	10847
Techwood	10003, 10051, 10056
Teknika	10016, 10019, 10039, 10054, 10056, 10060, 10092, 10150, 10179, 10180, 10186
Telefunken	10056, 10702
Thomas	11904
TMK	10056, 10177, 10178
TNCi	10017
Toshiba	10036, 10060, 10154, 10156, 10509, 10650, 10832, 10845, 11156, 11256, 11356, 11656, 11704, 11918, 11935, 11936, 11945
Tosonic	10185
Totevision	10039
Trical	10157
TVS	10463
Ultra	10391
Universal	10027
Vector Research	10030
Victor	10036, 10053, 10160, 10653
Vidikron	10054
Vidtech	10019, 10036, 10178
Viewsonic	10857, 10864, 10885, 11755
Viking	10046
Vizio	10864, 10885, 11756
Wards	10016, 10019, 10020, 10021, 10027, 10030, 10054, 10056, 10080, 10096, 10111, 10165, 10178, 10179, 10866, 11156
Waycon	10156
Westinghouse	10000, 10451, 10885, 10889
White Westinghouse	10463, 10623, 11909
Yamaha	10019, 10030, 10769, 10833, 10838, 10839
Zenith	10016, 10017, 10092, 10178, 10463, 11145, 11904, 11909, 11911, 11929
Zonda	10003

Setup Codes for VCRs

ABS	21972
Admiral	20048, 20209, 20479
Adventura	20000
Aiko	20278
Aiwa	20000, 20037, 20124, 20307, 20348, 20406, 20468, 20479
Akai	20041, 20061, 20106, 20175
Alienware	21972
America Action	20278
American High	20035
Asha	20240
Audiovox	20037, 20278
Beaumark	20240
Bell & Howell	20104
Broksonic	20002, 20121, 20184, 20209, 20295, 20348, 20479, 21479
Calix	20037
Canon	20035, 20167, 21174
Carver	20081
CCE	20072, 20278
Citizen	20037, 20278, 21278
Colt	20072
Craig	20037, 20047, 20072, 20240, 20271
Curtis Mathes	20035, 20041, 20060, 20162, 20760, 21035
Cybernex	20240
CyberPower	21972
Daewoo	20045, 20278, 20561, 20637, 21278
Dell	21972
Denon	20042
DirecTV	20739, 21949, 21954, 21989
Dish Network	21944
Dish Network System	21943, 21944, 21945, 21946
Dishpro	21943, 21944
Durabrand	20038, 20039
Dynatech	20000
Echostar	21943, 21944, 21945, 21946
Electrohome	20037, 20043
Electrophonic	20037
Emerex	20032
Emerson	20000, 20002, 20036, 20037, 20043, 20061, 20068, 20121, 20184, 20208, 20209, 20212, 20278, 20295, 20348, 20479, 20561, 20593, 20637, 21278, 21479, 21593
Euro1	21962
Expressvu	21944
Fisher	20047, 20054, 20066, 20104
Fuji	20033, 20035
Fujitsu	20045, 20052, 20366
Funai	20000, 20593, 21593
Garrard	20000
Gateway	21972
GE	20035, 20060, 20202, 20240, 20760, 20761, 20807, 21035, 21060
General	20045, 20052, 20366
Go Video	20240, 20432, 20526, 20643
GOI	21944
GoldStar	20037, 20038, 21237
Gradiente	20000
Harley Davidson	20000
Harman/Kardon	20038, 20081
Harwood	20068, 20072
Hauppauge	21992
Headquarter	20046
Hewlett Packard	21972
HI-Q	20047
Hitachi	20000, 20037, 20041, 20042, 20089, 20105, 20166, 21037,
Howard Computers	21972
HP	21972
HTS	21944
Hughes Network Systems	20042, 20739, 21949
Humax	20739
Hush	21972
Hyundai	21951
iBUYPOWER	21972
Jensen	20041
JVC	20008, 20041, 20067, 20384, 21162, 21944, 21945
KEC	20037, 20278
Kenwood	20038, 20041, 20067, 20384
KLH	20072
Kodak	20035, 20037
LG	21037, 22010
Linksys	21972
Lloyd's	20000, 20208
Logik	20072
LXI	20037
Magnasonic	20593, 21278
Magnavox	20000, 20035, 20039, 20081, 20110, 20563, 20593, 21781
Magnin	20240
Marantz	20035, 20081, 21381
Marta	20037
Matsushita	20035, 20162, 20226, 20227, 20367, 21162
Media Center PC	21972
MEI	20035
Memorex	20000, 20035, 20037, 20039, 20046, 20047, 20048, 20104, 20162, 20209, 20240, 20307, 20348, 20479, 21037, 21162, 21237, 21262
MGA	20043, 20061, 20240
MGN Technology	20240
Microsoft	21972
Mind	21972
Minolta	20042, 20105
Mitsubishi	20043, 20061, 20067, 20173, 20807
Motorola	20035, 20048
MTC	20000, 20240
Multitech	20000, 20072
NAD	20058
NEC	20038, 20040, 20041, 20067, 20104, 20370
Nikko	20037
Nikon	20034, 20253
Niveus Media	21972
Noblex	20240
Northgate	21972
Olympus	20035, 20226, 21046
Onkyo	20222

Setup Codes for VCRs (continued)

Optimus	20037, 20048, 20058, 20104, 20162, 20432, 20593, 21048, 21062, 21162, 21262
Optonica	20062
Orion	20002, 20184, 20209, 20295, 20479, 21479
Panarex	21950
Panasonic	20035, 20077, 20162, 20225, 20226, 20227, 20367, 20614, 20616, 21035, 21062, 21162, 21262
Pansat	21950
Penney	20035, 20037, 20038, 20040, 20042, 20054, 20240, 21035, 21237
Pentax	20042, 20105
Philco	20035
Philips	20035, 20062, 20081, 20110, 20618, 20739, 21081, 21181, 21381, 21949
Pilot	20037
Pioneer	20058, 20067
Polk Audio	20081
Presidian	21593
Profitronic	20240
Proscan	20060, 20202, 20760, 20761, 21060, 21954
Protec	20072
Pulsar	20039
Quarter	20046
Quartz	20046
Quasar	20035, 20077, 20162, 21035, 21162
RadioShack	20000, 21037
Radix	20037
Randex	20037
RCA	20042, 20058, 20060, 20077, 20105, 20106, 20202, 20240, 20453, 20760, 20761, 20807, 20880,21035, 21060, 21954,21964, 21989
Realistic	20000, 20035, 20037, 20046, 20047,20048, 20062, 20066,20104
ReplayTV	20614, 20616
Ricavision	21972
Ricoh	20034, 20253
Runco	20039
Samsung	20045, 20240, 20739, 21014
Samtron	20643
Sanky	20039, 20048
Sansui	20000, 20041, 20067, 20209, 20271,20479, 21479
Sanyo	20046, 20047, 20104, 20159, 20240,20368, 20369
Scott	20043, 20045, 20121, 20184, 20210, 20212
Sears	20000, 20035, 20037, 20042, 20046, 20047, 20054, 20066, 20104, 20105, 21237
Sharp	20048, 20062, 20363, 20738, 20807, 20848
Shintom	20072
Shogun	20240
Singer	20072
Sonic Blue	20614, 20616
Sony	20000, 20032, 20033, 20034, 20035, 20253, 20586, 20636, 20639, 20640, 21032, 21232, 21956, 21957, 21972
Stack 9	21972
STS	20042
Sunpak	20253
Sylvania	20000, 20035, 20043, 20081, 20110, 20593, 21593, 21781
Symphonic	20000, 20593, 21593
Systemax	21972
Tagar Systems	21972
Tatung	20041
Teac	20000, 20041
Technics	20035, 20162
Teknika	20000, 20035, 20037, 20052
Thomas	20000
Tivo	20618, 20636, 20739, 21956, 21957, 21503
TMK	20036, 20208, 20240
Toshiba	20042, 20043, 20045, 20066, 20209, 20210, 20212, 20366, 20828, 20845, 21008, 21145, 21972, 21503
Totevision	20037, 20240
Touch	21972
UltimateTV	21989
Unitech	20240
Vector	20045
Vector Research	20038, 20040
Victor	20041
Video Concepts	20040, 20045, 20061
Videomagic	20037
Videosonic	20240
Viewsonic	21972
Villain	20000
Voodoo	21972
Wards	20000, 20035, 20042, 20047, 20048, 20060, 20062, 20072, 20081, 20212, 20240, 20760
White Westinghouse	20072, 20209, 20637
XR-1000	20000, 20035, 20072
Yamaha	20038
Zenith	20000, 20033, 20034, 20039, 20209, 20479, 20637, 21139, 21479
ZT Group	21972

MCA-C3 Multizone Controller

Dimensions:	17"W x 3.5"H x 17.2"D (43.2 x 9 x 43.6 cm)
Weight:	28.8 lbs. (13.1 kg)
Power Supply:	120 or 240 VAC
Fuse Rating:	100-120V/T3.15A 250V US and Canada 220-240V/T1.25A 250V Europe
Power Consumption:	400 watts maximum
Standby Power Consumption:	<1.0 watt
Frequency Response:	20Hz-20kHz +/- 1 dB at 1W output into 8 ohms
Watts per channel:	20W RMS into 8 ohms
Total Harmonic Distortion:	<0.10%
Signal to Noise Ratio:	93 dB unweighted, 96 dB A-weighted
Audio Source Inputs:	6 (including internal tuner)
Audio Zone Outputs:	6 Speaker Level (Zones 1-6) (2 Line Level fixed or variable)
Trigger Outputs:	6 12VDC 100mA, 1 Home theater
Trigger Inputs:	1 Home Theater 12VDC max 1 Page 12VDC max
Speaker connection:	6 detachable 4 pole connectors
Keypad ports:	6 RJ45 T568A standard
IR Outputs:	6 routed, 1 common
Communication ports:	Front- 1 USB 2.0/1.1 Rear- 1 Serial RS232, 19.2 kHz baud rate 1 Ethernet RJ45, 10/100 Base T 2 RJ45 RNET Links In/Out
Frequency Range:	AM 530 - 1710 kHz FM 87.7 - 107.9 MHz
Antenna impedance AM:	300 Ohm balanced
Impedance FM:	75 Ohm unbalanced
Sensitivity:	AM: @20 dB S/N 55 dBu FM: @30 dB S/N 6 dB max 12 dBu
Image rejection:	AM: 33 dB FM: 80dB
S/N ratio:	AM: 45dB FM: 60 dB

MDK-C5 Keypad

Power requirements:	275mA @ 12VDC MAX
CAT-5e connection:	RJ45 (T568A standard)
Display:	70 mm W x 35 mm H high resolution LCD
Controls:	Eleven backlit hard buttons
Wall surface dimensions:	4.5"W x 4.5"H (11.43 x 11.43 cm)
Inside box dimensions:	3.5"W x 1.5"D x 2.75"H (8.9 x 3.8 x 6.9 cm)
Weight:	1 lbs. (0.45 kg)

The MCA-C3 Controller meets EU Standby Power Requirements

Warranty

The Russound MCA-C3 Controller Amplifier and MDK-C5 Keypad are 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.

Russound®

MCA-C3

6 Source Multizone Controller Amplifier
User and Installation Manual

©2010 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.
5 Forbes Road, Newmarket, NH 03857
tel 603.659.5170 • fax 603.659.5388
email: tech@russound.com www.russound.com

28-1350 05/28/10