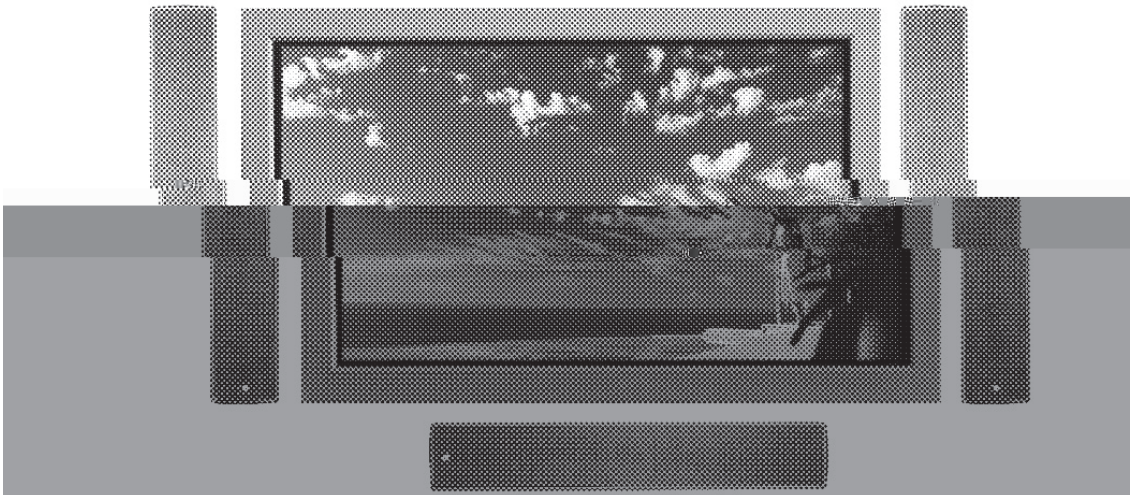


**R**Russound®

# LCR7

Complement® On-Wall LCR Loudspeaker

## Instruction Manual



# INTRODUCTION

## Product Description

The Complement® LCR7 Loudspeaker is a wall-mounted unit for home theater and stereo audio applications. Its slender profile is designed to complement the appearance of most flat-panel video displays. The speaker comes with two different-colored grilles to coordinate easily with the room décor or other equipment.

In a home theater, the LCR7 is intended for use in the front left, center, and right positions adjacent to the video display. In stereo audio applications, a pair of LCR7 speakers can be used for the left and right channels.

The LCR7 features Corner Bessel Array™ technology in the driver array for wide sound dispersion. A special circuit is used to compensate for the response of certain drivers to provide uniform directivity at higher frequencies. This provides a more uniform sound field in the listening area. The LCR7 is ideally suited for use in the center channel position.

The LCR7 is designed for use with the three channel system. The LCR7 provides identical voice reproduction and imaging.

Because the LCR7 is magnetically shielded, it can be used next to CRT televisions without causing picture distortion.

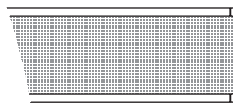
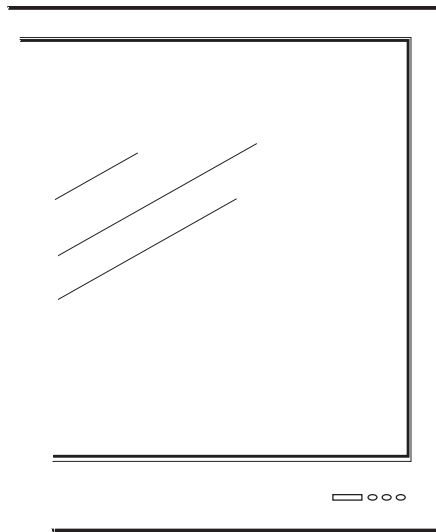
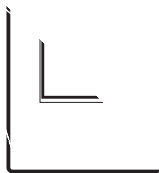
The LCR7 features an array of six mid/low-frequency drivers coupled with a single high-frequency driver to reproduce most of the audio spectrum. Its nominal impedance is 6 ohms. A separate subwoofer is recommended to reproduce the lowest frequencies.

## Surround speakers

Although intended primarily for use as front speakers, the LCR7 can also be used as surround speakers in a multichannel audio system. As an alternative, any Russound in-wall or in-ceiling speaker would work well for the surround channels.

## Subwoofer

Russound's Complement Series subwoofers are ideal for use with the LCR7 to extend the bass response of the system. We recommend setting the subwoofer's crossover frequency at 100 Hz.



## Speaker Placement

With either multichannel or stereo audio, careful speaker placement is important for proper imaging. Imaging is the ability of the speaker system to reproduce sounds so they appear to come from between the speakers.

Following are some general placement guidelines for home theater applications. Other factors to consider for speaker placement include:

- Suitable wall surfaces for mounting the speakers
- Proximity to room corners
- Locations where speaker cables can be run, either hidden in the wall or attached to its surface

### Home theater

In a multichannel audio system for a home theater, one LCR7 should be installed horizontally above or below the video display for the center channel, and two should be installed vertically to the left and right of the display for the main front channels.

The center-channel speaker should be as close to ear level as possible; thus, if the video display is mounted high, the speaker should be below it. If the display is

low, the speaker should be above it. The speaker should then be angled up or down as needed so that its axis points toward the ear level of the listeners.

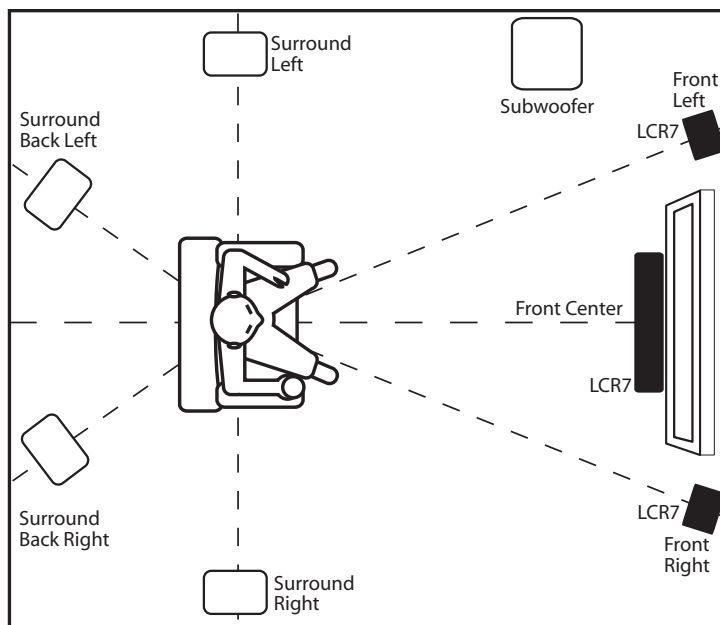
The left and right speakers can be installed next to the display or farther apart as desired. They should be angled inward so their axes point toward the center listener.

For best results, we recommend placing the left and right speakers so their centers are level with the listeners' ear height. However, if the video display is centered above or below ear height, it may be preferable to install the left and right speakers level with the display for aesthetic reasons.

### Placement near corners

Placing a speaker near a corner of a room can cause sonic reflections off the side wall. This can result in a loss of clarity and poor imaging. Accordingly, we do not recommend placing the LCR7 near a corner unless the side wall is covered with sound-absorptive material.

Generally, the best acoustic performance will result if the left and right speakers are placed in similar positions on the same type of wall surface.



*Speaker placement for a home theater*

# INSTALLATION

## Prewiring

Run a separate two-conductor stranded copper speaker cable of at least 16 AWG (1.5 mm) from the amplifier or receiver to each speaker. Leave ample cable at the head end to reach the amplifier terminals. Label the cables so you will know which cable connects to each channel.

We recommend running the cables through the walls to the speaker locations whenever possible so as to hide them. Be sure to use cable with the appropriate fire resistance rating for the application. Check the local building code for specific requirements. Russound offers a two-conductor speaker cable with a Class 3 fire rating for in-wall installation.

When running a speaker cable parallel to an AC power cable, keep them at least 12 inches (30 cm) apart to minimize electromagnetic interference. If the speaker cables must cross AC wiring, cross them at right angles.

At each speaker location, bring the speaker cable out of the wall in the center of the mounting bracket, leaving about 2 feet (0.6 m) for connecting to the speaker.

## Installing the Mounting Bracket

**Note:** The mounting bracket must be securely attached to the wall. For a standard hollow wall, we recommend screwing the bracket to the wall studs if possible. If the speaker must be mounted between studs, use at least three expandable hollow-wall anchors to secure the bracket. For a masonry wall, use suitable anchors.

### Installation on a hollow wall

1. Once you have determined roughly where the speakers will be mounted, use a stud finder to locate the wall studs and mark their location.
2. Position the provided template where you want each speaker, making sure to leave enough clearance for rotating the speaker in the mounting bracket. Mark the mounting screw locations.
3. If you are attaching the bracket to studs, use a small drill to make pilot holes for the mounting screws. If you are using hollow-wall anchors, use a drill of the size recommended by the anchor manufacturer.
4. Screw the mounting bracket to the wall studs with appropriate screws, or secure the wall anchors in the wall and attach the bracket to them.

## Installation on masonry

1. Obtain masonry anchors suitable for the wall material.
2. Position the provided template where you want each speaker, making sure to leave enough clearance for rotating the speaker in the mounting bracket. Mark the mounting screw locations.
3. With a masonry drill, make pilot holes for the anchors.
4. Attach the bracket to the wall with the anchors.

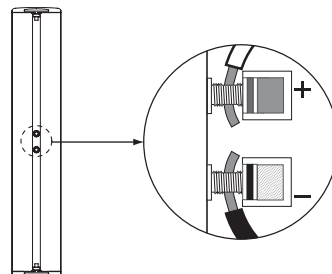
## Connecting the Speaker

Connect the speaker cable before attaching the speaker to the mounting bracket.

1. Strip 3 to 4 inches (7.6 to 10 cm) off the end of the cable jacket. Then strip ½ inch (1.3 cm) of insulation off the two wires.
2. Make sure the wire strands are twisted together so there are no strands separated from the bundle.
3. Connect the wires to the speaker terminals, being sure to observe proper polarity. For standard speaker cable with red and black wires, connect the red wire to the red positive (+) terminal and the black wire to the black negative (-) terminal.

**Note:** Some speaker cables may have other ways of designating polarity. For example, cable with a clear jacket usually has a copper-colored wire for positive and a silver-colored wire for negative. In a cable with white and black wires, the white is positive and the black is negative. Cable with both wires the same color may have grooves, ribs, or stripes on the positive wire.

4. 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.



*Speaker cable connection*



## Attaching the Speaker

1. Place the disc spring washers over the socket head screws with the convex sides against the screw heads.
2. Thread the socket head screws into the mounting bracket. Leave at least  $\frac{1}{4}$  inch (6 mm) of space between the washers and the bracket ends.
3. Align the slots on the ends of the speaker with the screws and slide the speaker fully onto the bracket, pushing any excess cable back into the wall. Make sure the washers are between the screw heads and the speaker ends. Finger tighten the screws.
4. Aim the speaker according to the guidelines given in the previous section on speaker placement.
5. Tighten the screws with the hex key provided.
6. Press the end caps into place.

## Changing the Grille

The LCR7 comes with two different grilles, one of which is attached to the speaker. To remove the grille:

1. Starting in one corner, insert the grille removal tool into the edge of the grille and gently pull it slightly away from the speaker. Continue along the short dimension and then around the entire edge of the grille. Do not pull the grille completely off the speaker until the edge is loosened all the way around.
2. When the entire edge is loosened, grasp the grille by the edges and gently pull it off the speaker evenly. Avoid bending the grille.

To attach the grille:

1. Align the edge of the grille with the recess in the speaker cabinet.
2. Gently push the grille in place evenly around the edge. Do not push on the center of the grille.

## Rotating the Logo Badge

The logo badge is permanently attached to the grille, but can be rotated to accommodate both vertical and horizontal speaker orientations. To rotate the badge, simply pull it straight away from the grille and turn it.

## Connecting the Amplifier or Receiver

The LCR7 is designed to be driven by an amplifier or receiver with a rated output of up to 150 watts RMS per channel into 6 ohms.

1. Make sure the amplifier or receiver is turned off.
2. Strip 1 to 2 inches (2.5 to 5 cm) off the end of each cable's jacket. Then strip just enough insulation off each wire to make a secure connection to the amplifier's speaker terminals.
3. Make sure the wire strands are twisted together so there are no strands separated from the bundle.
4. Connect the wires to the speaker terminals, being sure to observe proper polarity. (If preferred, attach suitable connectors such as banana plugs to the wires before connecting them.)
5. 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.

## Configuring Your Receiver

Your home theater receiver or surround processor most likely has a choice of settings for different types of speakers. If your receiver or processor has an auto setup procedure, you will probably get the best results using the auto setup. If you use a manual speaker setup procedure, you will get the best results by setting the LCR7 speakers to the Small setting if you are using a subwoofer, or the Large setting if you are not using a subwoofer.

## Taking Care of Your Speakers

Your LCR7 speakers are made of durable materials that need very little care. All we recommend is an occasional dusting with a soft cloth or light vacuuming with a dust brush attachment. If you vacuum the speakers, leave the grilles in place to avoid damaging the drivers.

Do not use any harsh detergents, chemical solvents, or abrasive materials on your speakers.

## Saving your speakers from signal clipping

When a source audio signal demands more power than the amplifier can produce, signal clipping can result. This means the negative and positive peaks of the amplifier's output signal are clipped off. This can occur if the input signal level is too high.

Clipping generates a direct-current (DC) component in the output signal. It also generates unwanted low-frequency or subsonic artifacts. This energy is capable of causing speaker distortion or driver damage.

Signal clipping may or may not be audible. When it is, it can be heard as distortion. Whether you can hear it or not, clipping can damage audio components, especially speakers.

Clipping can happen with a receiver when its volume control is turned up too high (above 40 to 50 percent), especially when the receiver is driving more than one speaker per channel. It can also happen when the amplifier doesn't have enough power for the speaker load. Amplifiers with high-current designs are less likely to clip because they're capable of producing more current during peaks in the audio signal.

To prevent amplifier clipping, choose an appropriate amplifier for the speaker load. Use a dedicated AV receiver or multichannel amplifier for driving the home theater speakers and a separate multiroom controller or amplifier to drive the whole-house music system. Make sure the amplifier is rated to handle the impedance of the speakers. For example, 8-ohm speakers can be driven by amplifiers rated at 4 or 8 ohms, but 4-ohm speakers require an amplifier with a 4-ohm output rating.

For home theater applications, we recommend at least 30 watts of amplifier power per LCR7 speaker. We also recommend using an amplifier with a high-current design. Keep in mind that it's generally safer to have more power available than not enough.

## Specifications

Loudspeaker type: Passive 2-way line array, single input, magnetically shielded

Mid/low-frequency drivers: (6) 3.5" (8.9 cm) polypropylene cones

High-frequency driver: 1" (2.5 cm) silk dome, wide surround

Frequency response: 104 Hz – 20 kHz  $\pm$ 3 dB

Frequency range: 88 Hz – 20 kHz +3/-6 dB

Nominal impedance: 6 ohms

Sensitivity: 85 dB SPL, 2.83 V at 1 meter

Recommended amplifier power: 30–150 watts RMS (CEA-426-B specification)

Terminals: Color-coded binding posts

Overall dimensions: 4.5" W x 25.25" H x 4.875" D (11.4 x 64.1 x 12.4 cm)  
(cabinet and mounting bracket, vertical orientation)

Mounting bracket dimensions: 2.38" W x 24.14" H x 1.5" D (6.0 x 61.3 x 3.8 cm)

Weight: 17.5 lb (7.94 kg)

Finish: Black or silver cabinet with black and silver grilles

Super Bessel Array™ is a Patent Pending technology.

## Warranty

Russound LCR7 Loudspeakers have a Limited Lifetime Warranty against defects in materials and workmanship. During the warranty period, Russound will replace any defective part and correct any defect in workmanship without charge for either parts or labor.

Russound may replace returned speakers with a product of equal value and performance. In such cases, some modifications to the mounting may be necessary and are not Russound's responsibility.

For this warranty to apply, the speaker must be installed and used according to its written instructions. If repairs are necessary, they must be performed by Russound. The speaker must be returned to Russound at the owner's expense and with prior written permission. Proof of purchase must accompany all claims. Accidental damage and shipping damage are not considered defects, nor is damage resulting from abuse or from servicing performed 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 operation or installation.
- Products that have been altered or modified.
- Any product whose identifying number or serial number has been altered, defaced, or removed.
- Normal wear and maintenance.

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 speaker 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 speaker in a corrugated container with at least 3 inches of resilient material to protect the speaker from damage in transit.

Before returning a speaker for repair, call Russound at 603.659.5170 for a Return Authorization number. Write the RA number on the shipping label and ship to: Russound, ATTN: Service, 5 Forbes Road, Newmarket NH 03857.

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 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.



# **LCR7**

Complement<sup>®</sup> On-Wall LCR Loudspeaker

## **Instruction Manual**

Russound  
5 Forbes Road, Newmarket NH 03857 USA  
Tel 603.659.5170 • Fax 603.659.5388  
www.russound.com  
Technical Support: tech@russound.com

28-0044 Revision 2 11/19/07

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