

Revel[®] Ultima Gem[®] 2 Loudspeaker Owner's Manual



Harman Specialty Group
3 Oak Park Drive
Bedford, MA 01730-1413 USA
Tel 781-280-0300
Fax 781-280-0490
www.revelspeakers.com

Customer Service
Telephone: 781-280-0300
Sales Fax: 781-280-0495
Service Fax: 781-280-0499
Product Shipments:
HSG/Revel
Returns Dept.
RMA #
801 S. 75th Avenue
Phoenix, AZ 85043

Part No. 361560-001 | Rev 1 | 12/07

"Revel," "Ultima Salon," "Ultima Voice", "Ultima Studio," "Ultima Gem," and the Revel logo are trademarks or registered trademarks of Harman International Industries, Inc. U.S. patent numbers and other worldwide patents issued and pending.

©2007 Harman International Industries, Inc. All rights reserved.

This document should not be construed as a commitment on the part of Harman Specialty Group. The information it contains is subject to change without notice. Harman Specialty Group assumes no responsibility for errors that may appear within this document.

DOCUMENTATION CONVENTIONS

This document contains general safety, installation and operation instructions for the REVEL Ultima Gem2 Speaker. It is important to read this user guide before attempting to use the product. Pay particular attention to safety instructions.

The following symbols are used in the document:



Appears on the component to indicate the presence of uninsulated, dangerous voltage inside the enclosure – voltage that may be sufficient to constitute a risk of shock.



Appears on the component to indicate important operating and maintenance instructions in the accompanying literature.

WARNING

Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in injury or death.

CAUTION!

Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in damage or destruction to part or all of the product.

Note:

Calls attention to information that is essential to highlight.

Table of Contents

ABOUT REVEL	5	MAKING CONNECTIONS	15
About Revel Ultima2 Loudspeakers	5	Single Wire Connections	17
About the Gem2	6	Bi-Wired Connections	18
Product Registration	6	Vertical Bi-Amplified Connections	19
What's in the Box	6	Horizontal Bi-Amplified Connections	20
Optional Accessories	6	OPTIMIZING PERFORMANCE	21
Wall Mounting	6	Loudspeaker Volume Level	22
UNPACKING	7	SPECIFICATIONS	23
LOUDSPEAKER OVERVIEW	8	Gem2 Specifications	23
Cabinet	8	Gem2 Dimensions	25
Driver Compliment	9	OBTAINING SERVICE	26
Filter Network	10	Product Shipment Directions:	26
Rear and Front Panel Overview	10	Appendix	1
INSTALLATION CONSIDERATIONS	12	Wall-mounting Instructions	2
Loudspeaker Accuracy	12	Ultima Gem® 2 Pedestal	3
Loudspeaker Placement	12		
Listening Room Acoustics	13		
Acoustic Treatment Materials	14		

Congratulations and Thank You for purchasing your new Revel Ultima Gem® 2 Loudspeakers. Please take the time to read the following installation and setup information in order to optimize your enjoyment of your new loudspeakers.

ABOUT REVEL

Since 1996, Revel has stood at the forefront of loudspeaker design and performance. Backed by Harman International’s world leading research and design facilities, Revel loudspeakers benefit from cutting-edge resources such as:

- Multiple **large anechoic chambers** which allow for precise testing and measurements.
- A **multi-channel listening lab** for double-blind, position independent listening tests.
- A **laser interferometer** that enables detailed driver and cabinet analysis.
- **Finite element analysis**, utilized for advanced loudspeaker modeling.
- A **stereo lithography apparatus**, which rapidly “builds” tooled parts.

ABOUT REVEL ULTIMA2 LOUDSPEAKERS

The Revel Ultima2 Series Loudspeakers exemplify subtle elegance with their smooth, rounded shapes, easily blending into a wide variety of decors. Available in either a high-gloss mahogany veneer or high-gloss black finish, the Revel Ultima2 Loudspeakers will be a welcome compliment to any fine home. The elegant shape extends to their magnetically attached grilles, which eliminates the need for any unsightly attachment hardware. The acoustically optimized baffles offer eye-pleasing shapes when the loudspeakers are used without their grilles. In fact, the complex computer designed baffles drastically reduce diffraction. Such unparalleled freedom from diffraction is a major contributor to

the standard-setting acoustic performance of the Ultima2 Series Loudspeakers. The attractive rounded shape of the loudspeaker cabinet design contribute to their superb off-axis response while their single-piece, nine-layer construction results in an extremely inert enclosure.

New transducers were designed from “the ground up” specifically for the Ultima2 Series. Featuring dual neodymium magnetic motor systems with sophisticated distortion reduction mechanisms, titanium diaphragms, and oversized voice coils, the Ultima2 Series woofers and mid-ranges represent the cutting edge in transducer design. The new 1-inch tweeter, common to all four Ultima2 Series loudspeakers, sets the standard for breathtaking transparency and low coloration with its pure beryllium dome and third-generation waveguide.

Using advanced CAD modeling and testing resources, Revel has achieved demonstrably superior sound quality. Our unique double-blind listening test facilities prove their superiority over all competitors and Revel’s development process goes well beyond proving superior performance. An exclusive “tuning” process is used in producing each and every Ultima2 series loudspeaker, matching its performance to the original reference prototype to within a fraction of a decibel. Music and cinema sound lovers can rest assured that their Ultima2 series loudspeakers sound as great as the laboratory reference.

ABOUT THE GEM2

Incorporating all the latest advancements of the new Ultima2 series, the Gem2 provides unprecedented performance in such a small form factor. The Ultima Gem2 is a 3-way loudspeaker, which can either be wall-mounted or mounted on an optional pedestal. The low profile of the Gem2 when wall-mounted allows their use as state-of-the-art flat panel display loudspeakers. Although the Gem2 Loudspeakers are compact, their 3-way design utilizes an 8" woofer with a 2" voice coil wound with ribbon wire, providing astonishing output with both low dynamic compression and distortion.

The Gem2 is equally optimized for use as a Left/Right loudspeaker in a two-channel system or as a surround loudspeaker with just a "flip of a switch", offering ideal timbre matching with other Revel Ultima2 Series Loudspeakers. Close timbre matching is especially important for multi-channel music reproduction, which can only be achieved with very high-quality monopole loudspeakers. Further, the expanded use of surround channels by film sound mixers has increased the importance of accurate timbre reproduction from surround loudspeakers. Listening to a multi-channel system utilizing Revel Ultima Gem2 loudspeakers as surround loudspeakers is truly a breathtaking experience.

PRODUCT REGISTRATION

Please register the Gem2 within 15 days of purchase. To do so, register online at the www.revelspeakers.com website or call **Harman Specialty Group Customer Service**. Retain the original, dated sales receipt as proof of warranty coverage.

WHAT'S IN THE BOX

- **(1)** Gem2 Loudspeaker
- **(1)** Grille
- **(1)** Gem2 Owners Manual
- **(1)** Wall Mount Bracket
- **(1)** Wall Mount Bracket Template

OPTIONAL ACCESSORIES

- Pedestal (Please refer to Appendix B)

WALL MOUNTING

For detail instructions on mounting your Gem2 upon a wall, please refer to the directions in Appendix A.

UNPACKING

The Gem2 requires special care and handling during unpacking. Pay particular attention to the precautions that appear in this section and throughout this owner's manual.

Warning

The speaker will not stand on its own. Be sure to keep it stable and supported while removing the packing material.

To unpack the loudspeaker perform the following steps:

1. Place the loudspeaker carton in an upright position, as indicated by the "This Side Up" indications on the carton.
2. Open the flaps as shown in Figure 1, Step 1, on the next page.
3. Without allowing the flaps to close invert the carton onto a carpeted area or soft cloth so that the open flaps of the box are on the bottom. Be careful to keep the loudspeaker within the box as you are tilting it onto the floor.
4. Lift the box off the loudspeaker and place it aside, Figure 1, Step 2. Ensure that the speaker remains stable while the carton is lifted off.
5. Carefully lift the loudspeaker into an upright position and then remove the foam packing strips from the top. Slide the grille carton out of the remaining center and bottom foam packing material. Remove the center section of packing foam by carefully sliding it up, and off the loudspeaker. Use caution to avoid damaging the transducers while removing the foam packaging, Figure 1, Step 3.
6. Place the loudspeaker on its back and carefully slide off the remaining foam packing material.

7. Remove the cloth cover and carefully remove the tape from the red protective tweeter cover.

Caution

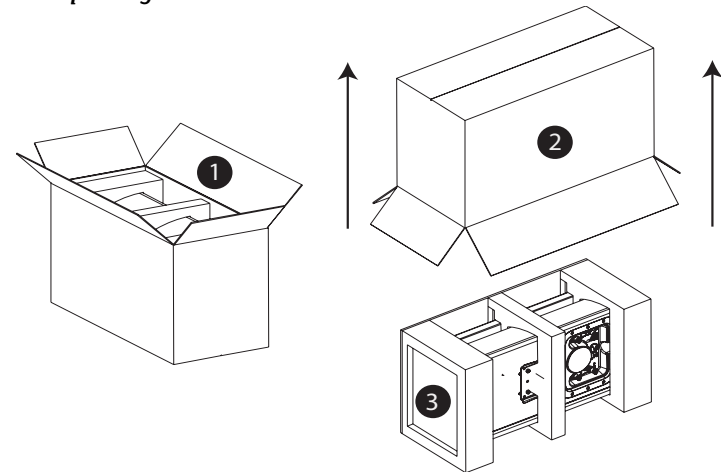
Use caution not to touch or allow any object or liquid to come in contact with the Beryllium tweeter dome. Variations in its finish are normal. Any attempt to clean the tweeter dome will result in damage, which is not covered under the limited warranty.

After unpacking the unit, carefully inspect the contents. If you discover any damage, immediately contact your Revel dealer for further assistance. .

Keep all packing materials for future shipping.

In the unlikely event a product will need repair. Revel will only accept a unit in its original shipping carton. Using any other packing materials may result in damage to the product and will void the warranty. See Service Information for additional details.

Figure 1: Unpacking Instructions



LOUDSPEAKER OVERVIEW

CABINET

The Revel Gem2 Loudspeakers exemplify subtle elegance, which easily blend in with a wide variety of decors. Available in either a high-gloss mahogany veneer or a high-gloss black finish, Gem2 Series Loudspeaker will be a welcome compliment to any home. The Gem2 reduces cabinet-induced colorations with 1-inch (25mm) thick walls and extensive internal bracing. Adjustable combination spikes/glides can be attached to the bottom of the optional pedestal for optimal stability, accommodating installations on tile, hardwood, and carpeted floors.

The cabinet's wood veneer finish does not require routine maintenance. Cabinet surfaces that have been marked with dust, fingerprints, or other dirt can be cleaned using a soft cloth and high-quality wax.

- **To clean the cabinet**, apply furniture polish to a soft cloth then use the cloth to lightly wipe the cabinet surface. Use care to avoid coming into contact with the tweeter dome or any of the other drivers.
- **To clean the grille**, gently vacuum using a soft-bristled brush vacuum attachment.

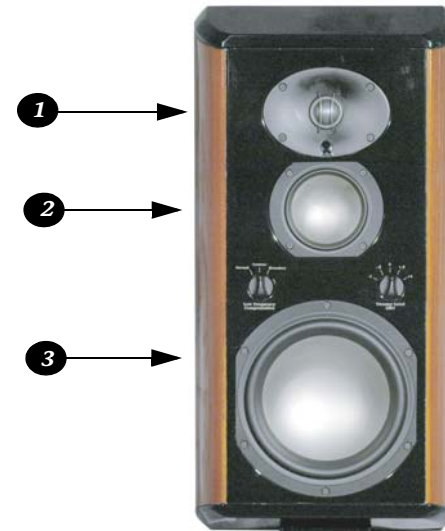
Caution

Use caution not to touch or allow any object or liquid to come in contact with the Beryllium tweeter dome. Variations in its finish are normal. Any attempt to clean the tweeter dome will result in damage which is not covered under the limited warranty. To prevent cabinet damage, do not use a cloth made with steel wool or metal polish to clean the cabinet. To prevent possible transducer damage, do not apply furniture polish directly to the cabinet or on the transducers.

Figure 2: Gem2 Loudspeaker (Pedestal Option)



Figure 3: Gem2 Loudspeaker (Wallmount)



Driver Compliment

1. **(1)** 1-inch (25mm) Beryllium tweeter
2. **(1)** 4-inch (102mm) midrange
3. **(1)** 8-inch (203mm) woofer

FILTER NETWORK

The Gem2 Loudspeakers utilize high-order networks which optimize both the on-axis and off-axis response. These sophisticated networks help to ensure smooth octave-to-octave balance and timbral accuracy. Separate woofer, midrange and tweeter filter boards prevent mutual interference between filter network components, dramatically reducing distortion over a wide dynamic range. Gold-plated binding posts and shorting straps accommodate single-wired, bi-wired, and bi-amplified connections. Low Frequency Compensation and Tweeter Level switches provide the ability to compensate for acoustic effects due to various applications and loudspeaker placement, as well as less-than-ideal listening room acoustics.

REAR AND FRONT PANEL OVERVIEW

Controls are provided on the front and rear panel of the Gem2 which allow the optimization of the Gem2 Loudspeaker response for different loudspeaker applications and placement. Refer to the “Loudspeaker Placement” section for more information. The definitions below refer to Figure 4, front and rear panels on the following page.

1. Low Frequency Compensation Switch (Front)

- Select the **Normal** setting for most stand mounted situations if the loudspeaker is located at least 3 feet (0.91m) from walls and other large objects.
- Select the **Contour** setting if mid-bass thickness is encountered in a stand-mounted application. This setting provides compensation for “boomy” or “ill-defined” bass that can result from particularly severe standing waves.

- Select the **Boundary** setting in situations where the loudspeaker is mounted on, or very close to a wall.

2. Tweeter Level (dB) Switch (Front)

The tweeter output level can be adjusted in calibrated steps by -0.5, -1.0, 0, +0.5, or +1.0 dB.

Note

Refer to the “Optimizing Performance” section for more information about the Low Frequency Compensation and Tweeter Level switches.

3. Listener Axis (Back Panel)

Use the “On-Axis” setting for stand mounted and equivalent heights on walls. Use the “Off-Axis” setting for units mounted on a wall above the listener’s ear height in order to tilt the sweet spot down to the seated listeners.

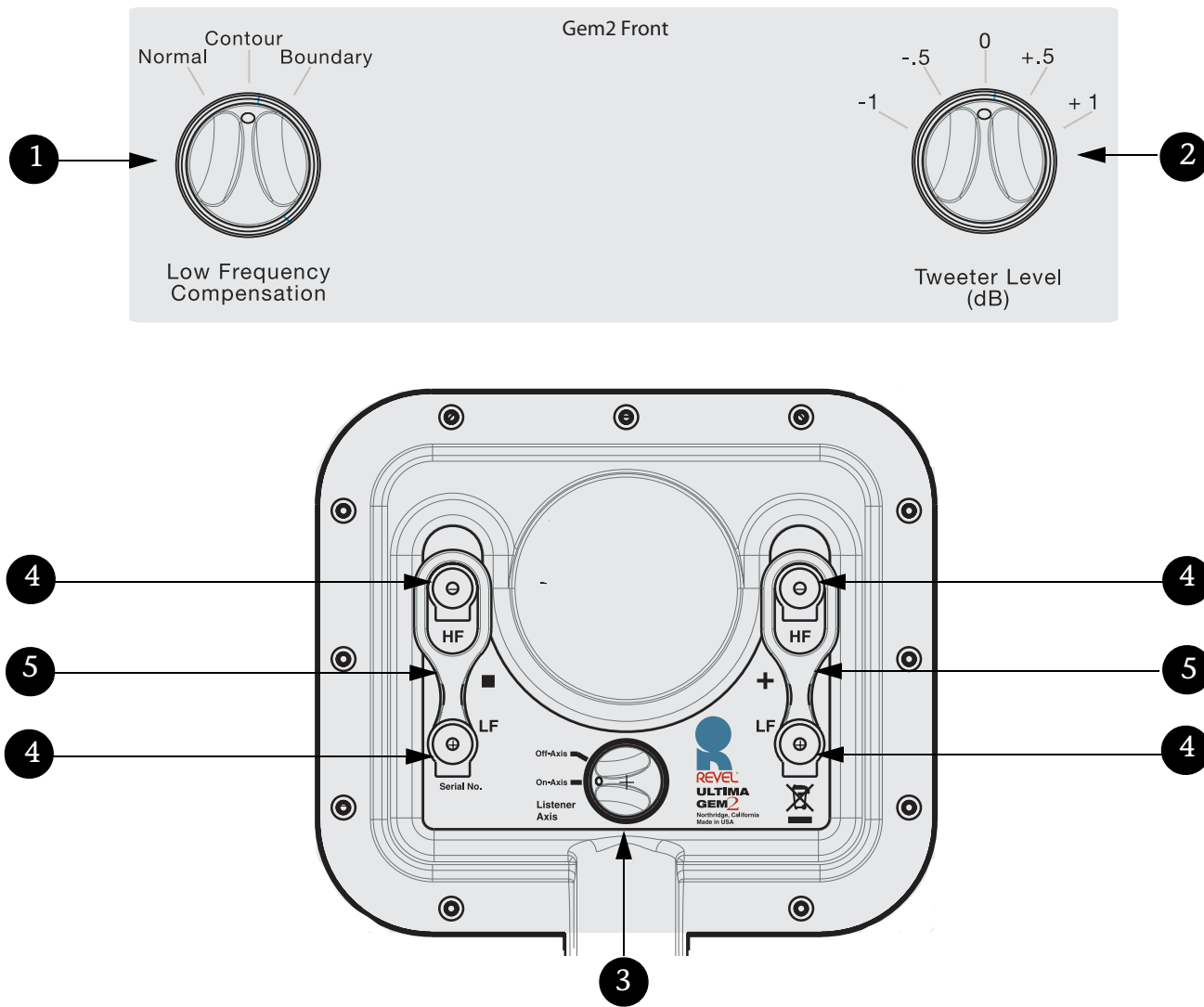
4. Input Terminals

Provides high-and low-frequency connections from the associated power amplifier(s). One pair of high-frequency and one pair of low-frequency gold-plated binding posts are available. The input terminals can be configured for single-wired, bi-wired, or bi-amplified connections. Refer to the “Making Connections” section for additional information.

5. Jumper Straps

Accommodates single-wired, bi-wired, and bi-amplified connections. Two gold-plated jumper straps are installed for single-wired connections. The jumper straps must be removed when the input terminals are used for bi-wired or bi-amplified connections. Refer to the “Making Connections” section for additional information.

Figure 4: Gem2 Front and Rear Panel



INSTALLATION CONSIDERATIONS

Loudspeaker fidelity depends on the following three factors:

1. Loudspeaker accuracy
2. Loudspeaker placement
3. Listening room acoustics

LOUDSPEAKER ACCURACY

The advanced Ultima2 design features allow the Gem2 to achieve exceptional acoustical precision. Each Gem2 is hand-tuned during manufacturing to match the production reference standard within a fraction of a decibel, ensuring incomparable loudspeaker-to-loudspeaker consistency. As a result, experimenting with loudspeaker placement and listening room acoustics have the most significant impact on the performance of the Gem2 loudspeaker.

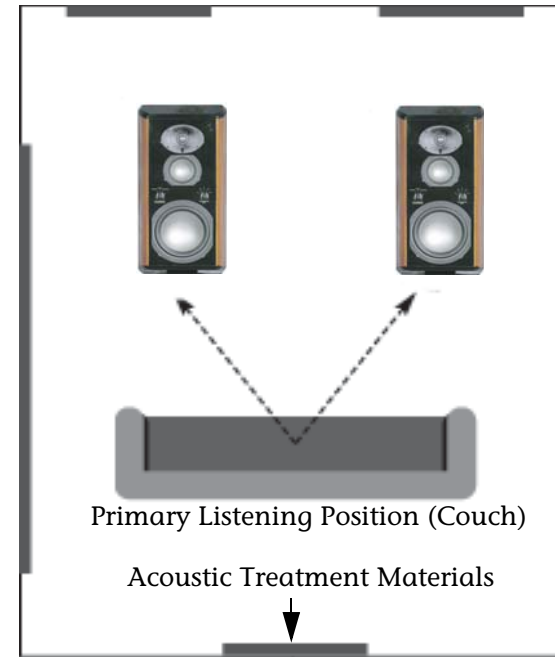
LOUDSPEAKER PLACEMENT

The bulleted items below identify important loudspeaker placement considerations for the Gem2. The Gem2 Loudspeaker can be mounted on a wall or mounted on an optional pedestal. (Some placement guidelines only apply to the pedestal-mounted installations.)

- Remove all obstructions between the speakers and the primary listening position. For instance, a coffee table between the speakers and the primary listening position will degrade imaging and timbre. Placing the speakers near large objects may also cause unwanted reflections. The Low Frequency Compensation switch can be used to optimize the loudspeakers performance for the loudspeaker placement options described in this section.

- For the best stereo imaging, place the loudspeakers at equal distances from the primary listening position and the side walls as shown in Figure 5.

Figure 5: Loudspeaker Placement



- For optimal imaging and timbre, point the speakers directly toward the primary listening position as shown in Figure 5. The toe-in angle can be reduced to widen the soundstage, even to the point at which the loudspeakers are pointing straight forward.
- Move the loudspeakers farther from the front and side listening room walls to improve stereo imaging and the sense of spaciousness in the listening space.
- Move the loudspeakers closer to the front wall of the listening room to increase bass response.

- The Gem2 is magnetically shielded to minimize any effect on CRT video monitors. However, small, stray magnetic fields may affect large CRT monitors located in close proximity to the Gem2. These magnetic fields decrease rapidly with distance, so moving the loudspeakers farther away from the monitor will reduce interference. It is important to confirm that the Gem2 is suitable for use with the intended CRT monitor.

Note

DLP, LCD, LCoS and Plasma display devices are not affected by magnetic fields.

Caution

Loudspeakers placed on stands, walls or video monitors may fall if tipped or improperly positioned. To avoid this, anchor the loudspeaker and stand using the same procedures and hardware used to anchor bookcases, wall units, and other furniture. Harman Specialty Group assumes no responsibility for proper selection and installation of hardware or for any personal injuries or product damages resulting from improper installation or a fallen loudspeaker.

LISTENING ROOM ACOUSTICS

Listening rooms have a profound impact on sound, particularly at lower frequencies. In fact, listening rooms can dominate the sound below about 400 Hz. Ideally, listening rooms would have optimized dimensions to minimize the effects of room resonances. But in reality, most listening rooms are not designed to enhance loudspeaker performance.

The interaction between loudspeakers and listening rooms is complex, depending on two important determinants that affect the loudspeaker and the listener.

1. Surfaces and other boundaries often cause large peaks and dips in low-frequency response. These peaks and dips often reach ranges of 12 dB or more.
2. Standing waves (also known as room modes or resonances) interact with both the loudspeaker and the listener locations, resulting in large frequency response errors.

Unfortunately, there is no simple solution that considers both factors. Even computer software programs that examine one or both factors may not calculate proper primary listening position or loudspeaker placement values.

In most cases, proper selection of the primary listening position combined with proper placement of the loudspeaker will result in superior performance at lower frequencies. The difference between superior and inferior results is often just a small adjustment of the primary listening position or loudspeaker placement. For more information or assistance contact an authorized Revel dealer.

ACOUSTIC TREATMENT MATERIALS

As previously mentioned, the Gem2 Loudspeakers utilize high-order networks which optimize both the on-axis and off-axis response. Their optimized response minimizes sonic degradation that can occur in overly “live” rooms. Placing minimal acoustic treatment materials at primary reflection points will reduce these distortions even further. Ideally, acoustic absorbers should be placed at the first reflection points on the front and side walls and either acoustic absorbers or diffusers should be placed at the first reflection point on the rear wall.

Because the listener’s eyes and ears are on the same plane, the “mirror method” is an accurate determinant of critical reflection points. This method can be used to determine reflection points for side walls, rear walls, front walls, and even the ceiling. Applying acoustic treatment materials to the side walls is most important, followed by the front wall, rear wall, and ceiling.

To determine reflection points using the mirror method:

1. Once the Loudspeakers have been placed, sit in the primary listening position and ask another person to slide a mirror along the listening room walls.
2. Note the locations at which the person sitting in the primary listening position can see either the left, center or right front loudspeakers. Be sure to look for all of the speakers in the reflection on each room boundaries, including the front and rear walls. These are reflection points that require acoustic treatment materials.

If acoustic treatment materials are not available, hanging a rug over the reflection points will help reduce degradation in overly “live” rooms. Carpeting the floor between the loudspeakers and the primary listening position and placing irregular surfaces such as bookcases at first reflection points will also help minimize strong reflections. Avoid placing large reflective surfaces such as coffee tables between the loudspeakers and the listeners for critical listening.

MAKING CONNECTIONS

The Gem2 features gold-plated binding posts and jumper straps that allow it to be configured for single-wired, bi-wired, or bi-amplified connections.

Caution

Never make or break connections unless all system components are powered off.

Remove the input panel jumper-straps identified in Figure 4, page 11, before making bi-wired or bi-amplified connections. Failure to do so may cause damage to some power amplifiers.

Before making connections, note the following:

- The standard connection method uses a single loudspeaker cable. The Gem2 is equipped with two pairs of input terminals to allow for bi-wiring or bi-amplification. While Revel does not endorse one particular connection method over another, these additional connection options are available if desired. The design of this loudspeaker is such that optimal performance can be attained using the standard connection method.
- Make all connections observing the proper polarity, positive-to-positive (+) and negative-to-negative (-). Connections that do not observe the proper polarity will cause poor stereo imaging and diminished bass response.
- Use high-quality loudspeaker cable with a maximum total loop resistance of 0.07 Ohms or less (for **each** wire run). Refer to the following table to determine the appropriate wire gauge.

Minimum Wire Gauge

Gauge (AWG)	Length (Feet)	Length (Meters)
6	87	27
7	69	21
8	58	18
9	43	13
10	34	10
11	27	8
12	22	7
13	17	5
14	14	4
15	11	3
16	9	3
17	7	2
18	5	2

Note

High loop resistances that exceed 0.07 Ohms (for each wire run) will cause the filter network to be mis-terminated, resulting in considerable degradation of sound quality.

- Vertical bi-amplified connections must be made with identical power amplifiers. Horizontal bi-amplified connections can be made with identical or non-identical power amplifiers with identical gain factors.
- When making bi-amplified connections, both power amplifiers must receive identical input signals from the associated preamplifier. A “Y” adaptor is required if the associated preamplifier does not offer two connectors per output channel. Otherwise, each power amplifier can be connected to a separate connector for the same output channel of the preamplifier.
- If desired, contact an authorized Revel dealer for information about the suitability of power amplifier components before connecting the Gem2 to the associated power amplifier.
- Review the owner’s manuals for associated audio components to determine their connection procedures.

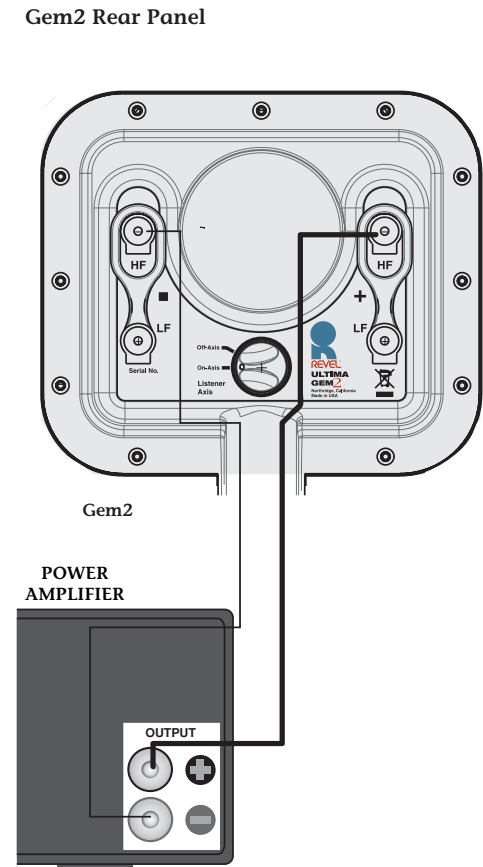
SINGLE WIRE CONNECTIONS

Single-wired connections are the most common. These are made between one pair of the Gem2 input terminals and one power amplifier output channel as shown in Figure 6.

To make single-wired connections:

1. Connect one pair of loudspeaker wires to the desired Gem2 input terminals. Then connect the same pair of loudspeaker wires to the desired power amplifier output channel. (The high frequency input terminals are recommended).
2. Make sure that all terminals are firmly hand-tightened.

Figure 6: Single-Wired Connections



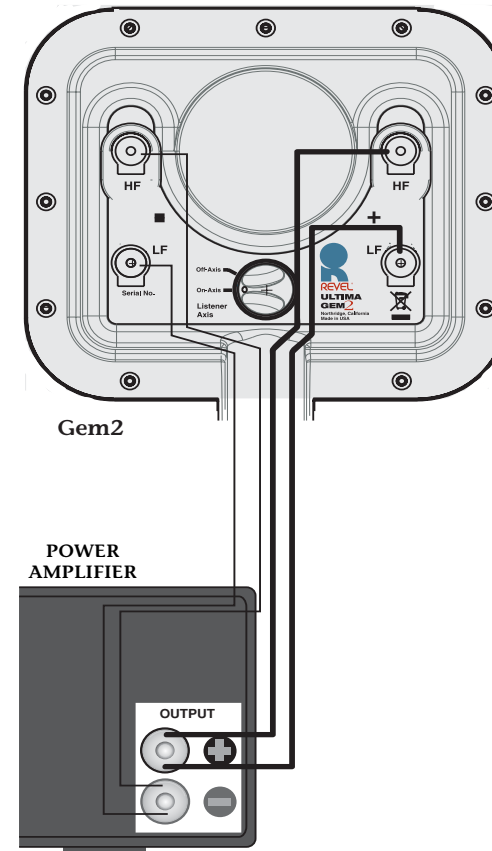
BI-WIRED CONNECTIONS

Bi-wired connections are made between both pairs of the Gem2 input terminals and one power amplifier output channel as shown in Figure 7.

To make bi-wired connections:

1. Remove the jumper straps identified in Figure 4, page 11.
2. Connect one pair of loudspeaker wires to the high-frequency of Gem2 input terminals. Then connect the same pair of loudspeaker wires to the desired power amplifier output channel.
3. Connect another pair of loudspeaker wires to the low-frequency pair of Gem2 input terminals. Then connect the loudspeakers to the same power amplifier output channel that was selected in Step 2.
4. Make sure that all terminals are firmly hand-tightened.

Figure 7: Bi-Wired Connections



VERTICAL BI-AMPLIFIED CONNECTIONS

Vertical bi-amplified connections are made between both pairs of Gem2 input terminals and two separate power amplifier output channels. Each speaker is connected to its own power amplifier. The power amplifiers must be identical. Vertical bi-amplified connections are shown in Figure 8.

Note

When making vertical bi-amplified connections, both power amplifiers must receive identical input signals from the associated preamplifier. A “Y” adaptor is required if the associated preamplifier does not offer two connectors per output channel. Otherwise, each power amplifier can be connected to a separate connector for the same output channel of the preamplifier.

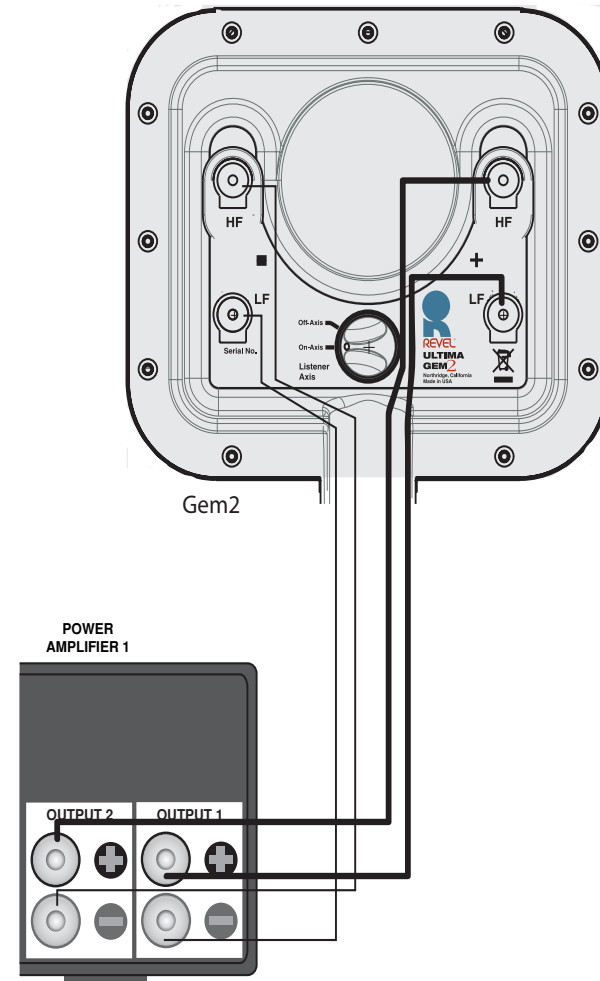
To make vertical bi-amplified connections:

1. Remove the jumper straps identified in Figure 4, page 11.
 2. Connect one pair of loudspeaker wires to the high frequency pair of Gem2 input terminals. Then connect the same pair of loudspeaker wires to the desired power amplifier output channel.
 3. Connect another pair of loudspeaker wires to the low-frequency pair of Gem2 input terminals. Then connect the same pair of loudspeaker wires to a separate output channel on the same power amplifier.
 4. Make sure that all terminals are firmly hand-tightened.
-

Note

Vertical bi-amplified connections must be made using two identical power amplifiers.

Figure 8: Vertical Bi-Amplified Connection



HORIZONTAL BI-AMPLIFIED CONNECTIONS

Horizontal bi-amplified connections are made between both pairs of Gem2 terminals and two separate output channels on two separate power amplifiers. The high-frequency pair of Gem2 input terminals are connected to one power amplifier, while the low-frequency pair are connected to another power amplifier.

These power amplifiers can be identical or non-identical, but must have identical gain factors. If the gain factors are not identical, a means of adjusting the input level of at least one power amplifier is required. Horizontal bi-amplified connections are shown in Figure 9.

Note

When making horizontal bi-amplified connections, both power amplifiers must receive identical input signals from the associated preamplifier. A “y” adaptor is required if the associated preamplifier does not offer two connectors per output channel. Otherwise, each power amplifier can be connected to a separate connector for the same output channel of the preamplifier.

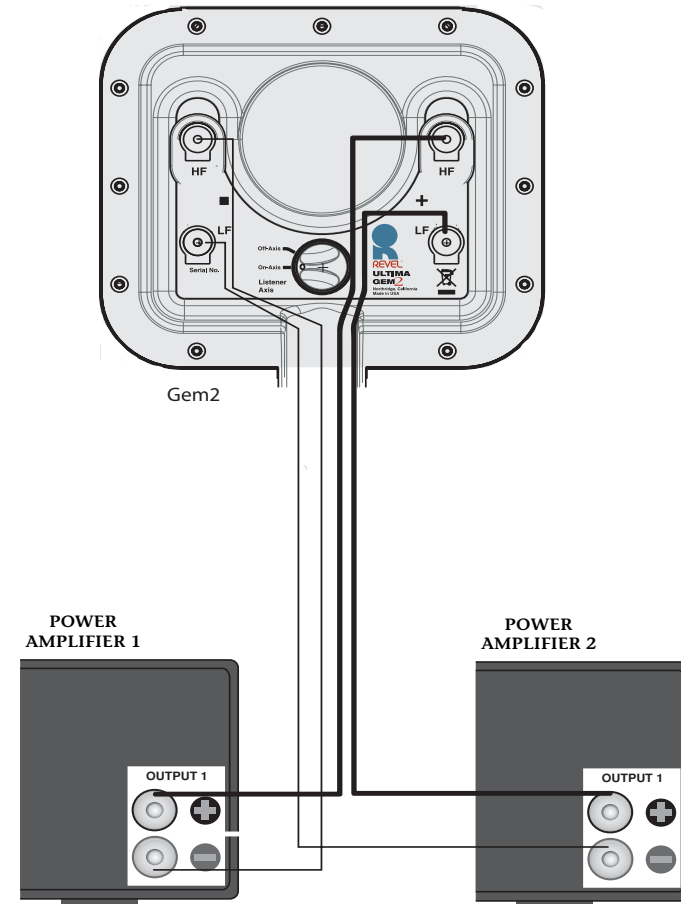
Horizontal bi-amplified connections can be made using identical or non-identical power amplifiers. However, these power amplifiers must have identical gain factors. If the gain factors are not identical, a means of adjusting the input level of at least one power amplifier is required. Contact an authorized Revel dealer for assistance.

To make horizontal bi-amplified connections:

1. Remove the jumper straps identified in Figure 4, page 11.
2. Connect one pair of loudspeaker wires to the high-frequency pair of Gem2 input terminals then connect the same pair of loudspeaker wires to the desired power amplifier output channel.

3. Connect another pair of loudspeaker wires to the low-frequency Gem2 terminals. Then connect the same pair of loudspeaker wires to the desired output channel on another power amplifier.
4. Make sure that all terminals are firmly hand-tightened.

Figure 9: Horizontal Bi-Amplified Connections



OPTIMIZING PERFORMANCE

To optimize the Gem2 for best performance:

1. When the Gem2 is connected, begin with the Tweeter Level Switch set to 0. (Different listening rooms may require other High Frequency Level switch settings.)
2. Set the Low Frequency Compensation Switch to correspond with the Gem2 placement. This is the best starting point, and will typically result in the most neutral sound for a given application. If the Gem2 sounds either too “thick” or too “thin,” especially when reproducing male voices, experiment with other Low Frequency Compensation Switch settings. In any case, it is worth experimenting to find the best switch setting for the particular installation. Note that the bass level will decrease as the Low Frequency Compensation switch is turned clockwise.
 - Select the **Normal** setting for most stand mounted situations if the loudspeaker is located at least 3 feet (0.91m) from walls and other large objects.
 - Select the **Contour** setting if mid-bass thickness is encountered in a stand-mounted application. This setting provides compensation for “boomy” or “ill-defined” bass that can result from particularly severe standing waves.
 - Select the **Boundary** setting in situations where the loudspeaker is mounted on a wall or custom-installed in cabinetry.
3. Listen to a variety of high quality material, making sure to include vocal recordings. If the Gem2 Loudspeakers are part of a multi-channel system, switch the associated controller to a “two-channel” or “stereo” mode.
4. Listen from the primary listening position, increasing volume to a comfortable level.

5. Experiment with the Gem2 placement to achieve the best overall tonal balance and image precision. Refer to the “Loudspeaker Placement” section for additional information about loudspeaker placement.
6. If desired, experiment with the Low Frequency Compensation switch and the Tweeter Level switch to optimize the system for the room acoustics.

Note

Rotating the Low Frequency Compensation Switch clockwise decreases low-frequency output.

Note

Please be sure to mute the system volume level before adjusting any switch settings.

7. When installing your loudspeakers on a wall the “On Axis” setting can be adjusted depending on your loudspeaker placement.
 - Use the “**On Axis**” setting for stand mounted and equivalent heights on walls. Use the “**Off Axis**” setting for units mounted 5 feet or higher in order to tilt the sweet spot down to the seated listeners.

LOUDSPEAKER VOLUME LEVEL

High-order filters include steep cut-offs to reduce potential damage from “out-of-band” frequencies. Combined with carefully designed transducers and filter networks, this approach helps the Gem2 to maintain its performance under extreme operating conditions. However, all loudspeakers have limits when it comes to continuous playback. To extend these limits, avoid playback at volume levels that distort or sound “strained”.

Caution

To avoid damage, reduce volume level immediately if loudspeaker sound is not clean and clear.

SPECIFICATIONS

GEM2 SPECIFICATIONS

Specifications	Value	Definition
Sensitivity	86.4 dB SPL with 2.83 V @ 1m (4 π anechoic)	Indicates the amount of power the associated power amplifier must deliver to drive the loudspeaker at reasonable volume levels. Conservatively rated specifications indicate high sensitivity, meaning that a massive power amplifier is not required to drive Revel loudspeakers to reasonable volume levels in large listening spaces.
Impedance	6 Ω (nominal), 3.4 Ω (minimum)	Indicates whether the loudspeaker presents a “difficult” or “easy” load on the associated power amplifier. Combined with moderate phase angles, a minimal impedance specification of 3.4 Ω allows a reasonably designed power amplifier to drive Revel loudspeakers.
Filter Network	Three-way, high-order acoustic response @ 400 Hz and 2.3 kHz	Indicates the acoustical characteristics of the filter network. Steep filters indicate an optimized filter network that produces minimal acoustical interference, low distortion, and expansive dynamic range.
Frequency Range	- 3dB from 70 Hz to 45 kHz	Describes the low frequency and high frequency at which the loudspeaker system amplitude response is 3 dB lower than the average level, when measured in a 4 π anechoic chamber. While the -3 dB frequencies are the industry standard for specifying frequency range, Low Frequency Extension is a more useful specification for comparing the low-bass output capabilities of loudspeakers.
In-Room Response Relative to Target Response	± 0.5 dB from 75 Hz to 18 kHz	Indicates sound quality in context with other specifications. A breakthrough measurement, this specification closely correlates to sound quality in a single curve—a long-standing goal of loudspeaker engineers. In-room response is measured through the use of large anechoic chambers. The loudspeaker’s response is measured every 10 degrees, horizontally and vertically, for a total of 72 response measurements. The in-room response curve is a prediction of how the loudspeaker would measure in a typical room. Research and observation reveals that ubiquitous on-axis response curves cannot distinguish between two loudspeakers with radically different sound qualities.

SPECIFICATIONS

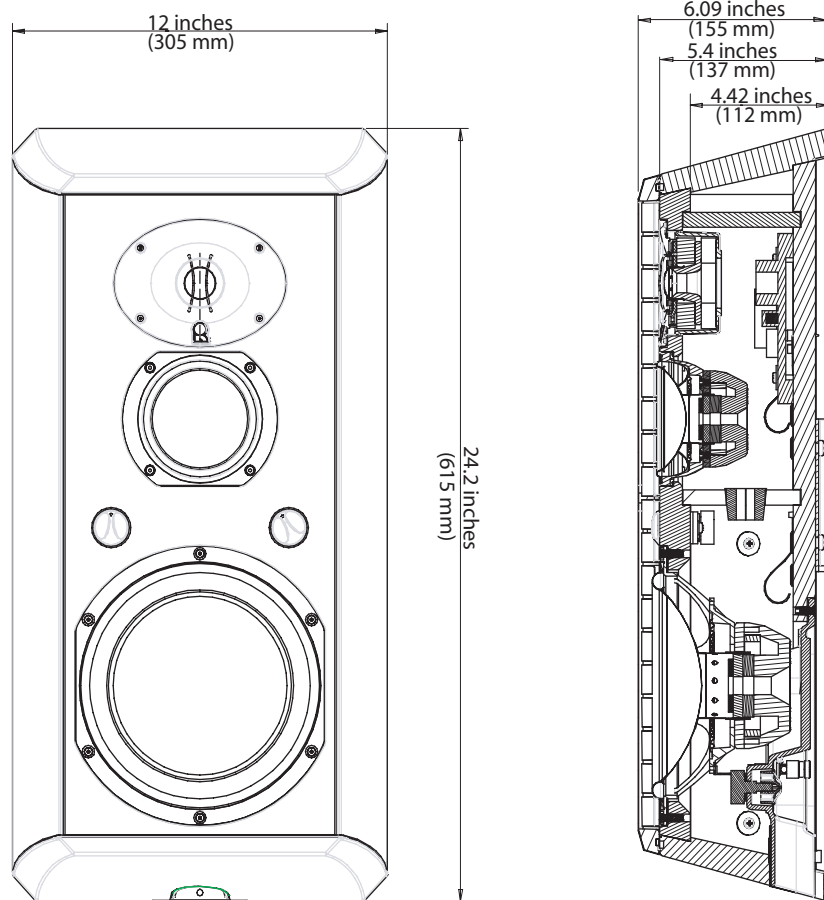
GEM2 SPECIFICATIONS

Specifications	Value	Definition
Listening Window Response	±1.0 dB from 72 Hz to 20 kHz	Indicates the on-axis response of the loudspeaker. An improved on-axis measurement, this specification reduces the visual confusion of inaudible interference. It retains full accuracy without using "spectral smoothing," which results in significant data loss.
Low-Frequency Extension	-10 dB at 48 Hz -6 dB at 60 Hz -3 dB at 70 Hz	Indicates the low-frequency response of the loudspeaker. Studies have shown that the -10 dB specification best correlates to controlled listening tests. At low frequencies, most loudspeaker and listening room combinations demonstrate significant room gain, which produces an increase in levels as frequencies decrease. Unlike the -3 dB specification, the -10 dB specification reflects the steepness of low-frequency roll-offs.

Note

Specifications are subject to change without notice.

Gem2 Dimensions



Shipping Weight: 38 Pounds (17.2 kg)

If using the optional Pedestal, the height is 46 inches (117 cm).

OBTAINING SERVICE

To obtain warranty or non-warranty service, contact an authorized Revel dealer.

Before returning a loudspeaker for warranty or non-warranty service, contact Harman Specialty Group Customer Service to determine the extent of the problem and to obtain a Return Material Authorization (RMA) number. No loudspeakers will be accepted without an RMA number issued from Harman Specialty Group.

If a Revel loudspeaker must be returned for repair, Harman Specialty Group will assume no responsibility for the loudspeaker during shipment from the customer to Harman Specialty Group, whether the loudspeaker is or is not covered under warranty.

To contact Harman Specialty Group Customer Service:

Telephone: 781-280-0300

Service Fax: 781-280-0499

Sales Fax: 781-280-0495

www.revelspeakers.com

All Returns must be:

- Well-packaged using the original packing materials
- Properly insured and consigned
- Pre-paid to a reliable shipping agent

Product Shipment Directions:

The following information must be included when a loudspeaker is returned for service:

- Name
- Company name
- Street address, city, state and, zip code
- Telephone number including area code and country code (if applicable)
- Loudspeaker serial number
- A detailed description of the problem
- The preferred method of return shipment
- RMA number clearly marked on both the inside and outside of the package

Do not return accessories such as owner's manuals unless instructed to do so.

Product Shipments:

HSG/Revel Returns Dept.
RMA #
801 S. 75th Avenue
Phoenix, AZ 85043

Appendix



WALL-MOUNTING INSTRUCTIONS

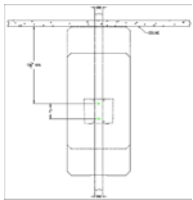
The Ultima Gem®2 loudspeaker can be mounted to a wall or the optional pedestal. The following instructions provide detailed information regarding how to mount the loudspeaker on a wall in your listening room. Before beginning the installation, consider the best position to mount the loudspeaker for optimum performance. Refer to the *Installation Considerations* section for guidance on the best placement for the loudspeaker.

Note: The Gem2 Loudspeaker is NOT designed to mount on a ceiling.

Caution

Before installation, consult a qualified installer or contractor familiar with the safety requirements of mounting heavy objects. The customer is responsible for proper mounting of the loudspeaker. Harman Specialty Group assumes no responsibility for proper selection and installation of hardware or for any personal injuries or product damages resulting from improper installation or a fallen loudspeaker.

Step 1: Determine the approximate location on the wall where the loudspeaker will be mounted and find the nearest pair of wall studs. Use a stud finder if necessary.



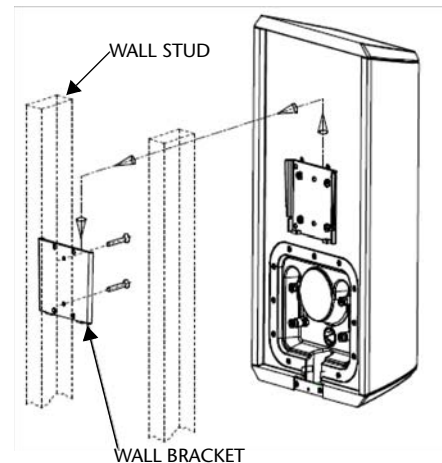
Note: For safety purposes, the loudspeaker must be centered on a wall stud when mounted.

Step 2: Retrieve the wall-mount template, found in the accessory bag that was shipped with the loudspeaker.

Step 3: Tape the template to the wall, centering the drill holes over a wall stud. Ensure that the bracket distance is at least 15.5" (394 mm) from the edge of the ceiling.

Note: The two vertical holes in the center of the bracket template are the holes that are used for wall-mounting the loudspeaker to the stud.

Step 4: Use a level to verify that the bracket tilt is zero and then drill two 1/16" (1.58 mm) diameter pilot holes.



that the out-thrust tabs are on the bottom end. These are the stops that keep the speaker from sliding off the bracket.

Step 8: Secure the wall bracket in place with two screws. The minimum required size of the screws is #10 (up to a maximum of 1/4") x 2-1/2" long. Tighten the screws firmly in place.

Step 9: Connect the wires to the loudspeaker. Set the rear panel switch to the desired option.

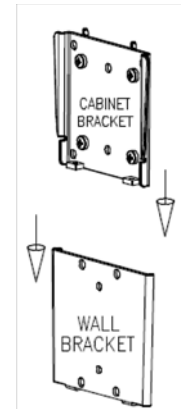
NOTE: DO NOT PLACE THE LOUDSPEAKER FACE DOWN. AVOID TOUCHING THE TWEETER DOME.

Step 10: The loudspeaker can now be mounted onto the wall bracket. Slide the loudspeaker onto the bracket from above, as shown. Make sure the brackets are firmly mated before releasing the loudspeaker.

Step 5: Retrieve the wall bracket from the plastic accessories bag that shipped with the loudspeaker.

Step 6: Remove the template from the wall.

Step 7: Place the wall bracket flat against the wall so that the drilled holes in the wall line up with the wall bracket holes. Be sure to position the bracket so



ULTIMA GEM® 2 PEDESTAL

Thank you for purchasing the Ultima Gem®2 Pedestal for your Revel® Ultima Gem®2 Loudspeaker. Follow the instructions below to unpack the pedestal.

UNPACKING

Step 1: Place the packing carton down so that the long side of the carton that's marked "Open this Side" is facing up.

Step 2: Open both the outer box and inner box so that one side of the packaged pedestal is exposed.

Step 3: Without allowing the flaps to close, invert the carton so that the open flaps of both boxes are on the bottom.

Step 4: Lift the cartons up and off the stand.

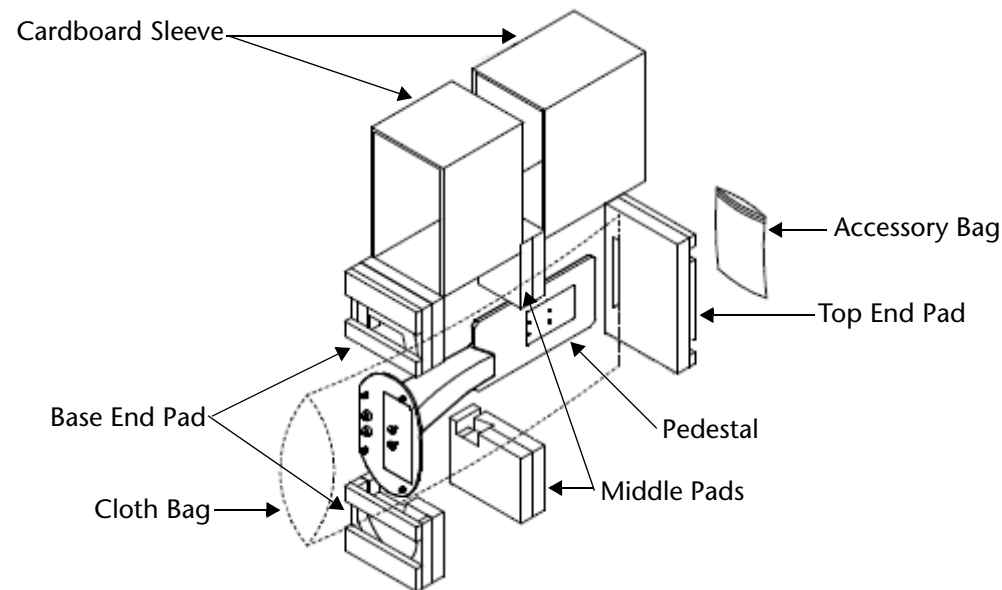
Step 5: Remove the Top End Pad from the top of the pedestal and the Base End Pad from the bottom of the pedestal.

Step 6: Remove the Cardboard Sleeve and the Middle Pads.

Step 7: Remove the cloth bag. Handle carefully to ensure that the pedestal isn't scuffed or bumped.

You are now ready to start the installation procedure. Turn this sheet over to proceed.

NOTE: Save all original packaging materials.



INSTALLATION

Follow the instructions to install the Ultima Gem® 2 Loudspeaker to the pedestal.

Step 1: Lay the Ultima Gem® 2 pedestal down, face up, on a soft non-scratch surface.

Step 2: Find and remove the four Phillips pan-head screws from the accessories bag that was removed from the end pad during the unpacking procedure.

Step 3: Remove the wall mount bracket from the loudspeaker accessories kit. This bracket is the matching half of the bracket that is installed on the back of the loudspeaker.

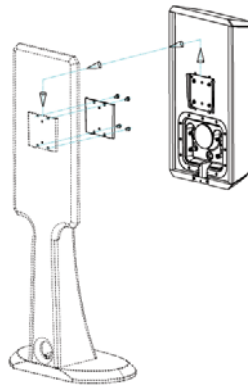
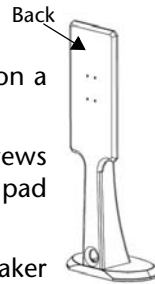
Step 4: Place the bracket flat against the front of the inset area of the pedestal, so that the screw holes line up between the pedestal and the bracket. Be sure to position the bracket so that the out-thrust tabs are on the bottom end. These are the stops that keep the speaker from sliding off the bracket.

Step 5: Secure the bracket in place with the four Phillips pan-head screws. Be sure to use the outer holes for the screws, leaving the two center holes empty. Tighten the screws firmly but do NOT over-tighten.

Step 6: Lay the pedestal face down on a soft non-scratch surface, so that the back of the pedestal is facing up.

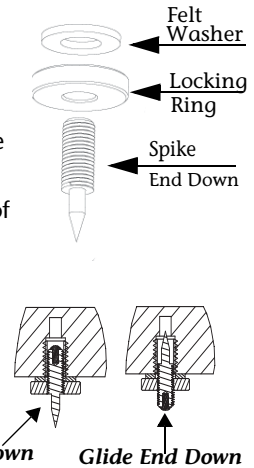
Step 7: Install the combination spikes/glides with the felt washers and knurled locking rings to the bottom of the pedestal. Hand-tighten the spikes firmly, but do NOT over-tighten.

Step 8: Put the cables for the loudspeaker in the hole located on the rear of the pedestal near the bottom and then feed the cables through the pedestal so that they come out at the top end on the front of the pedestal.



Install the spikes/glides:

1. Select the appropriate end of the spikes/glides depending on your surface. If the speaker is to be used on a hardwood floor or smooth surface use the glide end of the spike.
2. Locate the four threaded insets on the bottom of the pedestal.
3. Screw the first spike into the threaded insert, making sure to include the locking ring & felt washer in the order shown.
4. Repeat Step 3 with each of the other spikes and threaded insets. Make sure the spikes are evenly threaded to achieve a level balance.



Step 9: Install the cables to the rear panel of the loudspeaker.

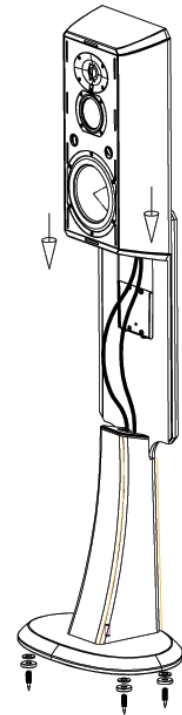
NOTE: DO NOT PLACE THE LOUDSPEAKER FACE DOWN. AVOID TOUCHING THE TWEETER DOME.

Step 10: The loudspeaker can now be installed onto the pedestal.

If the wires have enough play, stand the pedestal back onto its base and slide the loudspeaker onto the bracket from above, as shown. Make sure the brackets are firmly mated before releasing the loudspeaker.

If the wires do not have enough play to allow the pedestal to be righted, slide the speaker sideways from the top of the pedestal and over the bracket. Make sure that the brackets are firmly mated before moving the pedestal back to an upright position.

Step 10: Adjust the combination spikes/glides to level the speaker as required. Hand-tighten the locking rings after adjustment.



LIMITED WARRANTY

A valid serial number is required for warranty coverage. This Revel warranty protects the original retail purchaser for a period of five (5) years (parts and labor) from any failure as a result of original manufacturing defects so long as:

1. The Revel products were purchased within the 50 United States, its territories, or Canada
2. The dealer from whom the Revel products were purchased was authorized to sell such products at the time of the original purchase.
3. The original, dated Bill of Sale is presented whenever service is required during the warranty period.

The balance of this warranty is transferable only if the used product is purchased from an authorized Revel dealer. This warranty is only valid for service within the United States, its territories, and Canada, please contact an authorized Revel dealer for warranty and service information.

Any Revel product not performing satisfactorily may be returned to the factory

for evaluation. Return authorization must first be obtained by either calling or writing Customer Service prior to shipping the product. The customer is responsible for shipping charges to the factory. Customer Service will pay return shipping charges within the United States only in the event that the product is found to be defective as mentioned above. There are other stipulations that may apply to shipping charges.

There is no other express warranty on this product. Neither this warranty nor any other warranty, express or implied, including implied warranties of merchantability and fitness, shall extend beyond the warranty period. No responsibility is assumed for any incidental or consequential damages, so that the above exclusion or limitation may not apply.

This warranty provides specific legal rights. Other states may provide additional rights. This warranty is applicable in the United States, its territories, and Canada. Outside of the United States, its territories, and Canada,

please contact an authorized Revel dealer for warranty and service information. The information this document contains is subject to change without notice. In the event that there are differences between this warranty and the provisions of any advertisements, documentation, product brochures, or packaging cartons, the terms of this warranty will prevail.



Harman Specialty Group
3 Oak Park Drive
Bedford, MA 01730-1413
USA

Tel 781-280-0300
Fax 781-280-0490
www.revelspeakers.com

Customer Service
Tel 781-280-0300
Fax 781-280-0495 (Sales)
Fax 781-280-0499 (Service)



Harman Specialty Group, 3 Oak Park Drive, Bedford, MA, 01730-1413 USA | Telephone: 781-280-0300 | Fax: 781-280-0490
| www.revelspeakers.com

Customer Service Telephone: 781-280-0300 | Sales Fax: 781-280-0495 | Service Fax: 781-280-0499

Product Shipments: HSG/Revel, Returns Dept., 801 S. 75th Avenue, Phoenix, AZ 85043 USA

Part No.361560-001 | Rev I | 12/07