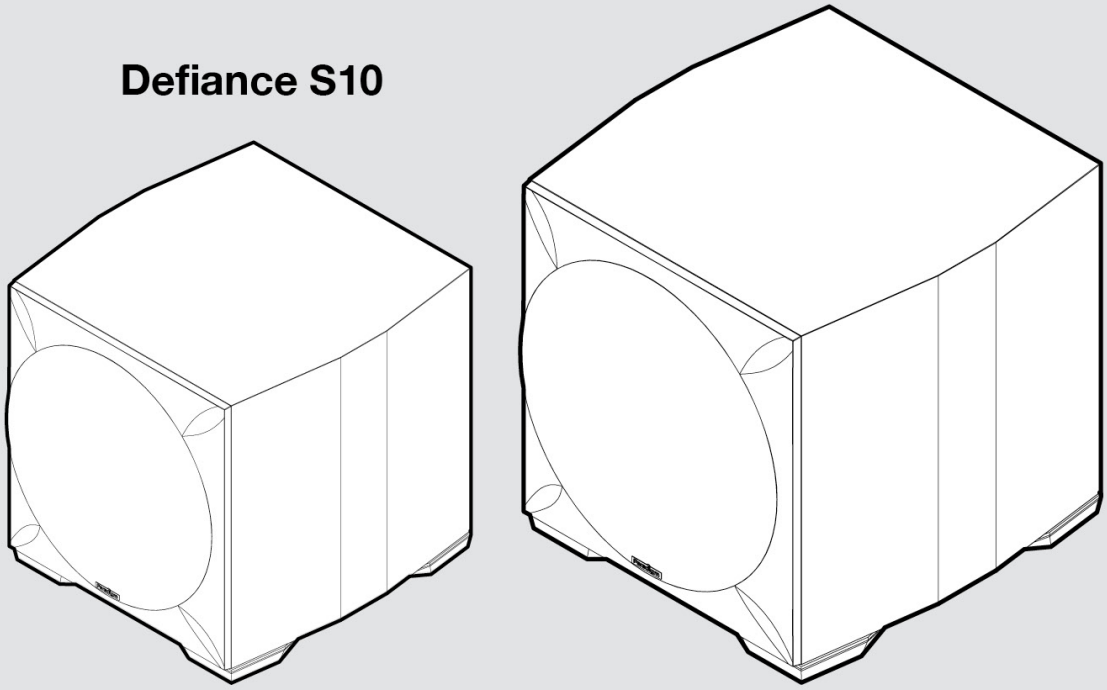
Paradigm®

DEFIANCE® S10
DEFIANCE® S12

Defiance S12

Defiance S10



Owner's Manual

Applicable to firmware version 1.3 or later.

INDUSTRY CANADA (IC) COMPLIANCE NOTICE

This device complies with Industry Canada licence exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment.

Contains FCC ID: NKR-SWA12 and IC: 4441A-SWA12

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Per FCC regulation 47 CFR 15.21: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

TABLE OF CONTENTS

EU COMPLIANCE INFORMATION

RECYCLING AND REUSE GUIDELINES (EUROPE)

1.0 INTRODUCTION

2.0 IMPORTANT SAFETY INSTRUCTIONS

3.0 SAFETY WARNINGS AND QUICK INFORMATION

4.0 YOUR NEW SUBWOOFER

5.0 SUBWOOFER PLACEMENT

6.0 CONNECTING YOUR SUBWOOFER

7.0 CONTROLS & CONNECTIONS: DEFIANCE S10/S12

8.0 CONTROLLING YOUR SUBWOOFER USING THE APP/FINE TUNING

9.0 SETTING SUBWOOFER CONTROLS

10.0 ANTHEM ROOM CORRECTION (ARC)

11.0 LIMITED WARRANTY

EU COMPLIANCE INFORMATION

Hereby, PML Sound International declares that this Defiance Suwoofer is in compliance with the essential requirements and other relevant provisions of the following EU Compliance Directive Information.

- Conforms to European Union Low Voltage Directive 2014/35/EU;
- European Union EMC Directive 2014/30/EU;
- European Union Radio Equipment Directive (RED) 2014/53/EU.
- European Union Eco-Design Directive 2009/125/EC;
- European Union WEEE Directive 2012/19/EU;
- European Union Restriction of Hazardous Substances Recast (RoHS2) Directive 2011/65/EU;
- European Union Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Directive 2006/121/EC;
- You may obtain a free copy of the Declaration of Conformity by contacting your dealer, distributor, or PML Sound International worldwide headquarters. Contact information can be found here: www.paradigm.com.

RECYCLING AND REUSE GUIDELINES (Europe)

In accordance with the European Union WEEE (Waste Electrical and Electronic Equipment) directive effective August 13, 2005, we would like to notify you that this product may contain regulated materials which, upon disposal, according to the WEEE directive, require special reuse and recycling processing. For this reason Paradigm Electronics Inc. (manufacturers of Paradigm® speakers and Anthem® Electronics) has arranged with its distributors in European Union member nations to collect and recycle this product at no cost to you. To find your local distributor please contact the dealer from whom you purchased this product or go to our website at **www.paradigm.com**.

Please note that only the product falls under the WEEE directive. When disposing of packaging and other shipping material we encourage you to recycle through the normal channels.

1.0 INTRODUCTION

Thank you for choosing a Paradigm® Defiance S Subwoofer. You are about to hear the difference that Paradigm subwoofers make in your home theater system! They are the product of countless hours of comprehensive research and development and will reward you with truly exceptional sound for many years.

To ensure proper installation, please read this manual and follow all instructions. If you have further questions contact your Authorized Paradigm Dealer or visit the Q&A page on our website at **www.paradigm.com**.

2.0 IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Maintain a minimum of 20-30cm distance around the apparatus for sufficient ventilation.
16. The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, tablecloths, curtains, etc.
17. No naked flame sources, such as candles, should be placed on the apparatus.
18. The use of apparatus in moderate climates.

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.

The lightning bolt 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.

WARNING! Do not use your subwoofer outside of the country of original sale — voltage requirements vary by country. Improper voltage can cause damage that will be potentially expensive to repair. The subwoofer is shipped to Paradigm authorized distributors with the correct power supply for use in the country of intended sale. A list of authorized distributors can be accessed at www.paradigm.com or by emailing support@paradigm.com.

3.0 SAFETY WARNINGS AND QUICK INFORMATION

- **Hazardous voltages exist inside—do not remove cover.**
- **Refer servicing to a qualified technician.**
- **To prevent fire or shock hazard, do not expose this module to moisture.**
- **Turn amplifier off and unplug subwoofer should any abnormal conditions occur.**
- **The power cord should not be installed, removed, or left detached from the speaker while the other end is connected to an AC power source.**
- **The main power switch near the AC inlet shall remain readily operable.**
- **Use only with a grounded electrical outlet.**
- **No candles or other sources of open flame should be placed on the speaker.**
- **No liquids either in glasses or vases should be placed on speaker.**
- **Speaker should not be exposed to dripping or splashing liquids.**
- **The terminals marked with the lightning bolt symbol should be connected by an instructed person or by way of ready made terminals.**
- **The power cord should remain readily operable should any abnormal conditions occur.**

We know you are eager to hear your new Paradigm subwoofer, so this section is provided to allow fast and easy set up. Once you have your subwoofer operational, please take the time to read, in depth, the rest of the information in the enclosed manual. It will give you perspective on how to attain the greatest possible performance from this most exciting subwoofer system.

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Unpacking

Remove your new subwoofer from its packaging. Please retain the original packaging materials for future use — replacement packaging may be expensive.

Placement

You may choose to begin by placing the subwoofer in a corner near the front of the room. If placed in a corner, align the subwoofer diagonally so both woofers are equidistant from the adjacent wall. Before deciding on a permanent corner placement, experiment with other positions. Locations away from corners often prove more effective in providing ideal low-frequency performance and blend with the main speakers. Please see the Placement section for details.

Signal Connection

Use the best cables you can. High quality cables, available from your specialty dealer, are recommended and will give you superior performance.

Attach your receiver/preamplifier outputs to the signal input connectors located on the subwoofer's rear panel. Please see the Controls and Connections section for details. If you plan to connect your subwoofer using Speaker Level (high level) inputs, refer to the Speaker Level Inputs section for details.

Power Connection (AC) (see warning)

Make sure the level knob is set at 0. Plug the subwoofer into a wall outlet. Review the AC Power Connection section of this manual for details.

Setting the Controls (Using LFE Input):

- Power Mode: Set the switch to 'Auto', 'On' or 'Trigger', depending on your application.
- Download the Paradigm Subwoofer Control app (from the Google Play Store or the Apple App Store).
- Using the app, adjust the following settings:
  - Volume (level): Set at -14dB or twelve o'clock (straight up).
  - Phase: Start with 0°.
  - Low Pass Filter: Set to Bypass
- Use your processor/receiver's bass management system to adjust subwoofer integration.

Line Level Input (Left/Right):

- Power Mode: Set the switch to 'Auto', 'On' or 'Trigger', depending on your application.
- Download the Paradigm Sub Control app (from the Google Play Store or the Apple App Store).
- Using the app, adjust the following settings:
  - Volume (level): Set at -14dB or twelve o'clock (straight up).
  - Phase: Start with 0°.
  - Low Pass Filter: Set lower than the low-end frequency response of your main speakers. If you are uncertain of your main speaker low-frequency response, start with 80Hz.

Speaker Level Inputs (Left/Right):

- Power Mode: Set the switch to 'Auto', 'On' or 'Trigger' depending on your application.
- Download the Paradigm Sub Control app (from the Google Play Store or the Apple App Store).
- Use the Low Pass Filter and set to 80Hz.
  - Volume (level): Set at -14dB or twelve o'clock (straight up).
  - Phase: Start with 0°.
  - Use the Low Pass Filter and set to 80Hz.

4.0 YOUR NEW SUBWOOFER

Break-In

Although Paradigm Defiance S subwoofers sound great "out of the carton," they will sound even better once they are "broken in." Allow them to play for several hours before you begin any critical listening.

NOTE: If your subwoofer has been transported or stored in the cold, let it warm to room temperature before use.

Cleaning

Paradigm Defiance S subwoofers have a durable premium finish. To clean, use a damp soft cloth. Do not use a strong or abrasive cleaner. Avoid getting any part of the subwoofer system wet. Do not place wet objects (drinking glasses, potted plants, etc.) on top of the subwoofer—if allowed to soak in, even a small amount of water may permanently damage the subwoofer enclosure.

Power Requirements

The 'Watts' (W) rating indicated on the rear panel is the maximum AC power your subwoofer will draw when producing its maximum power output. However, the actual wattage draw will vary with the bass content of the program material—more if there is a lot of deep bass, less when there is not as much bass.

Although generally not required for typical music and movie program material, if the bass content of your program material is very loud and more continuous in nature, we recommend connecting subwoofers with higher wattage ratings (i.e. 1500 W) to dedicated AC circuits.

Room Acoustics

You are about to experience the astonishing bass performance of a state-of-the-art Paradigm® subwoofer. These subwoofers incorporate highly advanced patented technology and set all new standards for deep bass extension, ultra-low distortion and sound power output and provide unprecedented bass articulation and slam.

It is important to note that just as the amount of soft furnishings has a decided impact on mid and high frequencies, those below 150 Hz are dramatically affected by the room itself— its size, shape, as well as by physical boundaries throughout the room. Experimenting with subwoofer placement and control adjustments is the best way to achieve optimal bass performance in any room. Keep in mind the following guidelines when deciding on best subwoofer placement:

- Concrete floors and walls tend to aggravate low-frequency standing wave problems and are less preferred.
- Rooms where height, width and length are similar should be avoided as they can exhibit significant low-frequency standing wave problems. This may result in reduced clarity. If no other room is possible, experiment with subwoofer placement to minimize acoustic problems.

5.0 SUBWOOFER PLACEMENT

SAFETY PRECAUTION: Before proceeding with this section, be sure to read and follow all safety precaution notices at the beginning of this manual.

Bass is less and less directional as it goes down in frequency. For best sonic integration, locating your subwoofer between your front speakers or beside one of them and close to the back wall will usually provide the best bass performance. If this location is not possible your subwoofer may be placed anywhere in the room without affecting the stereo image of your front speakers or the soundstage of your multichannel speaker system.

Fig. 1a and **Fig. 1b** (see page 8), highlight how bass output is generally affected by room placement. When seated in a typical listening area of your room, placing the subwoofer inside the "shaded" areas will typically result in bass performance as follows:

Fig. 1a Corner placement provides the most bass, but sometimes at the expense of accuracy.

Fig. 1b A subwoofer placed near a wall usually provides a good balance of quantity and accuracy.

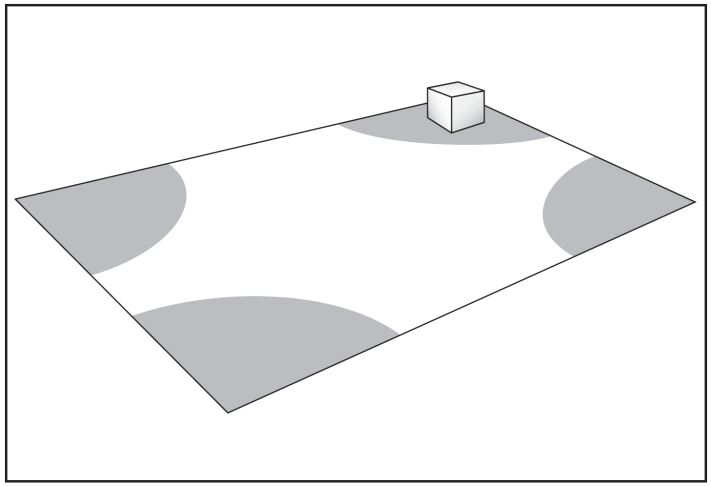


Fig. 1a

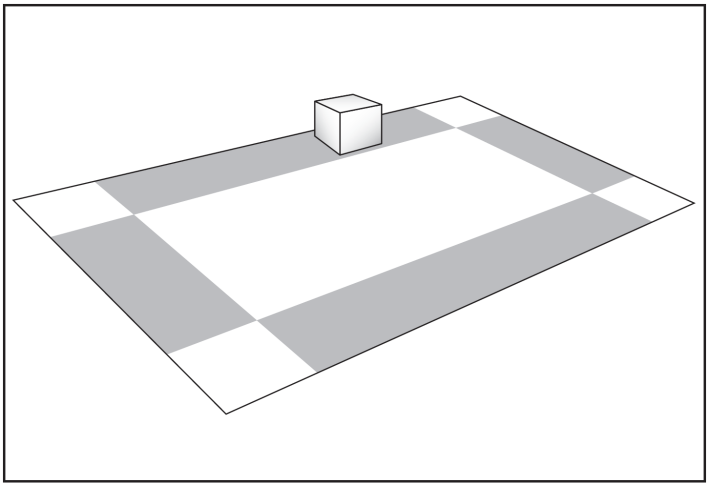


Fig. 1b

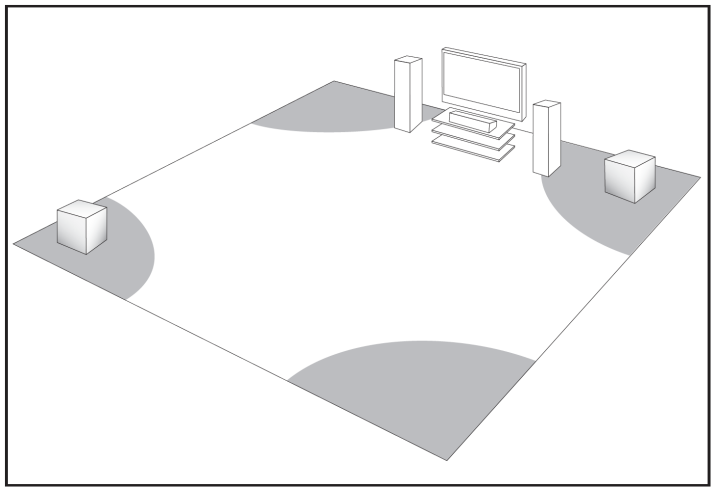


Fig. 2

THE ADVANTAGES OF USING TWO SUBWOOFERS IN YOUR LISTENING ROOM:

Fig. 2: When using two subwoofers, placing one in the front of the room and the other in the rear of the room usually provides the best bass performance and sonic integration. Consult the "Fine Tuning" section of this Owners Manual for more information on adjusting phase settings. If those locations are not possible, or if you want to experiment with placement options using two subwoofers, the following procedure will be a helpful guide to achieving better bass performance. Refer to "Subwoofer Connection" (below) then proceed as follows:

- Temporarily turn all speakers off (either by turning your amplifier off or disconnecting them).
- Connect and place one subwoofer in the central area of your listening room. Follow directions for connection, as outlined in the following section.
- At a moderately loud level, play music or a video soundtrack with extended bass that is repetitive or continuous.
- Walk around your room and note where the bass sounds louder and where it sounds quieter.
- Place the first subwoofer within a louder bass area of your room; then place the second subwoofer within a quieter bass area of your room.
- Connect both subwoofers and switch all speakers back on; and switch the amplifier on, or reconnect it.
- Follow the "Fine Tuning" instructions (see page 15), to optimize your system's overall bass performance.

(See your Dealer for connection instructions using two subwoofers).

NOTE: The preceding is only a guideline. You may want to use a bass test disc and SPL meter to more accurately determine the bass characteristics of your listening room (see your Dealer for more information).

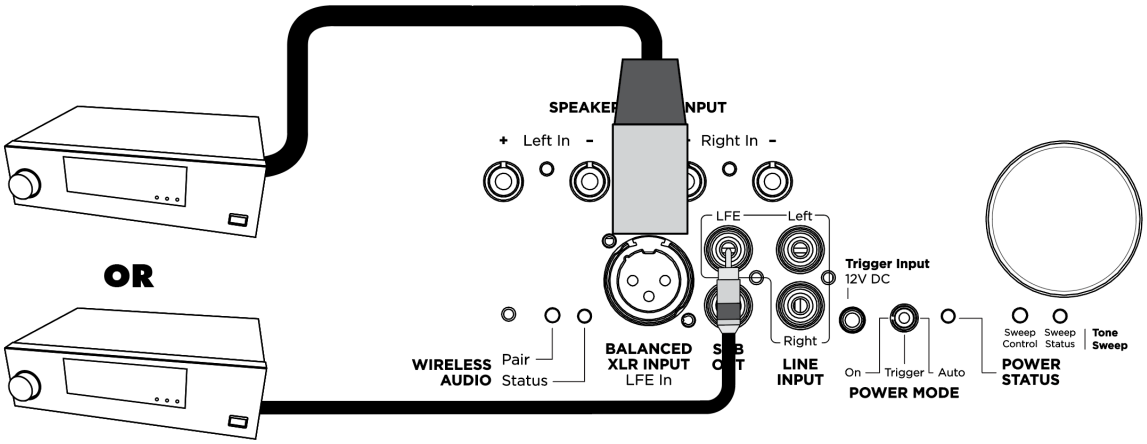
Remember that room acoustics vary, which means that it may take some experimenting with subwoofer placement to achieve the best subwoofer performance.

6.0 CONNECTING YOUR SUBWOOFER

AUDIO SIGNAL CONNECTIONS

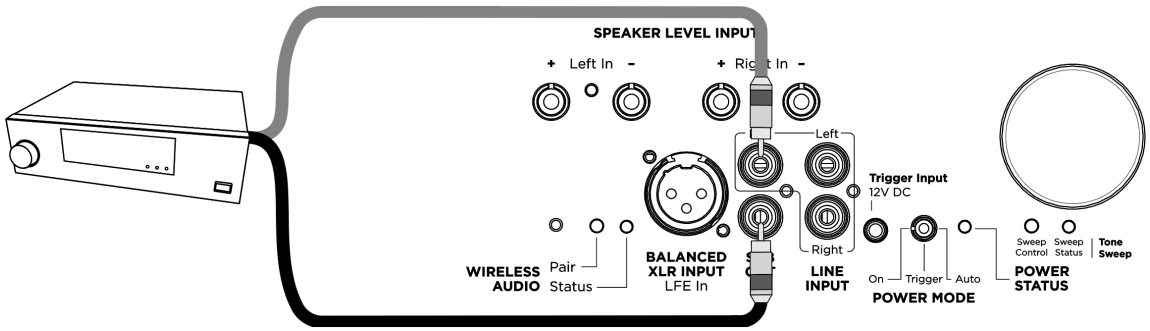
LFE Input (RCA or XLR)

This is the most common connection for a subwoofer, and uses a single RCA or XLR style cable. If you have the option to use XLR, it is recommended to do so. The LFE connection is designed to be used with any device that has its own built in bass management settings. The subwoofer will not apply additional Low-Pass filtering to the signal received through the LFE Input. Through the LFE Input, the Low-Pass filtering is handled by the connected device. The most common devices that use the LFE input on the subwoofer are AV Receivers and Processors, but other devices like powered speakers or integrated amplifiers may also have their own bass management. If you aren't sure if you should use the LFE connection or not, please consult your products owners manual, your dealer, or Paradigm.



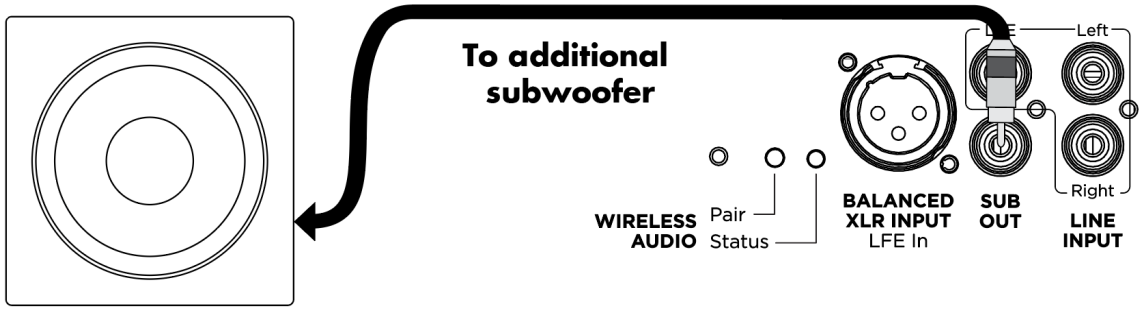
Line Level Input (Left In / Right In)

Connect from the Main Out/Pre Out/Sub Out on your receiver/pre-amp/electronic device. The setting for the Low-Pass Filter control is applied to the signal received through these inputs unless the Low-Pass filter control is set to Bypass. This subwoofer's Low-Pass filter is adjusted exclusively through the Paradigm Subwoofer Control App. See "App Controls" section on page 10 for more details. The Left and Right inputs will be summed internally, so the subwoofer will play content from the Left input, Right input or both simultaneously. Either of the inputs can be used if your device only has a single output.



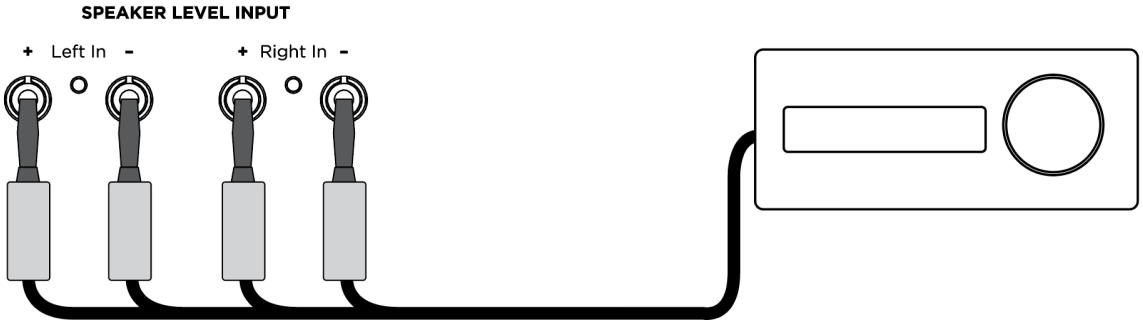
Subwoofer Out

Not all devices have multiple outputs for subwoofers. To make it easy to add additional subwoofers to a system, this subwoofer is equipped with a Subwoofer Out connection. The Subwoofer Out uses a single RCA connection that can be run to an additional subwoofer. This process can be repeated multiple times in order to create a "chain" of subwoofers if desired. The Subwoofer Out signal is a combination of all active incoming signals. In other words, whatever signals are actively connected to the various Subwoofer Inputs is what will come out of the Subwoofer Out connection.

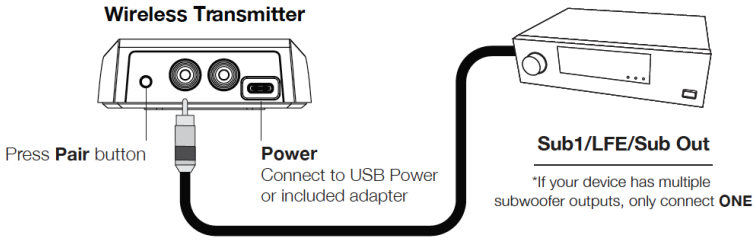


Speaker Level Input

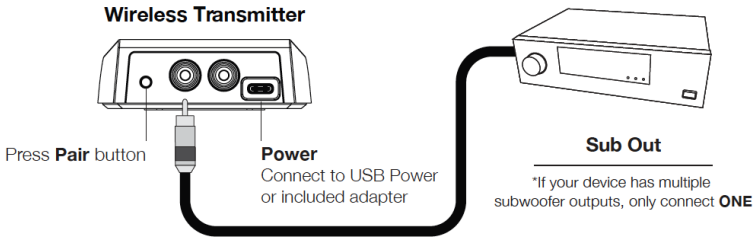
Some electronics do not have dedicated subwoofer outputs and some enthusiasts like to connect their subwoofers with a speaker level connection so that the subwoofer picks up the sonic signature of their chosen amplifier. To that end, this subwoofer is also equipped with speaker level inputs, ready to accept a direct connection to your amplifier using your preferred speaker cable. Banana plugs are required (not included) to use this input, as they provide for a clean installation free from stray wires. This connection method presents no load to your amplifier, and is safe for use even with balanced amplifiers.



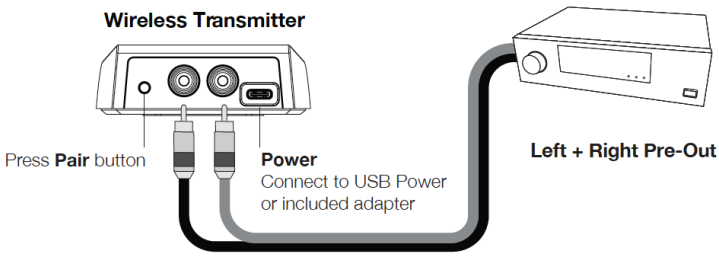
LFE (or for devices with built-in bass management)



Single Wire Connection (or for devices without built-in bass management)



Stereo Connection



CONTROLS

Backplate Controls:

The following controls can be accessed on the back of the subwoofer:

- Level: Interactive LED Backlit Knob, Min–Max
- Tone Sweep: Sweep Start and Pause (with status light)
- Power Mode: On, 12v Trigger, Auto
- Wireless Audio Pairing Button (for included Paradigm wireless transmitter)

App Controls:

The following controls can be accessed via the Paradigm subwoofer control app. Use the camera on your iOS or Android device to scan the QR code on the back of the subwoofer (also available on the packaging and QuickStart Guide) to download the app.

- Level: -40 to 12dB (Min-Max)
- Low-Pass Filter (Frequency): 35–120Hz (1° Increments)
- Low-Pass Filter (Order): Bypass, Third, Fourth
- Phase: 0–180° (1° Increments)
- Phase (Polarity): Normal, Inverted
- DSP Preset Listening Modes: Movie, Music, Night
- 20–30Hz Level: ±10dB
- Anthem Room Correction (ARC Genesis): On, Off
- Tone Sweep (120-20Hz): On, Off, Pause (Frequency)

Level/Volume (on backplate or via Paradigm Subwoofer Control App)

Most AV Receivers or Processors have some form of auto-setup/calibration feature that will typically set the levels of the speakers and subwoofer(s). If using this feature, you can set the volume knob on the subwoofer to roughly the halfway point and let the system calibrate the level for you. If you desire more or less bass than what it configures for you, simply adjust the subwoofer volume control (or the subwoofer level control in your electronics) to achieve your preferred sound.

Tone Sweep (on backplate or via Paradigm Subwoofer Control App)

The tone sweep feature is a useful tool for identifying rattles in your room. Initiating the sweep and pausing it at frequencies that cause things in your room to rattle (like artwork, picture frames, furniture etc.) will help you identify these rattles and address them as you feel appropriate. To initiate the tone sweep you can use the Paradigm Subwoofer Control App, or the buttons on the back of the subwoofer as described below:

1. Press the “Tone Sweep” button for 1 second to start the tone sweep. The “Sweep Status” LED will turn white. Use the subwoofer level control as needed.
2. Press the “Tone Sweep” button again to hold the sweep at a specific frequency. The “Sweep Status” LED will turn red while the sweep is holding.
3. Press the “Tone Sweep” button again to stop the sweep. The “Sweep Status” LED will turn off.
4. Repeat these steps as needed.

Note: The tone will turn off after 1 minute from the last button press.

Power Mode (on backplate only)

This subwoofer features a signal-sensing power supply that when set to “AUTO” will automatically turn the subwoofer on when a signal is detected on any input. It will also power off the subwoofer after sensing no signal for several minutes. The “ON” power mode leaves the subwoofer powered on and ready to play all the time with no delay, but will draw more power while not actively in use. “Trigger” mode is the correct setting when using a 12v trigger cable (3.5mm) from an external device to control the subwoofer power status.

Low-Pass Filter (via Paradigm Subwoofer Control App only)

The Low Pass Filter lets you adjust the low-pass frequency for the left and right inputs. The Low-Pass filter value sets the point where the subwoofer will begin to “roll off” or gradually reduce its output. You do not want your subwoofer playing sounds that are too high in frequency, nor do you want to give your subwoofer too little content to play. This control does not act like a “brick wall” where it completely cuts off sounds above the chosen value, again, it marks the point where the subwoofer will gradually fade out.

If you are using this subwoofer as an LFE channel in a home theater system, or your electronic device already has a built-in Low-Pass Filter, set this control to Bypass. In this mode your electronics will handle the bass management instead of the subwoofer. If your device has a Low-Pass Filter and you do not set the subwoofer's Low-Pass Filter to "Bypass" then you will essentially have 2 filters stacked on top of each other which can significantly reduce the bass output in certain ranges.

If you are using this subwoofer in a 2-channel stereo system, or with a device that does not have a built in Low-Pass Filter, set this control to your desired value. As a general rule, the Low-Pass Filter in these systems is typically set in increments of 20Hz (40/60/80/100) and typically will not exceed 80Hz. 80Hz is often a good starting point for a wide variety of systems. You will not harm anything by experimenting with different settings here. Choose the one you think sounds best. Making this adjustment via the app allows you to listen in real time from your favorite listening position, ensuring the most accurate results.

Phase (via Paradigm Subwoofer Control App only)

The Phase control is entirely dependent on numerous factors including the size and configuration of your listening environment, the placement of the unit, and seating arrangement. Due to the way bass sound waves develop in different rooms; there is no rule of thumb for setting phase. For instance, if your room has a peak at the subwoofer crossover area, you may wish to set the phase so the actual acoustic outputs of the subwoofer and main speakers are out of phase. Experiment and try different settings and be patient, ultimately choose the setting that sounds best to you using a variety of content you like to listen to.

If you are using the subwoofer to augment other Paradigm products, we suggest starting with the phase set at 0°. In a system where phase and polarity are properly set, the main speakers and subwoofer should work together and sound as if there is more total bass in the system. If your main speakers and subwoofers are out of phase their sound waves will cancel each other and total bass output in the system will sound decreased.

DSP Preset Modes (via Paradigm Subwoofer Control App only)

The DSP presets built into the main page of the Paradigm Subwoofer Control App allow you to alternate between 3 preset modes: Music, Movie, and Night. Here is a description of the presets:

Music = The most accurate mode, providing the highest levels of articulation and lowest levels of distortion. Ideal for the most detailed playback of music.

Movie = This mode maximizes the dynamic output of the subwoofer for the most powerful presentation. Ideal for maximum impact from movies.

Night = This mode reduces and limits the subwoofer's dynamic output, which may be ideal for late night playback where avoiding noise complaints is desirable.

20–30Hz Level Control (via Paradigm Subwoofer Control App)

The 20–30Hz Level Control in the app allows you to adjust the output level of the subwoofer, specifically targeting the lowest range of frequencies. This control gives you an adjustment range from -10dB to +10dB, with 0dB being the "flat" setting. Using the app, adjust this setting from your favorite listening position to your preference. This setting can also be adjusted after using the optional Anthem Room Correction system without permanently overriding the results of the calibration process. This value is temporarily set to the default 0dB value during the measurement process, and can be adjusted to taste afterwards if desired.

Anthem Room Correction (Optional: calibration mic sold separately)

This subwoofer is compatible with the award winning Anthem Room Correction system. This highly advanced software measures subwoofer performance in your room and then performs custom equalization, tuning, and calibration to achieve the highest levels of bass impact, and accuracy possible in your specific installation. Requires an ARC Calibration Microphone and PC or Mac computer (sold separately). The ARC setting in the Paradigm Subwoofer Control APP allows you to disable or enable the ARC calibration after it has been uploaded to the subwoofer, allowing you to easily hear the "before" and "after" results.

Break-In  **50 hrs**

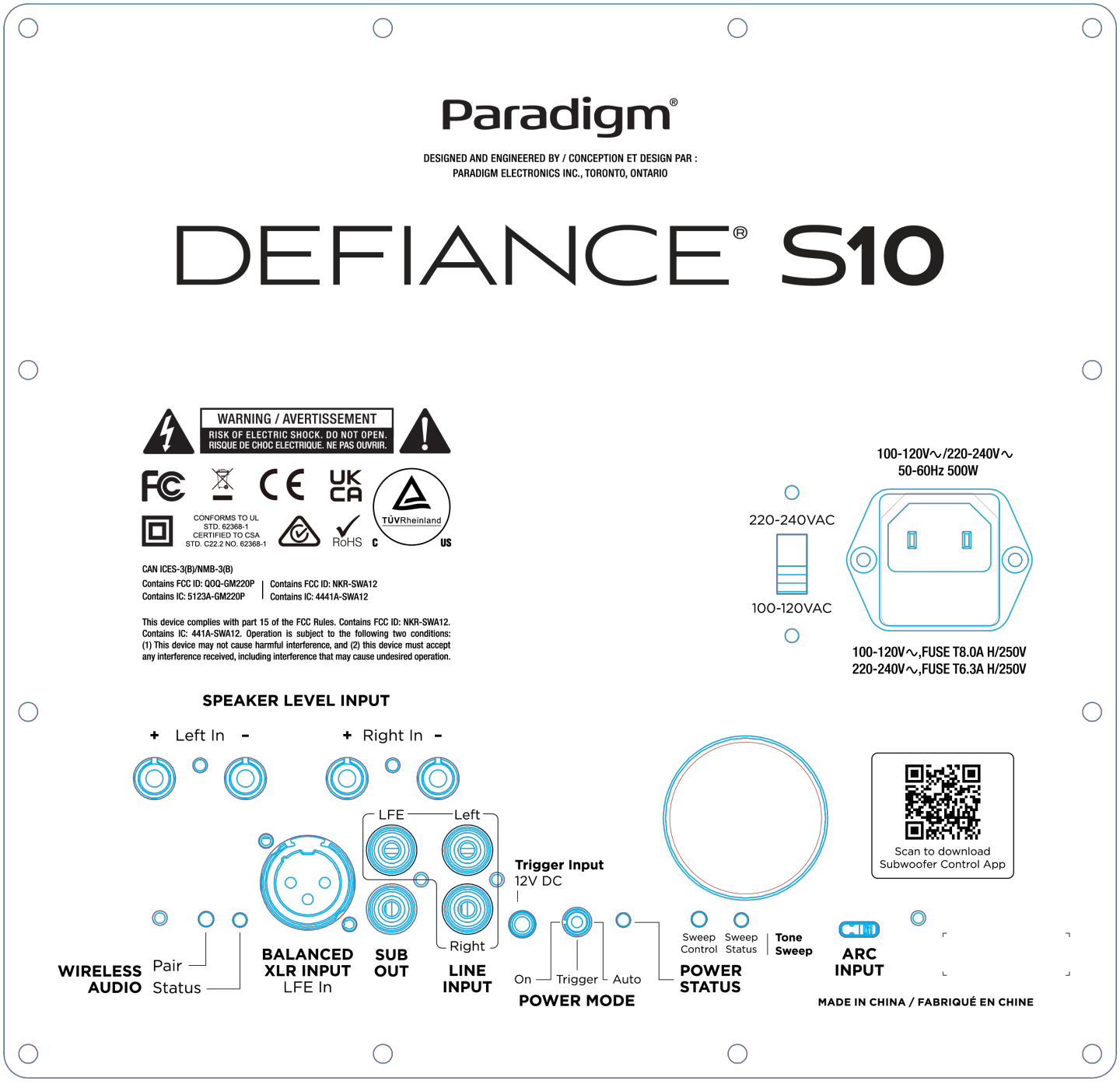
Our custom made woofers require approximately 50 hours of break-in at moderate listening levels before their optimal performance occurs. This will factor in on any critical listening and judgment.

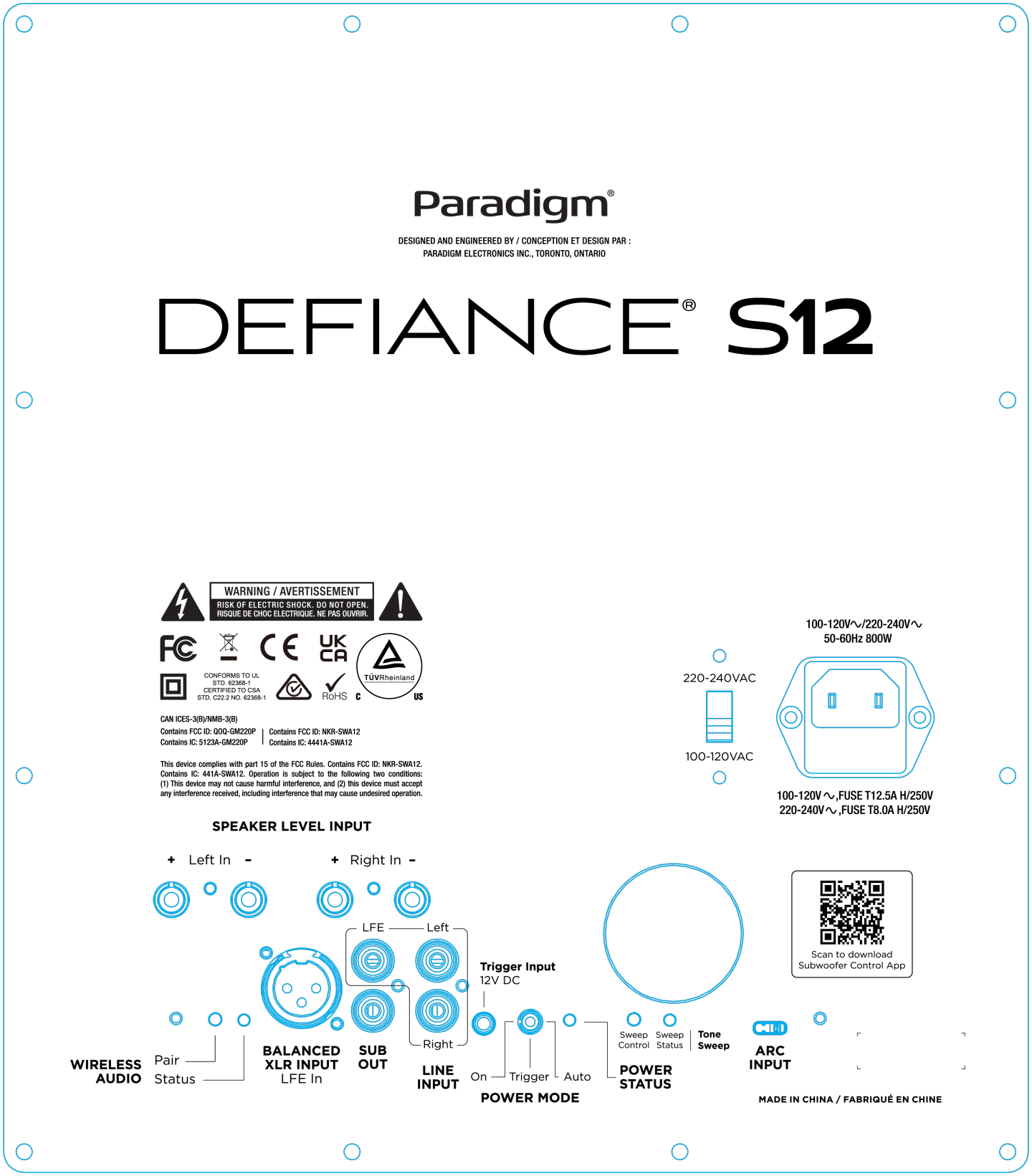
AC Power Connection 

The power cord should not be installed, removed, or left detached from the subwoofer while the other end is connected to an AC power source. The IEC power cord should be firmly inserted into the AC power receptacle on the rear connection panel of the subwoofer, then to any convenient AC wall outlet. The sub also integrates a signal-sensing power supply that automatically

switches off after sensing no music signal for several minutes (this will occur when the power switch is set to 'Auto'). Your subwoofer is wired for the power service supplied in the country of original consumer sale. The AC power rating applicable to a particular unit is specified both on the packing carton and on the serial number plate attached to the subwoofer. If you remove your subwoofer from the country of original sale, be certain that AC power supplied in any subsequent location is suitable before connecting and operating the subwoofer. Substantially impaired performance or severe damage may occur to the subwoofer if operation is attempted from an incorrect AC power source.

7.0 CONTROLS & CONNECTIONS: DEFIANCE S10/S12





1. Level

The Level adjusts the subwoofers output level to match that of your speakers.

NOTE: Two-way feedback.

2. ARC Input

The ARC USB connection is used to connect the subwoofer to PC/Laptop when running Anthem Room Correction (ARC).

NOTE: Not required when running ARC via Bluetooth.

3. Status Indicator

The subwoofers is equipped with a multi-colored LED, (located on the rear) which indicates the current status of the subwoofer

- No illumination — Subwoofer is not on.
- White — Subwoofer is on
- Red — Subwoofer is in 'Standby mode'
- Flashing — Subwoofer has detected an error code.

4. Power Mode

The Power Mode switch allows you to control how the subwoofer turns On & Off.

- Auto — When set to "Auto", the subwoofer will turn on when an audio signal is detected.
- **NOTE:** After several minutes of inactivity the subwoofer will enter Standby Mode.
- **NOTE:** If the subwoofer enters Standby Mode during quiet or low level audio playback, this is likely due to a low audio output signal from the audio system. Increasing the system volume should resume normal subwoofer playback. Increasing the subwoofer output level on the receiver/preamplifier and decreasing the level on the subwoofer will solve this issue in the future for similar listening levels.
- On — When set to "On", the subwoofer will always be on.
- Trigger — When set to Trigger, the subwoofer will power on once a 12V signal is received from the 3.5mm trigger connection.

5. Trigger In

The 3.5mm trigger input (stereo or mono) allows for a dedicated power on signal from the receiver/preamplifier.

6. Line Level Input (Left/Right)

The Line Level Input can be used as a subwoofer connection to the Main-Out or Pre-Out on a receiver/preamplifier.

NOTE: The setting of the Low Pass Filter control is applied to the signal received through these inputs.

7. Line Level Input (LFE)

The Line Level LFE Input can be used as a subwoofer connection to the LFE Out/Sub-Out on a receiver/preamplifier.

NOTE: The Low Pass Filter should be set to Bypass. LFE signals are controlled from your receiver/preamplifier. By default, the Low Pass Filter is set to Bypass.

8. Balanced XLR (LFE)

The Balanced XLR LFE Input can be used as a subwoofer connection to the LFE Out/Sub- Out on a receiver/preamplifier.

9. Speaker Level Inputs (Left/Right)

The Speaker Level Inputs allows standard speaker cable be used for the subwoofer connection. To use these connections the speaker cable should be terminated using banana style plugs.

NOTE: The Low Pass Filter should be set to Bypass. LFE signals are controlled from your receiver/preamplifier. By default, the Low Pass Filter is set to Bypass.

10. AC Power Connection

WARNING! The power cord should not be installed, removed, or left detached from the subwoofer while the other end is connected to an AC power source.

The IEC power cord should be firmly inserted into the AC power receptacle on the rear panel of the subwoofer. Then to any convenient AC wall outlet.

NOTE: The sub also integrates a signal sensing power supply that automatically switches off after sensing no music signal for several minutes (this will only occur when the power switch is set to 'Auto').

8.0 CONTROLLING YOUR SUBWOOFER USING THE APP/FINE TUNING

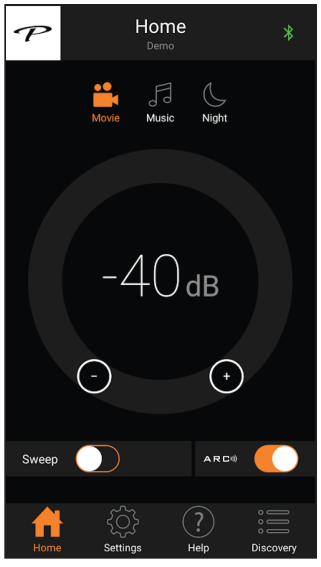
Your Defiance subwoofer uses an advanced app based system to control its many features. This app is available for both iOS and Android. Visit Paradigm's web site for details on downloading this free subwoofer app or download from iOS or Android app stores.

Please note that this subwoofer app is subject to updates, and may differ slightly from what is described in the following pages.

Note: If the app has trouble discovering your subwoofer, ensure the Anthem Room Correction (ARC®) app is not open in the background.

OPERATION

Press on the logo button to see basic subwoofer information.



Menu Bar

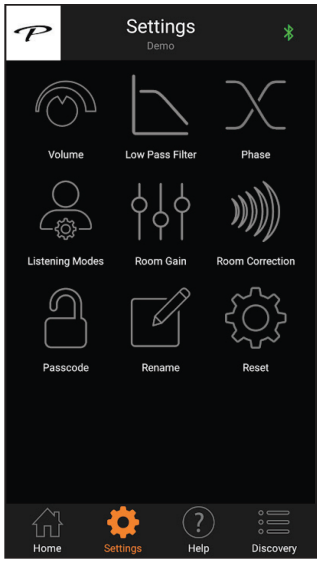
Home: Lets you adjust your subs volume, select a listening mode and run a tone sweep.

Help: Displays a pop-up window with a description of the control currently displayed on the screen.

Discovery: Choose the sub model, from the list, that you want to control. If you can't see your subwoofer, make sure the Setting Control is set to "app" on the back of the subwoofer and that ARC mobile isn't running on your device. Also, check that it isn't being controlled by another mobile device running ARC or the subwoofer control app.

SETTINGS

Lets you select the subs control functions: volume, low pass filter, phase, room correction and more.

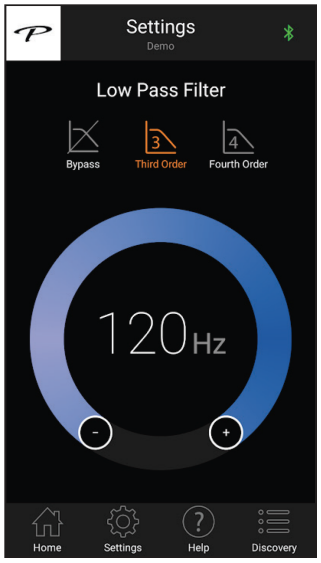


Volume: Adjusts loudness of your subwoofer. For most applications, a setting between –14dB and 0dB is adequate.

Sweep: The Sweep feature is useful for locating areas in your listening room where troublesome rattles or resonances may occur. Pressing the pause button pauses the subwoofer at a specific tone frequency and also allows you to set a specific tone frequency.

Low Pass Filter: Applied to Left/Right inputs (Not LFE). This setting allows you to select the frequency (point at which the filter starts) and order of the Low Pass filter. (The order of the filter refers to how steep the roll off it is, each additional order noted is another 6dB of roll off per octave, 1st order is 6dB, 2nd order is 12dB, etc.) These settings depend on how low your main speakers play. It is often best to set to bypass and use your receiver/preamp's bass management settings so there is no overlap or missing information between the main speakers and the subwoofer.

Bypass: Engage if you intend to use your receiver/preamp's bass management to set a low pass filter.



Phase: This setting allows you to adjust the timing relationship between your main speakers and your subwoofer. Allows you to adjust the phase of the subwoofer from 0 – 180 degrees in increments of 1 degree and allows you to invert the polarity of the phase. Phase control is entirely dependent on numerous factors including the size and configuration of your listening environment, the placement of the unit, and seating arrangement. A good rule of thumb is to set phase at 0 if your sub is at the front of the room and 180 if it is in the rear.

Room Gain

The Room Gain screen allows you to adjust subwoofer output from –10dB to +10dB in the 20-30Hz range. This control and Anthem Room Correction (ARC) serve similar purposes. Where this control is limited to the 20-30Hz frequency range, ARC adjusts your subwoofer's output across its entire frequency range. If not using ARC, this control can be used to modify your subwoofer's response to compensate for the room anomalies or to modify the subwoofers sound to your personal taste. The frequencies adjusted are between 20-30Hz – a range where peaks (room gain) and dips of different amplitudes often develop in listening rooms. The ideal setting is dependent on room size and construction, system configuration, and personal preference. As a rule of thumb, if your low-bass sounds weak, increase this control. If your low-bass sounds bloated, decrease this control.

If you are using ARC, this control can be used to match your personal taste by further changing the way the subwoofer sounds.

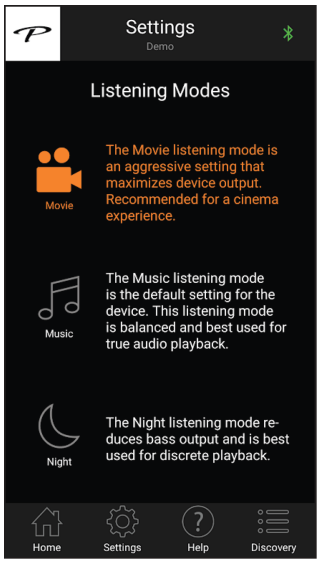
NOTE: The Room Gain setting will not affect the ARC measurements or compensation filters. If you have an ARC correction uploaded to your subwoofer, we recommend first listening with this control set to 0. Remember, the setting will adjust the subwoofer output in addition to ARC's adjustments.

Room Correction: Confirms information on Anthem Room correction (ARC®). The ARC toggle allows you to turn ARC correction on and off (only available if ARC software has been used to upload a correction curve to your sub). This is an effective tool for hearing the difference that Anthem Room Correction makes!

Passcode: The passcode lets you protect your subwoofer's settings with a custom 4-digit passcode. Once a passcode is set it an also be cleared on this screen.

Rename: The rename screen lets you assign a name to your subwoofer. This is useful if you have multiple subwoofers in your system. This name must be between 3-13 characters long.

Reset: The Reset screen lets you perform a factory reset.



Listening Modes

The Listening Modes screen lets you apply preset listening modes to the subwoofer's output. Listening modes are also accessible form the app's Home screen:

Movie: The Movie listening mode is an aggressive setting that maximizes device output for an especially explosive experience.

Music: The Music listening mode is the default setting for the Defiance subwoofers. This mode is balanced and best used for an accurate musical presentation.

Night: The Night listening mode reduces bass output and is best used for discrete playback.

9.0 SETTING SUBWOOFER CONTROLS

Using The App — With LFE Connection

1. Turn the **Level** control completely counter clockwise to its minimum.
2. Turn the **Low Pass Filter** control to Bypass.
3. Turn the **Phase** control to **0°** (completely counter clockwise).
4. Listen to a bass music or video selection while seated in your primary listening area and turn up the **Level** control until the subwoofer can be clearly heard.
5. Rotate the **Phase** control until you hear the most bass. Your subwoofer and front speakers are now in phase. Do not change phase alignment again unless you move the subwoofer or front speakers to a different location in your room, or move or remove any large items of furniture or room furnishings (i.e. carpet, draperies, etc.)
6. Turn the **Level** control completely counter clockwise to its minimum.
7. Slowly rotate the **Level** control until you match the subwoofer's volume with the Volume of your front speakers. Bass should be clearly audible, but not intrusive.

NOTE: If you happen to have an SPL meter, set the meter to 80, SLOW and C weighted. Then enable the subwoofer test tones on your receiver, preamplifier or preamp/processor. With this set repeat **Step 8** until the meter reads **75dB**.

10.0 ANTHEM ROOM CORRECTION (ARC)

A True Scientific Solution to the Problems of the Room

Even when the finest speakers are perfectly positioned, the room itself still has a dramatic impact on any system's sound, an impact more profound than that of any individual component. Various solutions have fallen in and out of favor over the years, but none has solved the problem of "the room," until ARC (Anthem Room Correction) technology.

ARC technology is a proprietary digital signal processing system that allows you to quickly and accurately optimize the performance of your audio equipment to better suit the unique parameters of your room.

By listening to your room's acoustic signature, ARC can tune your equipment to correct for the performance-robbing effects (reflections, resonances, standing waves, etc.) of the various surfaces and other obstacles in your room.

ARC is easy to use, and just a few simple steps can optimize your subwoofer for your unique listening space. ARC is sophisticated, one of the most accurate and detailed digital room correction technologies available today. ARC will work tomorrow, too; with constant advances and updates available for download on the Anthem website.

Now there are THREE ways to calibrate your system using ARC or ARC Mobile — each takes only a few minutes to complete.

IMPORTANT! The listening space must be silent while performing ARC. A noisy computer fan, a dishwasher or microwave running, etc. can negatively affect ARC's measurements.

EASY

Requirements:

- iOS Device
- ARC Mobile App

Download Anthem's ARC Mobile app to your iOS device. This method uses your iOS device's built-in microphone for measurements.

This method walks you through step by step via the app.

INTERMEDIATE

<u>Method for Apple iOS Device Users</u>

Requirements:

- iOS Device
- ARC Mobile App
- ARC Universal Microphone
  (sold separately — see your Paradigm dealer for details)

Download Anthem's ARC Mobile app to an iOS device. Run the ARC app and select "ARC Universal Microphone," connect the supplied 3.5 mm cord from your iOS device to the ARC Universal Microphone for measurements.

This method walks you through step by step via the app.

Method for Apple iOS Device Users

Requirements:

- Android Device
- ARC Mobile App
- ARC Universal Microphone
  (sold separately — see your Paradigm dealer for details)
- OTG USB Adapter
  (sold separately — see your Paradigm dealer for details)

Download Anthem's ARC Mobile app to an Android device. Run the ARC app and connect the USB OTG adapter from your Android device to the ARC Universal Microphone for measurements.

This method walks you through step by step via the app.

PROFESSIONAL

Requirements:

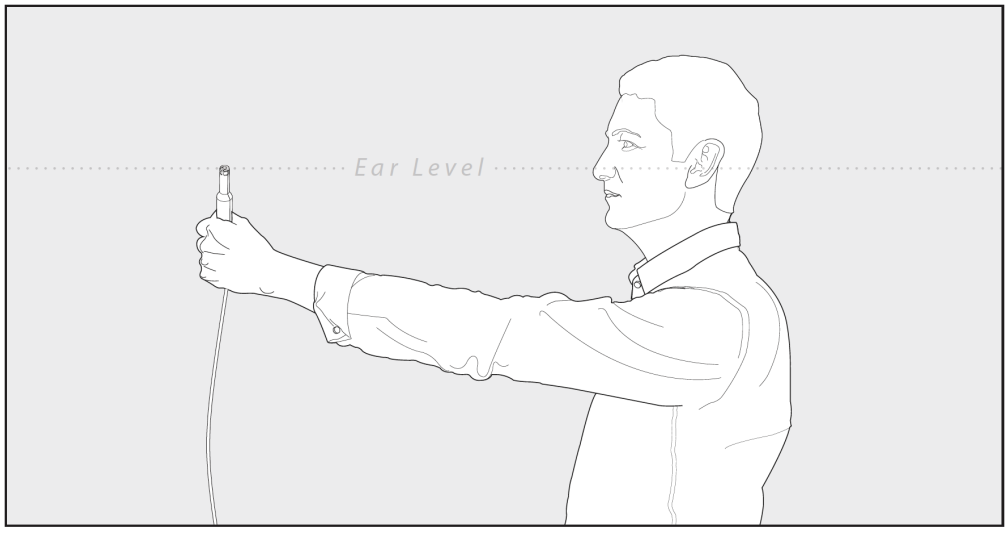
- Windows PC
- ARC PC Software
- ARC Universal Microphone
  (sold separately — see your Paradigm dealer for details)

Download and install Anthem's ARC PC software to your Windows PC. Connect either the calibrated ARC PC Microphone or ARC Universal Microphone to your Windows PC, and connect your ARC-capable speaker or electronics with either the second USB cord or through a network connection. After running your measurements, you can customize the results, set up multiple configurations, and print correction curve graphs.

HOW TO USE ARC TECHNOLOGY

Professional Version

1. Download the latest version of ARC-2 software from www.anthemav.com and install it. Follow the on-screen instructions.
2. Using the USB cables provided, connect one from the ARC microphone to the PC and the other from the PC to the back of the subwoofer.
3. Look for the icon on your desktop and launch the ARC program. Follow the prompts on your computer screen to successfully run the ARC software; the entire process should take approximately 15 minutes.
4. Hold the ARC microphone with your arm fully extended, the ARC microphone tip must point towards the ceiling and it must be positioned at ear level.
5. For best results, hold the microphone in 5 different positions around the room.



NOTE: The recommended measuring positions should be located at or just in front of the central seating position **(see Diagram A)**. If your "main measurement position" is against a wall, additional measurement positions should be in front of the seating area. Vary the distance of these positions relative to the wall by 1 foot or more from each other so they are not all the same distance from the wall **(see Diagram B)**.

TIP! Once the ARC process is complete, the audio will be played back reflecting these corrections. To turn ARC correction on and off, use the Paradigm Subwoofer App and navigate to 'Anthem Room Correction'.

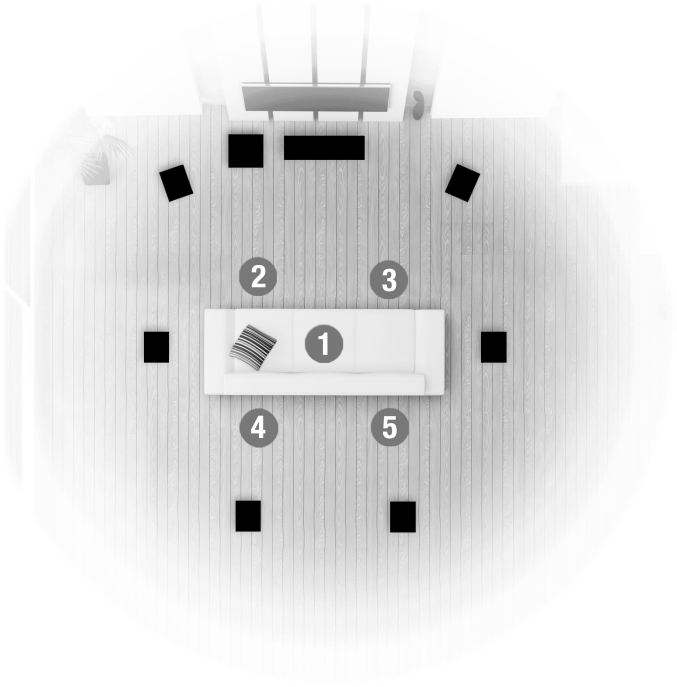


Diagram A

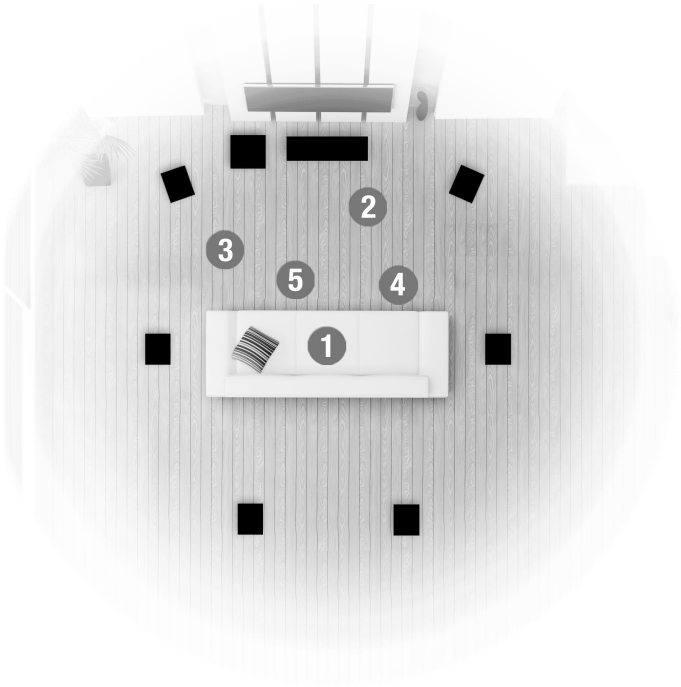


Diagram B

11.0 LIMITED WARRANTY

PARADIGM® SUBWOOFERS: The Paradigm Subwoofers covered in this manual are warranted to be and remain free of manufacturing and/or material defects for a period of three (3) years from the date of the original retail purchase. Within the time period specified, repair, replacement or adjustment of parts for manufacturing and/or material defects will be free of charge to the original owner.

PARADIGM® SUBWOOFER WIRELESS KIT: The Paradigm Subwoofer Wireless Kit is warranted to be free from manufacturing and/or material defects for a period of one (1) year from the date of the original retail purchase. During this time, any necessary repair, replacement, or adjustment due to such defects will be provided free of charge to the original owner.

Thermal or mechanical abuse/misuse is not covered under warranty.

Limitations:

- Warranty begins on date of original retail purchase from an Authorized Paradigm® Dealer only. It is not transferable;
- Warranty applies to product in normal home use only. If the product is subjected to any of the conditions outlined in the next section, warranty is void;
- Warranty does not apply if the product is used in professional or commercial applications. Warranty is Void if:
- The product has been abused (intentionally or accidentally);
- The product has been used in conjunction with unsuitable or faulty equipment;
- The product has been subjected to damaging signals, derangement in transport, mechanical damage or any abnormal conditions;
- The product (including cabinet) has been tampered with or damaged by an unauthorized service facility;
- The serial number has been removed or defaced. Owner Responsibilities:
- Provide normal/reasonable operating care and maintenance;
- Provide or pay for transportation charges for product to service facility;
- Provide proof of purchase (your sales receipt given at time of purchase from your Authorized Paradigm® Dealer). Should servicing be required, contact your nearest Authorized Paradigm® Dealer, Paradigm Electronics Inc., or Import Distributor (outside the U.S. and Canada) to arrange, bring in or ship prepaid any defective unit. Visit our website at www.paradigm.com for more information. Paradigm Electronics Inc. reserves the right to improve the design of any product without assuming any obligation to modify any product previously manufactured. This warranty is in lieu of all other warranties expressed or implied, of merchantability, fitness for any particular purpose and may not be extended or enlarged by anyone. In no event shall Paradigm Electronics Inc., their agents, or representatives be responsible for any incidental or consequential damages. Some jurisdictions do not allow limitation of incidental or consequential damages, so this exclusion may not apply to you. Retain this manual and your sales receipt for proof of warranty term and proof of purchase.

NOTES