RUBICON R10S

ACTIVE SUB WOOFER

150 Watt Active Sub Woofer

Owners Manual

SAMSON AUDIO

STUDIO REFERENCE MONITORS

Introduction

Thank you for purchasing the Samson Rubicon R10s Active Subwoofer. Taking care of the low end for your Rubicon or any any near-field monitor system, a powerful 150-watt low frequency amplifier drives a heavy-duty 10-inch transducer, reproducing tones between 40 –180 Hz. The R10s's low frequency driver is an 10-inch, 34mm excursion transducer with a Butyl surround, providing extended range and tight low frequency response. The R10s comes with an infrared remote control, allowing you to easily control your monitor system from anywhere in the control room. The remote control instantly gives you additional control room monitoring features by providing Sub Volume, System Volume, Dim, Sub Mute and System Mute. In order to maximize the sound of your monitor system, the R10s has a built-in active crossover, with variable crossover frequency, for connecting to your satellite speakers. The R10s provides intelligent sub-satellite control thanks to the clever switching that automatically returns the satellites to full-range operation whenever the R10s is muted. The rear panel features a footswitch jack allowing you to easily switch on and off the subwoofer on the fly. With a phase switch to time align your monitors, the R10s provides expanded control. Balanced inputs and outputs on standard XLR and 1/4-inch connectors make interfacing to other active monitors or power amplifier simple. The R10s's enclosure is constructed of rigid MDF (Medium Density Fiberboard) to insure maximum sound pressure level and is finished in durable black satin textured paint. The R10s is also a perfect add-on to your Rubicon 5a, 6a, or 8a, or for any near field monitor system where extended low end is desired.

In these pages, you'll find a detailed description of the features of the R10s subwoofer, as well as a guided tour through its control panel, step-by-step instructions for its setup and use, and full specifications. You'll also find a warranty card enclosed—please don't forget to fill it out and mail it in so that you can receive online technical support and so we can send you updated information about these and other Samson products in the future.

With proper care and adequate air circulation, your R10s will operate trouble free for many years. We recommend you record your serial number in the space provided below for future reference.

Serial number:_____

Date of purchase: _____

Should your unit ever require servicing, a Return Authorization number (RA) must be obtained before shipping your unit to Samson. Without this number, the unit will not be accepted. Please call Samson at 1-800-3SAMSON (1-800-372-6766) for a Return Authorization number prior to shipping your unit. Please retain the original packing materials and if possible, return the unit in the original carton and packing materials.

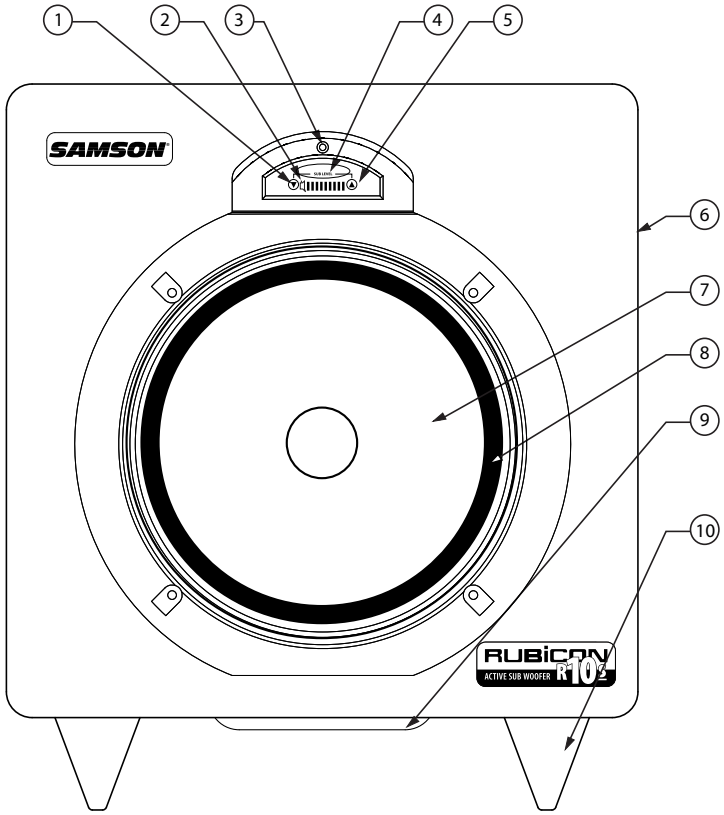
Rubicon R10s Features

The Samson Rubicon R10s reference subwoofer is a perfect compliment to the Rubicon models or any near-field or multi-media monitor system. Here are some of its main features:

- Heavy-duty, 1.3" long excursion (34mm) transducer with Butyl surround
- 150 Watt Power Amplifier
- Infrared Remote control for System volume, Sub volume, Dim, Mute and Sub Mute
- Eight-segment LED Input VU Meter
- Tuned Port Enclosure
- High Pass Outputs for satellite speakers, which return to full range operation when the sub is muted
- Variable Crossover 40 - 150 Hz
- Mute Switch Footswitch Jack
- Phase Switch
- Balanced Line Inputs and Outputs on XLR connectors plus Unbalanced Line Inputs on RCA connectors.
- Volume Control
- Black Satin Finish
- Three-year extended warranty

Rubicon R10s Layout

Front View Layout



1 **SUB DOWN** - Push switch used to lower the Sub volume.

2 **MUTE** – LED lights indicating that the sub is off.

3 **POWER LED** – Blue LED lights indicating that the R10s is powered up and ready for operation. The Power LED will also flash while receiving information from the IR remote control.

4 **VU METER** – Eight segment LED VU meter showing input level.

5 **SUB UP** – Push switch used to raise the Sub volume.

6 **ENCLOSURE** - Rigid MDF (Medium Density Fiberboard) construction finished in a sleek black textured paint.

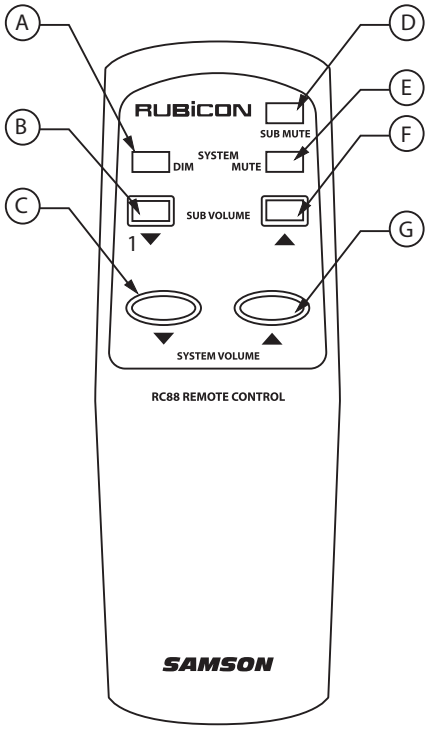
7 **TRANSDUCER** - Heavy Duty 10," long excursion (34mm) extended range low frequency transducer.

8 **BUTYL SURROUND** - Provides maximum excursion while maintaining tight bass response.

9 **TUNED PORT** - Quiet port design offering linear extended low frequency response. (Bottom of unit.)

10 **NON-SKID FEET** - Large, hard, plastic feet keep enclosure in place even at high sound pressure levels.

Remote Control Layout



A **SYSTEM DIM switch** – When pressed the system level is lowered by 20dB.

B **SUB VOLUME DOWN switch** – Push switch used to lower the level of the sub-woofer.

C **SYSTEM VOLUME DOWN switch** – Push switch used to lower the overall system level.

D **SUB MUTE switch** – When pressed the sub-woofer is turned off.

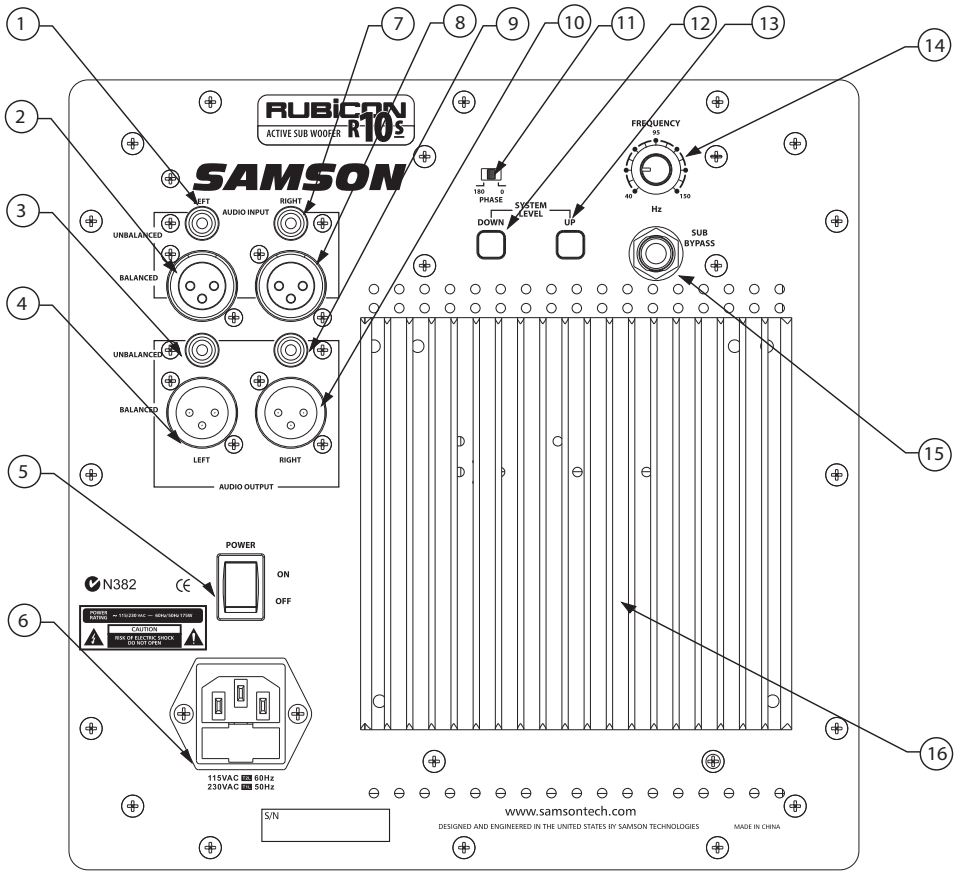
E **SYSTEM MUTE switch** – When pressed the system is turned off.

F **SUB VOLUME UP switch** – Push switch used to raise the level of the sub-woofer.

G **SYSTEM VOLUME UP switch** – Push switch used to raise the overall system level.

Rubicon R10s Layout

Rear Panel Layout



1 **LEFT UNBALANCED INPUT** - Female RCA connector that accepts unbalanced line level signals.

2 **LEFT BALANCED INPUT** - Female XLR connector that accepts balanced line level signals.

3 **LEFT UNBALANCED OUTPUT** - Female RCA connector that sends unbalanced line level signals to powered satellite speakers or an amplifier connected to passive satellites.

4 **LEFT BALANCED OUTPUT** - Male XLR connector that sends the balanced line level signals to powered satellite speakers or an amplifier connected to passive satellites.

5 **POWER SWITCH** – Used to switch on the R10s.

6 **AC INLET** - Connect the supplied standard IEC power cable here.

7 **RIGHT UNBALANCED INPUT** - Female RCA connector that accepts unbalanced line level signals.

8 **RIGHT BALANCED INPUT** - Female XLR connector that accepts balanced line level signals.

9 **RIGHT UNBALANCED OUTPUT** - Female RCA connector that sends unbalanced line level signals to powered satellite speakers or an amplifier connected to passive satellites.

10 **RIGHT BALANCED OUTPUT** - Male XLR connector that sends the balanced line level signals to powered satellite speakers or an amplifier connected to passive satellites.

11 **PHASE SWITCH** - Allows for 180 degrees out-of-phase operation.

12 **SYSTEM LEVEL DOWN** - Used to lower the overall output level.

13 **SYSTEM LEVEL UP** – Used to raise the overall output level for the R10s and connected satellites.

14 **FREQUENCY** - Adjusts the low frequency end range of the High-Pass outputs.

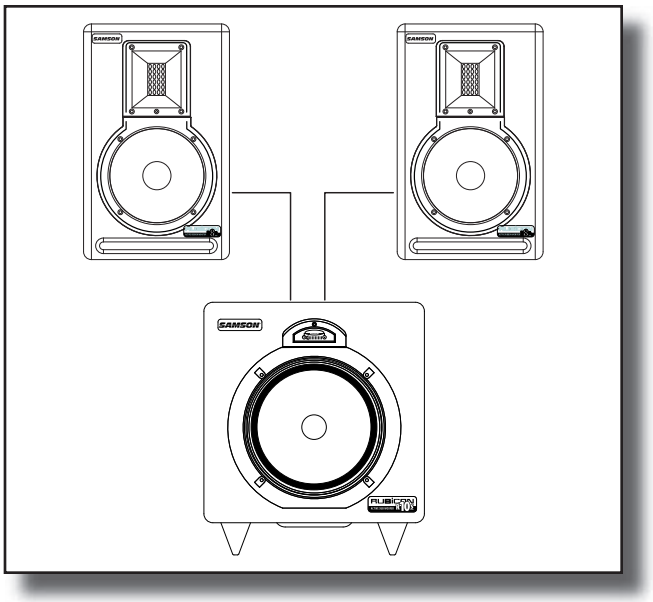
15 **SUB BYPASS JACK**- Used to connect an external switch to activate the internal mute function.

16 **HEAT SINK** - Provides cooling of internal power amplifier.

Setting up the R10s - Quick Start

CONFIGURING YOUR MONITOR SYSTEM

Before you start plugging in cables, you should take a minute and decide how you want to interface your new subwoofer.



Common Sub Operation

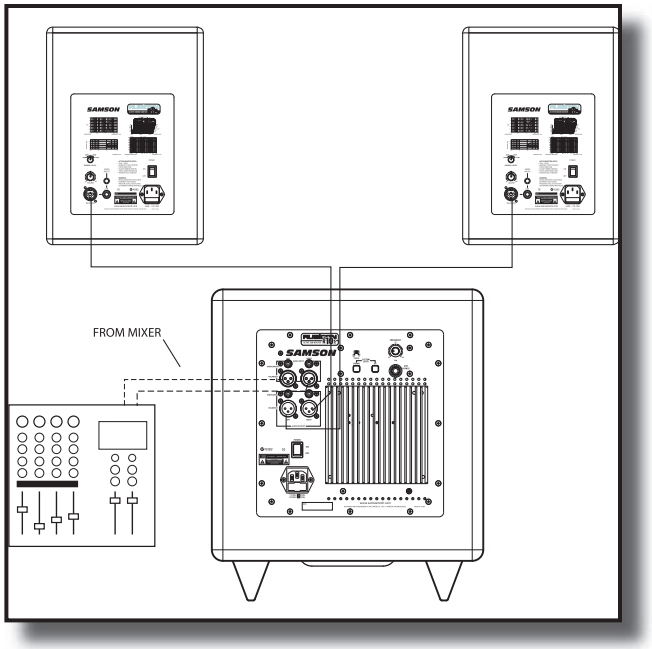
In most cases, a common sub (mono) bass operation is desired. This is true for several reasons, but mostly because low frequencies produced by a subwoofer tend to be non-directional. Since low frequency sound waves take so much space to develop, you can't tell if the sub-bass is coming from the left or right side,unless of course you're in a very large room. Because of this phenomenon, just about all sub-bass material is mixed in mono.

Placing the R10s

Because the low frequencies reproduced by the R10s are non-directional, you can position the unit almost anywhere. It is however, a good idea to keep the R10s away from corners. Ideally the R10s should be positioned in the middle, and up close to the wall you are facing in the mixing posi-

Quick Start

Setting up your R10s Active Subwoofer is a simple procedure, which takes only a few minutes: The following section is an explanation to get your Rubicon, sub-satellite monitor system running. The example assumes that you are using an active satellite speaker like a Rubicon 5a.



- Remove all packing materials (save them in case of need for future service) and decide where the unit is to be physically placed.

- Make sure the power to your mixers powered satellite monitors and other equipment in your audio system is off. Locate the R10s's Power switch on the rear panel and place the to its OFF position.

- Connect your mixer's left and right output to the left and right AUDIO INPUTS on the R10s rear panel.

Note: It is always recommended to use balanced cables when ever possible. For a detailed wiring diagram see page 16 in this manual.

- Now, connect the R10s's left Audio Output to the input of the left side satellite speaker and the connect the R10s's right AUDIO OUTPUT to the right side satellite speaker.

- Locate the FREQUENCY control on the R10s's rear panel and set the knob to 70Hz (10 o'clock position).

- Before you power up your gear make sure that your mixer's output level is turned all the way down so you can fade up your new monitor system.

Operating the Rubicon R10s

Quick Start - Continued

- Now, power up the R10s.
- Press and hold the rear panel SYETEM LEVEL DOWN control for 5 seconds. This will let you start with the monitor system turned all the way off.

  Now, power up your active satellite speakers and set the volume for the normal operating level.
- Apply a signal (like music from a CD or MP3 player) and check the mixer master level meter to see that you have a good signal.

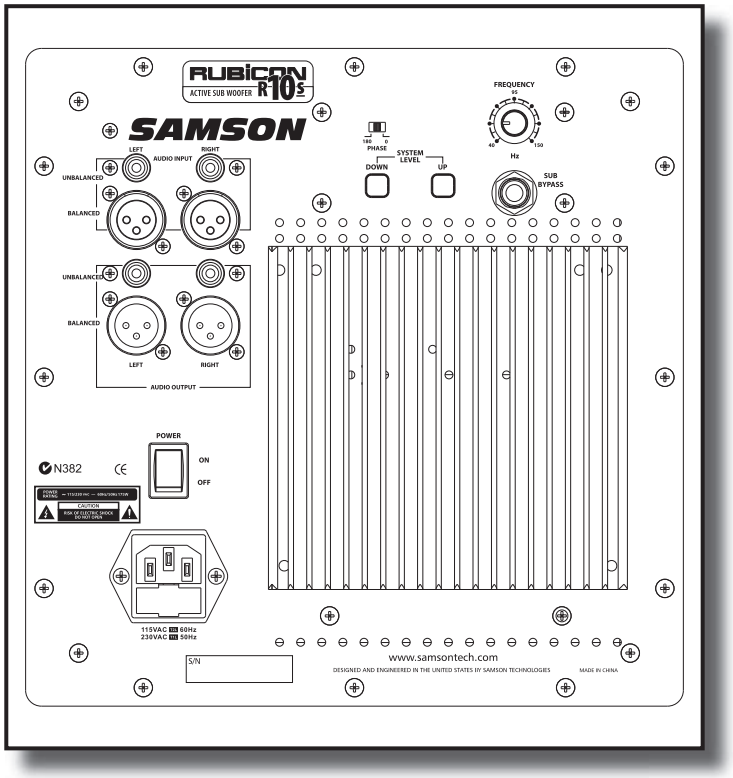
Once you confirm a good signal is being sent from the mixer, use the R10s's rear panel SYSTEM LEVEL UP and DOWN controls to set the monitor system to the desired operating volume. Bure sure to check the front panel VU meter to avoid clipping the R10s's input.

Note: You can fine tune your system response to your particular liking by adjusting the crossover FREQUENCY control, as well as, the balance between the sub and satellite levels. If you do not have a digital real time analyzer, you'll have to use your ears by checking the sound of various recordings that are familiar to you. You can also use a digital RTA like the Samson D1500 to flatten the system perfectly.

Operating the Rubicon R10s

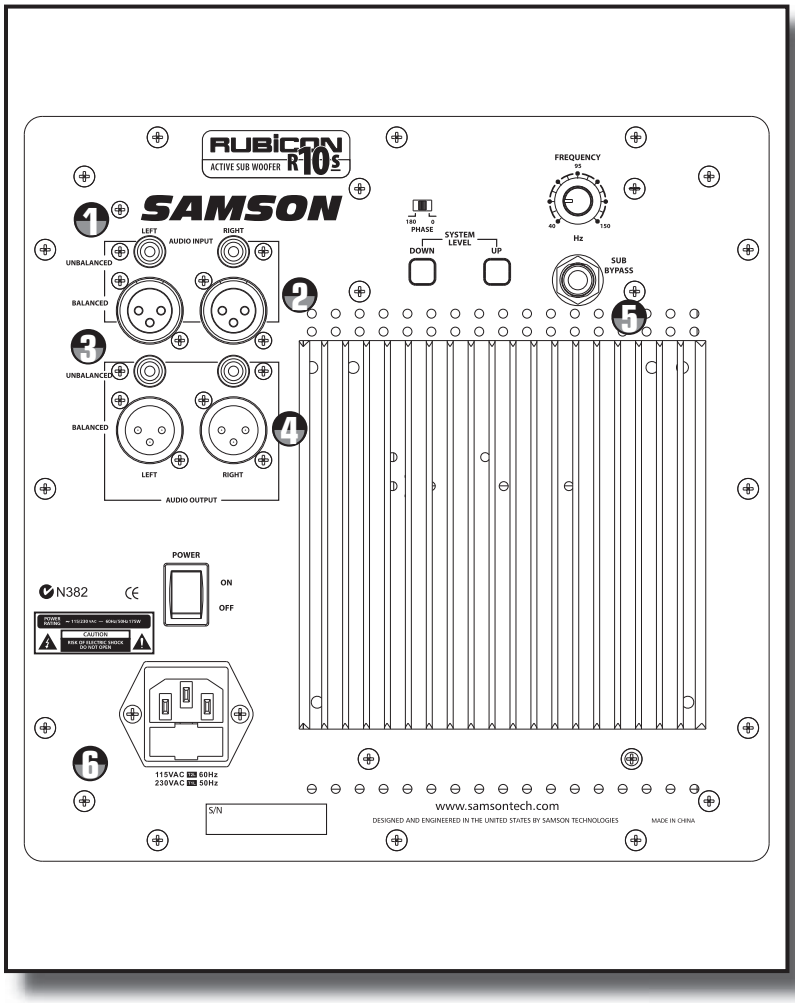
Rubicon R10s Control Panel

The R10s's control panel provides the connections and user interface to the R10s's internal electronic crossover and power amplifier section. The internal amplifier is a 150 Watt power amplifier capable of producing incredible bass output. The R10s employs an electronic crossover that adjusts the high frequency cutoff point for the subwoofer, and also a high-pass output for your satellite speakers. You will achieve a tremendous benefit in sound quality by running your satellites speakers from the R10s's High-Pass outputs. The reason for this is that when your satellite speaker receives the filtered output from the R10s, it will no longer be looking at the frequencies below the crossover point. Let's say your satellite speaker has a natural frequency roll-off at 70 Hz, and you are sending full range signal (as low as 20Hz) to the satellite amplifier and speaker. Even though the speaker can only reproduce 70Hz and up, the amplifier is still outputting 20-70Hz, which is wasted power and ultimately turns into heat. By using the R10s's High-Pass output, the satellite amplifier and speaker never see the frequencies lower than what's set by the Frequency control . This means you'll have more power dedicated to the frequencies you want the satellites to reproduce, resulting in a much cleaner sound with more headroom.



The Ins and The Outs

The R10s features both balanced and unbalanced line level inputs and outputs so that connection with passive or active satellites is easy. It is recommended that you use the balanced line inputs and outputs to interface the R10s with active monitors like the Rubicon 5a or 6a's. See page 16 for a detailed cable wiring diagram.



1 UNBALANCED INPUTS

Unbalanced connections can be made using the female RCA connectors.

Note: *In order to get the lowest amount of induced noise and hum, use the Balanced connectors whenever possible.*

2 BALANCED INPUTS

If you want to connect your mixer using balanced line level signals, use the female XLR connectors.

3 UNBALANCED OUTPUTS

These female RCA connectors send unbalanced line level signals to powered satellite speakers or an amplifier connected to passive satellites.

4 BALANCED OUTPUTS

Male XLR connectors that send the balanced line level signals to powered satellite speakers or an amplifier connected to passive satellites.

5 SUB BYPASS JACK

The Sub Bypass jack provides a switch closure to activate R10s's internal mute circuit. By using a standard footswitch that you can buy at your local music store or by making a cable with a switch, or even by wiring a switch permanently in the mix area, the R10s can be easily turned on and off.

6 AC INLET

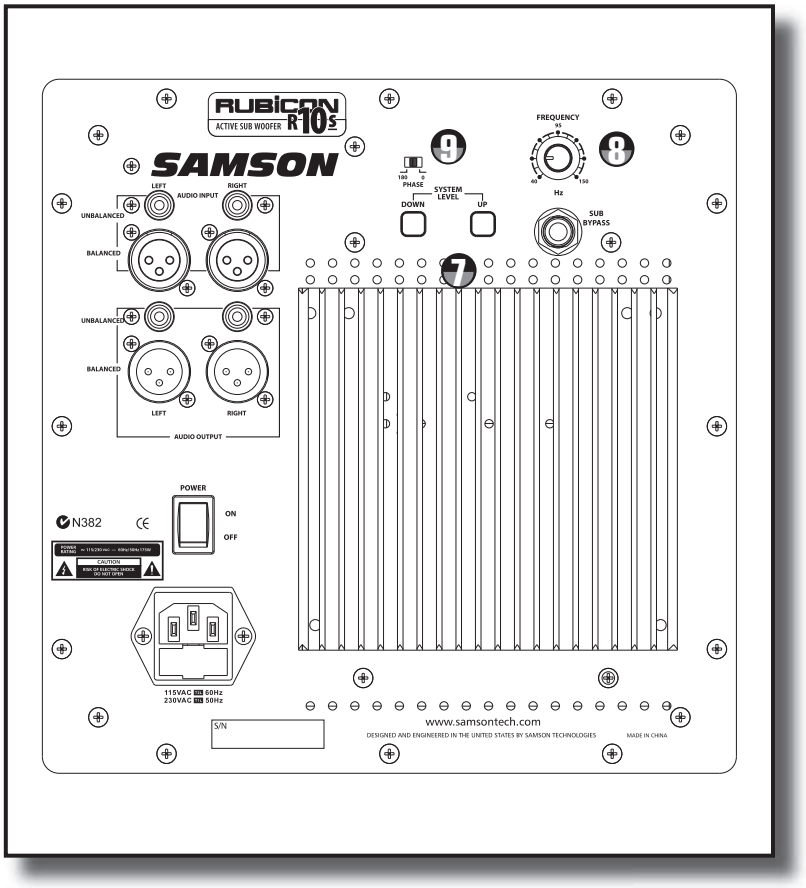
Connect the supplied IEC power cable here. Be sure that the power switch is in the OFF position when connecting the AC cord.

Operating the Rubicon R10s

Control Functions and Indicators

7 SYSTEM LEVEL Up and Down Controls

The volume control is used to adjust the amount of level to the R10s subwoofer. In addition, the volume control will also control the output level of the high-pass outputs. Therefore, if you are using the R10s without using the high-pass outputs, the volume control adjusts the low frequency output of the R10s. If you are using the R10s's internal electronic crossover to run satellite speakers, then the volume control will adjust the overall system level.



8 FREQUENCY

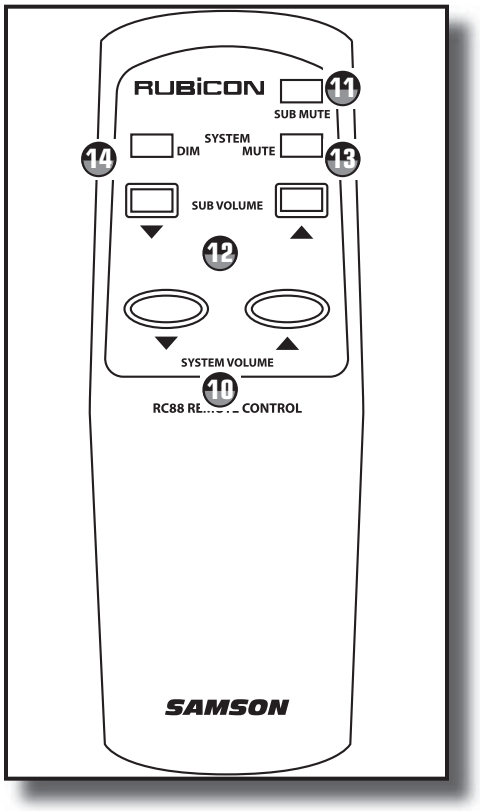
The FREQUENCY control selects the upper range cutoff frequency of the R10s's internal electronic crossover with a range of 40 Hz to 180 Hz. The R10s's crossover provides a 12dB per octave, Linkwitz Riley filter curve. The FREQUENCY adjusts the highest frequency that the R10s will reproduce, and at the same time, the high-pass outputs track the selected cross-over frequency as the lower limit frequency to the satellite speakers.

9 PHASE Switch

The R10s can be switched for inverted phase operation by setting the PHASE SWITCH to the 180° (degree) position. Experiment with this switch to provide the best blend between the subwoofer and satellite speakers.

Using the Remote Control

You can take advantage of many of the R10s's powerful features of the using the infrared remote. You can mute and control the level of the sub, and mute or control the over-all system level using the R10s's remote control. You can even lower the volume of the over-all system using the DIM function for those times when you need to talk to someone in the control room without disturbing the groove. Make sure that the two AAA batteries are installed and then follow the sections below that detail the operation of the remote control.



10 Using the SYSTEM VOLUME controls

The UP and DOWN SYSTEM VOLUME controls are used to adjust the overall level of the monitor system, which includes the R10s and the connected satellite speakers. If you want to make the monitor system louder, aim the remote control at the R10s's IR window and press the SYSTEM VOLUME UP control. To lower the over-all SYSTEM VOLUME, point the remote control at the R10s's IR window and press the SYSTEM VOLUME DOWN control.

11 Using the SUB MUTE button

Once you have a good listening level set for the monitor system you can audition your mix with and without the subwoofer by using the SUB MUTE button located in the upper right hand corner of the remote control. If you want to mute the subwoofer, point the remote control at the R10s's IR window and press SUB MUTE. At this point, take notice to the lighted, red MUTE LED located in the IR window indicating that the sub is off. Now, press the SUB MUTE button again to un-mute the subwoofer and notice that the red MUTE LED is now off.

Thanks to the R10s's intelligent crossover design, the outputs to the satellite speakers are retuned to full range when the subwoofer is muted using the SUB MUTE button. When you un-mute the subwoofer by pressing the SUB MUTE button again, the outputs to the satellite speakers are once again passed at the crossover point set by the rear panel FREQUENCY control knob.

12 Using the SUB VOLUME controls

The UP and DOWN SUB VOLUME controls are used to adjust the level of the subwoofer. If you want to make the subwoofer louder, aim the remote control at the R10s's IR window and press the SUB VOLUME UP control. To lower the sub level, point the remote control at the R10s's IR window and press the SUB VOLUME DOWN control.

13 Using the SYSTEM MUTE button.

The SYSTEM MUTE button is used to turn off the entire monitor system including the sub woofer and satellite speakers. Aim the remote control at the R10s's IR window and press SYSTEM MUTE to defeat the mix. When you want to get back to listening, press the SYSTEM MUTE button again to un-mute the system.

14 Using the DIM control

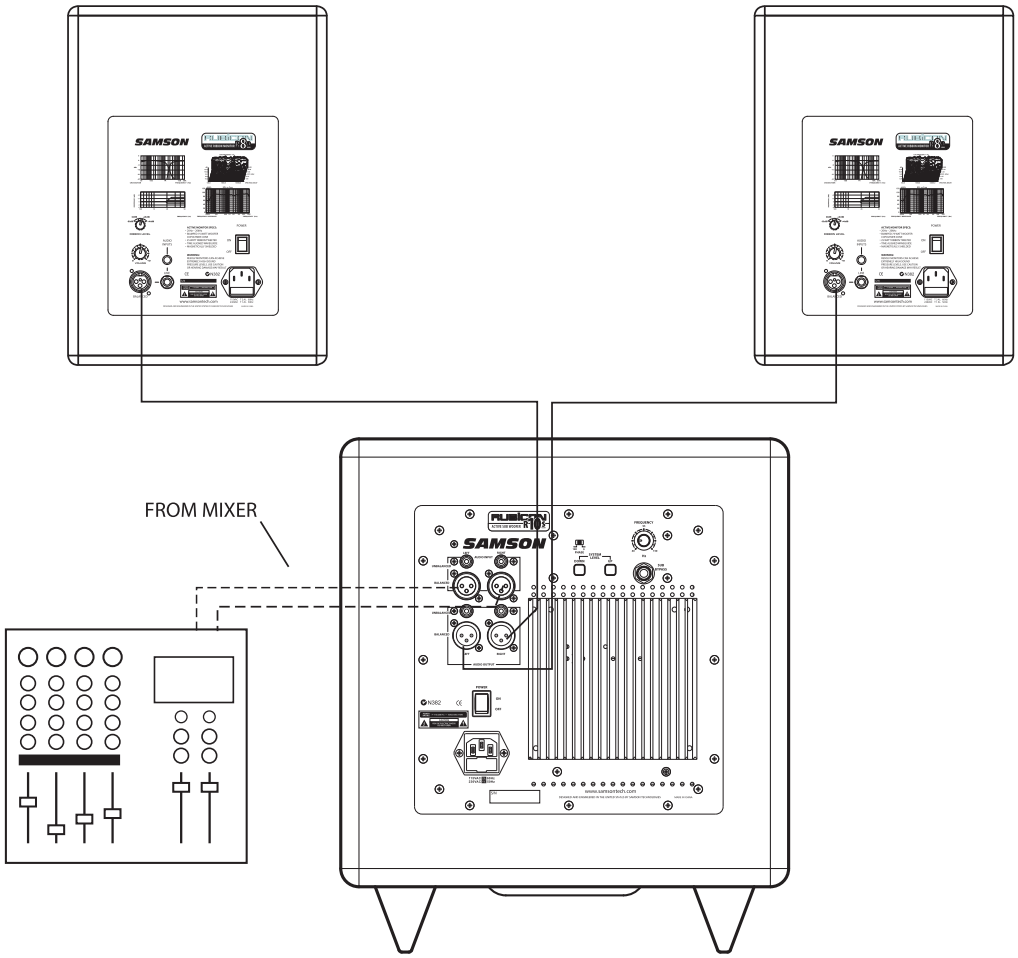
The R10s incorporates a very useful feature; "DIM" which let's you instantaneously lower your mix by 20dB. This convenient facility lets you pick up a phone or carry on an argument…ah, conversation with your mates without having to (necessarily) yell over or mute the mix. Using the DIM helps keep the creative juices going even through the normal distractions, so you don't disturb the groove. It is also extremely useful for checking your mix at low levels, a practice which many good engineers use as a technique to hear where things are sitting in the mix.

To use the DIM control, aim the remote control at the R10s's IR window and press SYSTEM DIM and the level will be lowered by 20dB. When you want to get back to the normal listening level, press the SYSTEM DIM button again.

Connecting the Rubicon R10s

Mono Sub With Active Satellites

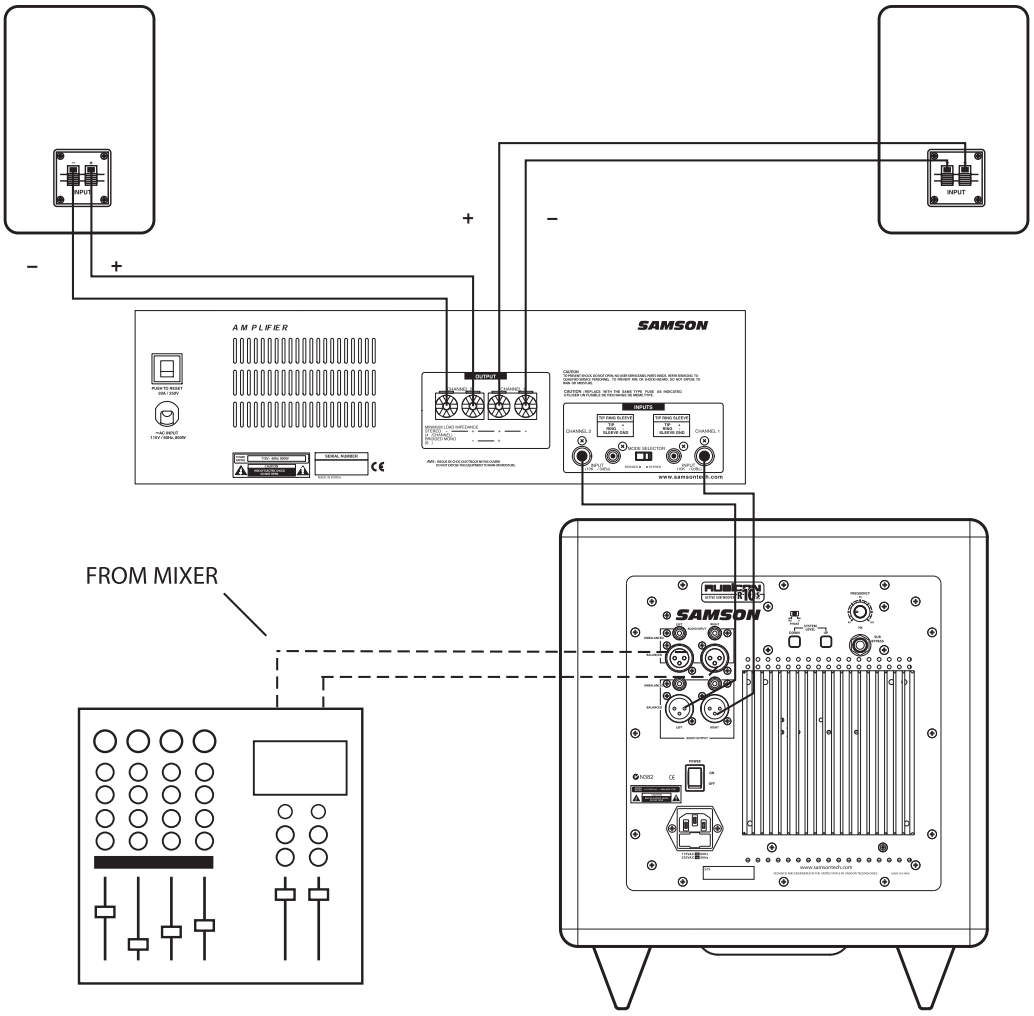
If you have active monitors, installation is easy using the R10s's LINE LEVEL ioutputs. Below is a typical system set-up using the R10s with a mixer and a pair of active satellite loudspeakers. The R10s's inputs and outputs utilize industry standard RCA and XLR connectors. For a detailed wiring diagram, see the section "R10s Connections" on page 16. Follow the steps in the diagram below to set up your system.



- Lower your mixer's master outputs to all the way off.
- Connect the mixer's left output to the R10s's LEFT LINE INPUT and the mixer's right output to the R10s's RIGHT LINE INPUT. Now connect the R10s's LEFT LINE OUTPUT to the input of the left powered satellite, and the R10s's RIGHT LINE OUTPUT to the input of the right powered satellite.
- Now adjust the FREQUENCY control to the desired frequency. Consult your studio monitors owner's manual for a recommended crossover point. You can also use your ears by adjusting the SWEEP control to the frequency that sounds good to you. A good place to start is about 70 Hz. (10 O'clock)
- Run an audio signal (like some music from a CD) through your mixer and raise the level to a comfortable listening level. Now slowly raise the R10s SUB VOLUME control and listen to the low frequency output. Adjust the R10s to the level of low frequency output that you like. Now, when you raise and lower your mixer's output, the R10s and satellites will track at the same relative volume.

Mono Sub With Passive Satellites Using Line Inputs

Below is a typical system set-up using the R10s with a mixer, stereo power amp and a pair of passive satellite loudspeakers. The R10s's inputs and outputs utilize industry standard RCA and XLR connectors. For a detailed wiring diagram, see the section "R10s Connections" on page 16. Follow the steps in the diagram below to set up your system.



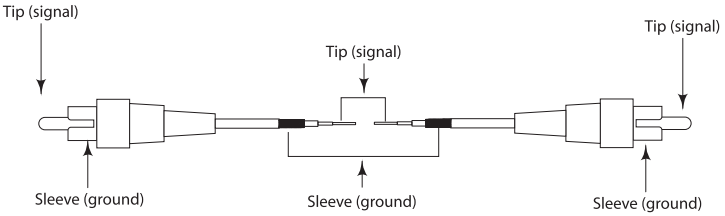
- Lower your mixer's master outputs to all the way off.
- Connect the mixer's left output to the R10s's LEFT AUDIO INPUT and the mixer's right output to the R10s's RIGHT AUDIO INPUT. Now connect the R10s's LEFT AUDIO OUTPUT to the left side input of the power amp, and the R10s's RIGHT AUDIO OUTPUT to the right side input of the power amp. Connect a speaker wire from the left output of your power amp to your left satellite, and then, connect a speaker wire from the right output of your power amp to your right satellite.
- Now adjust the FREQUENCY control to the desired frequency. Consult your studio monitors owner's manual for a recommended crossover point. You can also use your ears by adjusting the SWEEP control to the frequency that sounds good to you. A good place to start is about 70 Hz. (10 O'clock)
- Now set the level of your power amp up to the normal operating volume. Run an audio signal (like some music from a CD) through your mixer and raise the level to a comfortable listening level. Now slowly raise the R10s SUB volume control and listen to the low frequency output. Adjust the R10s to the level of low frequency output that you like. Now, when you raise and lower your mixer's output, the R10s and satellites will track at the same relative volume.

Rubicon R10s Connections

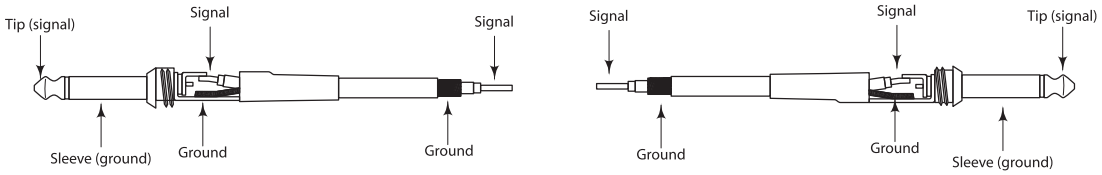
Rubicon R10s Wiring Guide

There are several ways to interface the Rubicon R10s, depending on your exact monitoring set-up. Follow the cable diagrams below for connecting your monitor system.

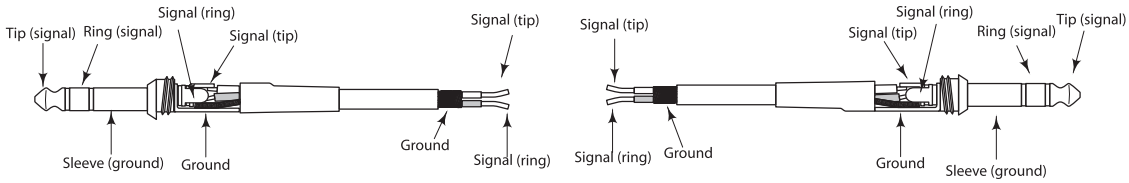
RCA to RCA Cable



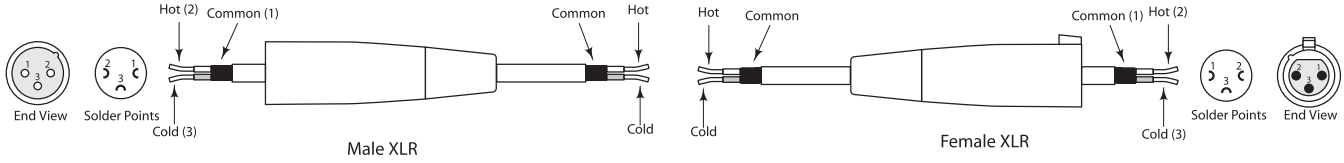
Un-Balanced 1/4" to 1/4" Cable



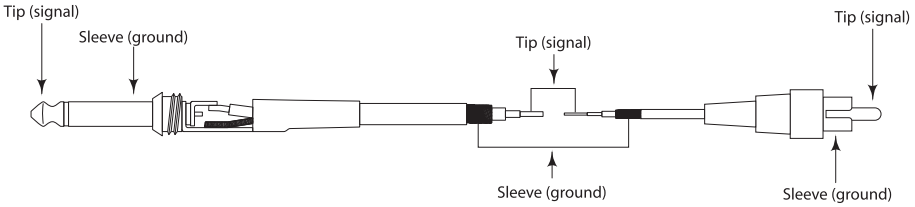
Balanced 1/4" to 1/4" Cable



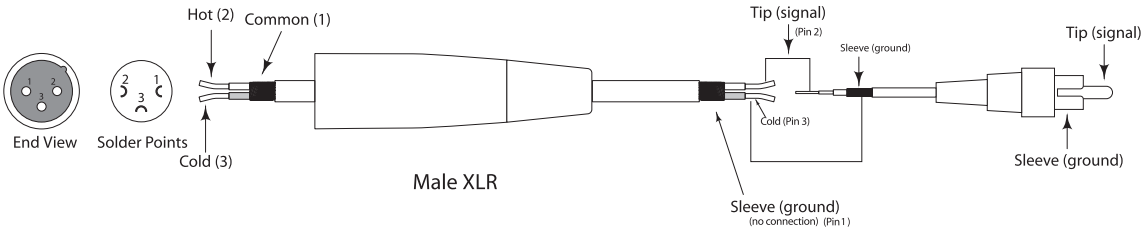
Balanced XLR to XLR Cable



Unbalanced 1/4" to RCA Cable

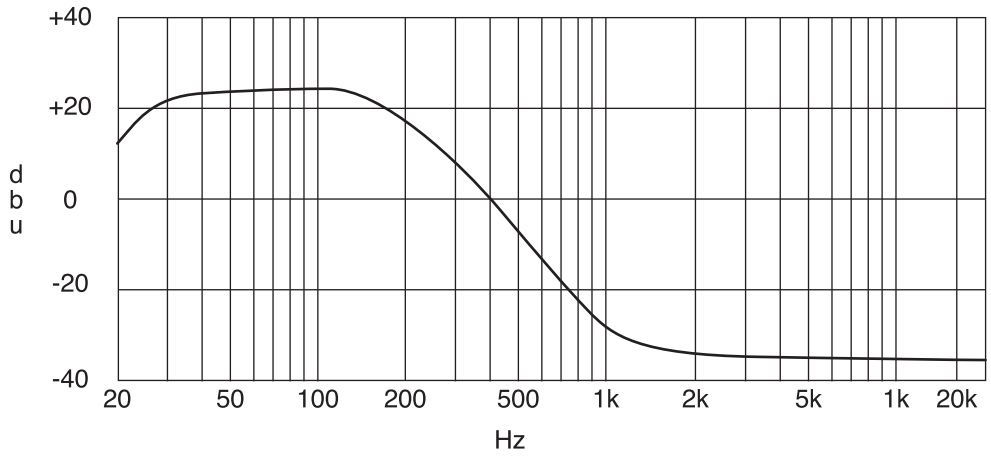


Un-Balanced XLR to RCA Cable



Specifications

Transducer:	10", Long Excursion Transducer
Amplifier:	
Power Rating:	150 Watts RMS
Frequency response:	20Hz-200Hz+/-3 dB
Sensitivity:	94dB SPL @ 1 W/1m
Line Input	
Connector:	Balanced XLR FEMALE Un-balanced RCA FEMALE
Line Output	
Connector:	Balanced XLR MALE Un-balanced RCA FEMALE
Crossover Frequency:	Variable 40Hz – 150Hz
Enclosure:	
Construction:	MDF (Medium Density Fiberboard)
Finish:	Black Vinyl
Feet:	Large Hard Plastic
Dimensions:	16″ (h) x 12.75" (w) x 13.5" (d) 406.4 mm (h) x 323.85 (w) x 342.9 (d)
Weight:	30.5 lbs., 13.8 kg.



Rubicon R10s Frequency Response