

Two-way Active Ribbon Reference Monitor

# Owners Manual

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## Introduction

Thank you for purchasing the Rubicon R5a and R6a Studio Reference Monitors by Samson Audio. The Samson Rubicon R5a and R6a are self-powered near-field monitors featuring boisterous power, superior electronics, robust woofers and advanced designed velocity ribbon tweeters. The proper implementation of these elements in each model results in a monitor with a linear response from bottom to top with tight lows and articulate highs. Both models feature Samson's proprietary 1 x 2-inch velocity ribbon tweeter, which offer extremely low distortion and sweet highs that are clear and precise. For the thunderous lows, the R6a features a 6.5-inch copolymer woofer, while the low frequency response is more than adequately handled by the R5a 5-inch copolymer woofer. Both Rubicon monitors are bi-amped. 75 watts of low frequency power and 25 watts for the highs on the Rubicon 6a, and 50 watts of low frequency power and 25 watts for the highs on the Rubicon 5a. The Rubicon monitors are ideal near field monitor system for studios, video post production suites, fixed installations or where great sound is desired.

In these pages, you'll find a detailed description of the features of the Rubicon R5a and R6a monitors, 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 Rubicon R5a or R6a will operate trouble free for many years. We recommend you record your serial number in the space provided below for future reference.

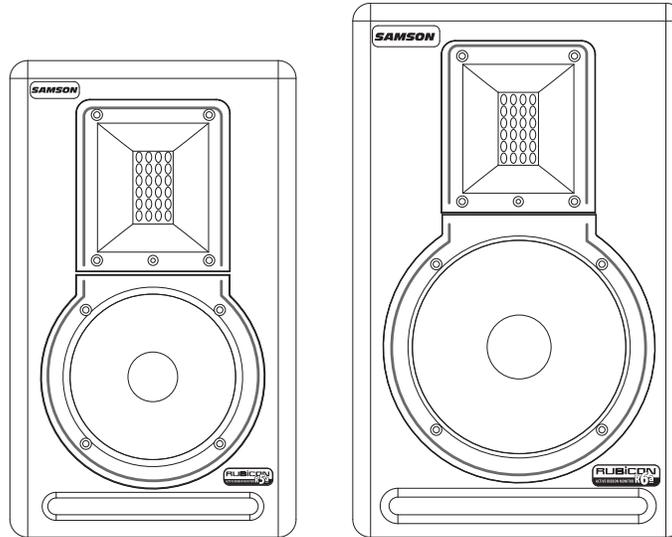
Serial number: \_\_\_\_\_

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.

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## Rubicon R5a and R6a Features

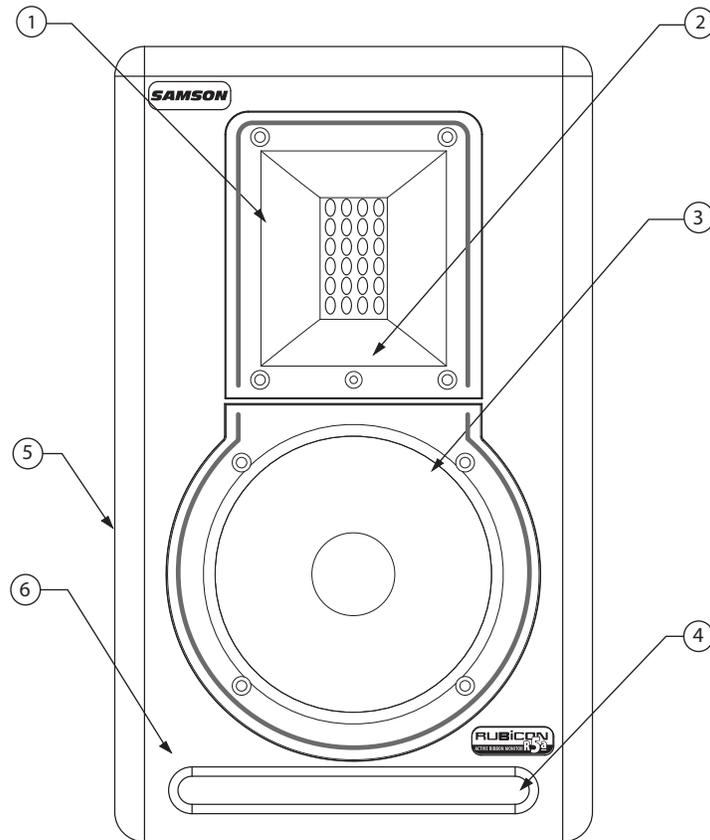


The Samson Rubicon R5a and R6a reference monitors provide a smooth response that is accurate, and at the same time, pleasant to listen to. Here are some of its main features:

- Two-way, active ribbon studio monitor with ported tuned enclosure providing extremely accurate monitoring for recording studio, post-production and multi-media applications.
- The Rubicon 5 a employs a 5.0" Copolymer Butyl Surround woofer, and the Rubicon R6a, a 6.5" Copolymer Butyl Surround woofer providing both monitors with a tight and controlled low frequency response.
- 1 x 2" Planer Ribbon tweeter provides sweet and accurate high frequency response for the R5a and R6a with low distortion.
- Both Rubicon models feature active electronics including a Bi-Amp power amplifier with 75 watts on the LF driver and 25 watts on the HF driver for the R6a, and 50 watts for the low end and 25 watts on the high end for R5a.
- Four-position high frequency Ribbon Level control allows the listener to contour the response curve to custom tailor the response that works best in the mix environment.
- Active crossover utilizing a multi-pole design for linear response from bottom to top.
- Interfacing the monitors to most any -10 or + 4db signal source quick and easy thanks to the R5a's balanced input on a 1/4-inch jack and unbalanced input on an RCA jack, and with the R6a's XLR and 1/4-inch balanced inputs, as well as unbalanced RCA input.
- A/V shielded for multimedia applications providing clean operation near computer monitors.
- Solid MDF (Medium Density Fiberboard) construction, extremely rigid delivering maximum SPL.
- Black satin finish is attractive and durable thanks to the heavy textured epoxy paint.
- Three-year extended warranty.

# Rubicon R5a and R6a Layout

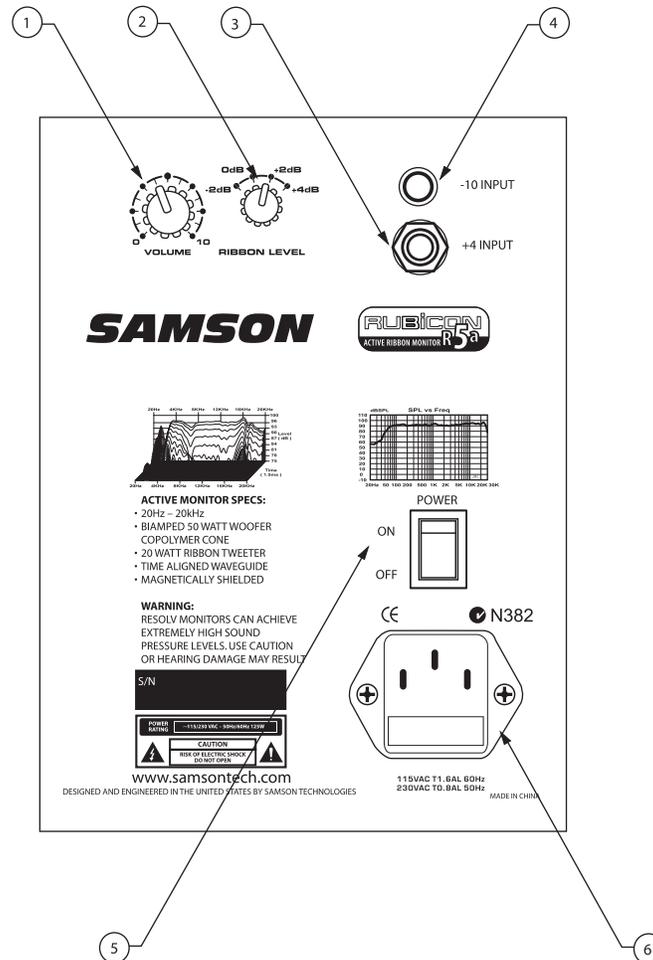
## Front View Layout



- |  |   |
|--|---|
| <p><b>1 1" X 2" RIBBON TWEETER</b> - Planer ribbon transducer provides low distortion with a linear high frequency response resulting in a clear, precise and sweet top end.</p> | <p><b>4 TUNED PORT</b> - Quiet port design offering linear extended low frequency response.</p> |
| <p><b>2 POWER LED</b> - Blue LED illuminates indicating the unit is powered on, ready for operation.</p>   | <p><b>5 ENCLOSURE</b> - Rigid MDF construction.</p>   |
| <p><b>3 LOW FREQUENCY DRIVER</b> - Heavy duty 6.5" for the R6a and 5.0" for the R5a extended range low frequency transducer.</p>   | <p><b>6 FINISH</b> - Sleek black textured finish.</p>   |

# Rubicon R5a and R6a Layout

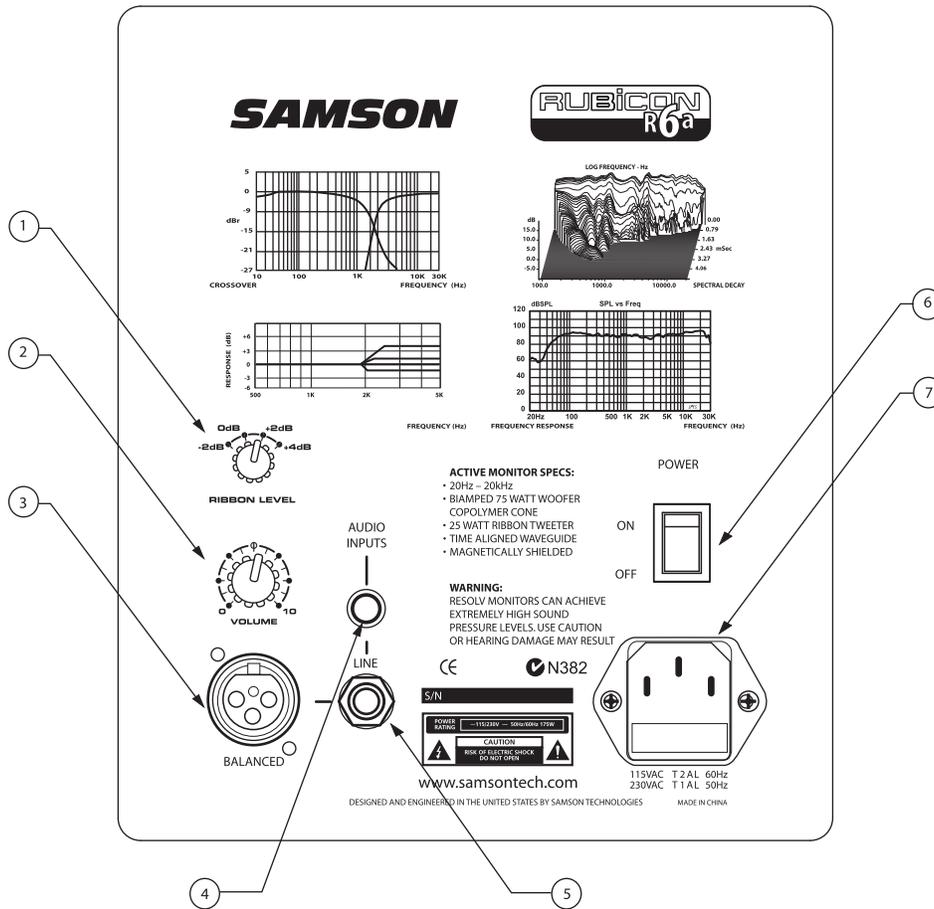
## Rear Panel Layout - R5a



- 1 **VOLUME** - Controls the amount of output level.
- 2 **RIBBON LEVEL CONTROL** – Four-position switch used to adjust the high frequency response providing customized voicing.
- 3 **1/4-INCH PHONE** – Balance TRS (Tip, Ring, Sleeve) 1/4-inch phone plug used to connect balanced or unbalanced +4dBu line level signals.
- 4 **RCA** – Used to connect signals from unbalanced, –10dBV devices.
- 5 **POWER SWITCH** – Main power switch.
- 6 **AC INLET** - Connect the supplied IEC power cable here.

# Rubicon R5a and R6a Layout

## Rear Panel Layout - R6a



- 1 RIBBON LEVEL** – Four-position switch used to adjust the high frequency response (in 2dB increments).
- 2 VOLUME** - Controls the amount of output level.
- 3 XLR INPUT** - Balanced, +4dBu line level input is connected here via standard XLR (microphone) cable.
- 4 RCA** – Used to connect signals from unbalanced, –10dBV devices.
- 5 1/4-INCH PHONE** – Balance TRS (Tip, Ring, Sleeve) 1/4-inch phone plug used to connect balanced or unbalanced +4dBu line level signals.
- 6 POWER SWITCH** – Main power switch.
- 7 AC INLET** - Connect the supplied IEC power cable here.

# Setting up the Rubicon R5a and R6a

## Background on the Rubicon R5a and R6a Studio Reference Monitor

The Rubicon R5a and R6a are self-powered near-field reference monitors, featuring robust power, advanced electronics and custom designed drive units. For pristine high's, the Rubicon 5a and 6a boast a 1-inch by 2-inch velocity ribbon tweeter. The Rubicon ribbon tweeters are constructed using a Kapton diaphragm with vaporized aluminum applied to the surface. The diaphragm is then set between an array of neodymium magnets creating an opposing magnetic field. Since the ribbon is both the coil and the diaphragm, the diaphragm can accelerate and decelerate quickly resulting in un-matched transient response. Unlike conventional dome tweeters, the ribbon tweeter exhibits no coloration due to resonance, as well as, extremely low intermodulation and FM distortion. The result is a wide linear response producing high frequencies that are sweet, while clear and accurate. For the low frequency response, the R6a employees a 6.5-inch, copolymer low frequency drive unit with butyl rubber surround, and for the R5a, a 5-inch, copolymer, low frequency butyl rubber surround drive unit. Both woofers are well matched to the tuned enclosure and provide punchy and focused bass frequency response. The monitor's crossover has been carefully designed with high quality components insuring a linear frequency and phase response. The Rubicon R5a and R6a enclosures are constructed from MDF (Medium Density Fiberboard) and are finished in scuff resistant, textured paint. The monitor's enclosure also includes a tuned vent port that provides extended low-end response, and with a low turbulence design, the low frequency driver can move freely with minimal effect on the overall impedance. On the rear of the enclosure, you'll find Rubicon R5a or R6a's control panel, which features a variety of input connections including both XLR balanced input, and a 1/4-inch TRS balanced input plus an RCA unbalanced input on the R5A . These inputs are connected to Rubicon R5a or R6a's internal bi-amp power module providing 75 watts of power for the low frequency woofer, an active crossover, and 25 watts of power for the high frequency tweeter for the R6a, and 50 watts for the low end and 25 watts on the high end for the R5a. You will also find the pre-amp controls, including VOLUME knob, used to adjust the overall level of the internal power amplifier, as well as the innovative Ribbon Level control. This four-position switch allows the mix engineer to contour the high frequency response of the monitor allowing you to adjust for room acoustics or listening preference. The Rubicon R5a and R6a have been designed to provide flat, accurate monitoring, and at the same time, to provide an adjustable response curve so that the sound of other popular near-field monitors can be easily emulated.

## Positioning the Rubicon R5a and R6a

Near field monitoring has become the choice of many engineers in large and small studios because it minimizes the effect of room acoustics. This is especially important in today's project studios since the budget for room acoustics is often close to nothing. By positioning the reference monitors in the near field (close to the listeners), you can greatly reduce the effects of room acoustics. The most important considerations when evaluating the effects of room acoustics are reflective surfaces that are around the monitoring area. These can include flat tabletops, glass mirrors or framed pictures, large open walls and even the surface of your mixing console. Mostly all reflecting sound will eventually reach the listening position, but since it is slightly delayed from the direct source, the result is random cancellation of some frequencies, or comb filtering. If possible, remove any and all reflective surfaces. You may also want to hang some acoustic foam on walls that are close to the monitors. When positioning the monitors you'll want to set up what is commonly referred to as the "mix triangle". In this ideal configuration, the space between the left and right monitor is equal to the dis-

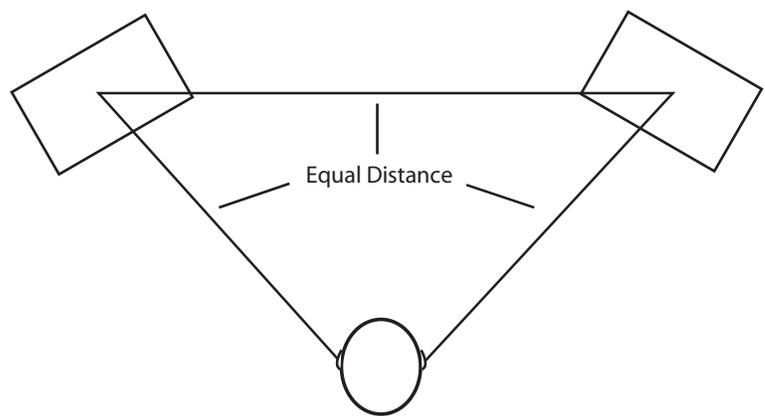


Figure 1.

Prime Listening Spot

# Setting up the Rubicon R5a and R6a

## Positioning the Rubicon R5a and R6a - continued

### Speaker Orientation

The Rubicon R5a and R6a's can be used in either the vertical or horizontal position. When using the monitors in the horizontal position, be certain to place the left and right side tweeters on the outer most sides. (Figure 2) This will improve the stereo imaging and bass response by increasing the coupling of the low-end drivers.

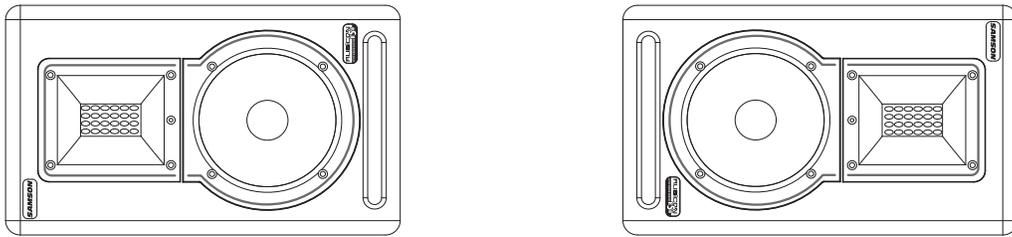


Figure 2.

### A Moment of Reflection

When choosing the height of your monitor system, be careful to avoid reflections off the surface of the mixing console. (Figure 3.) These reflections arrive at the listening position slightly delayed from the original sound resulting in strange cancellations and overall unpredictable response. Visualize straight lines representing the beams of sound radiating from the monitors and choose a height that reduces the occurrence of reflections that will end up in the prime listening spot. (Figure 4.) In most cases, the ideal position is slightly behind and above the mixing console's meter bridge.

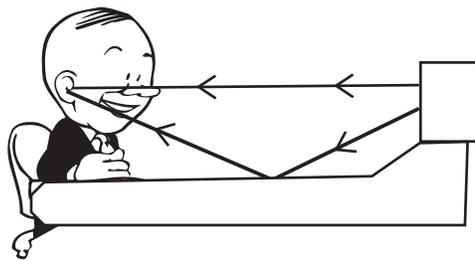


Figure 3.

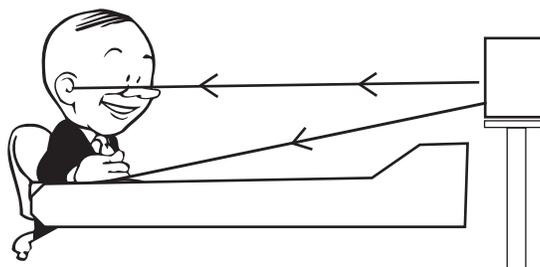


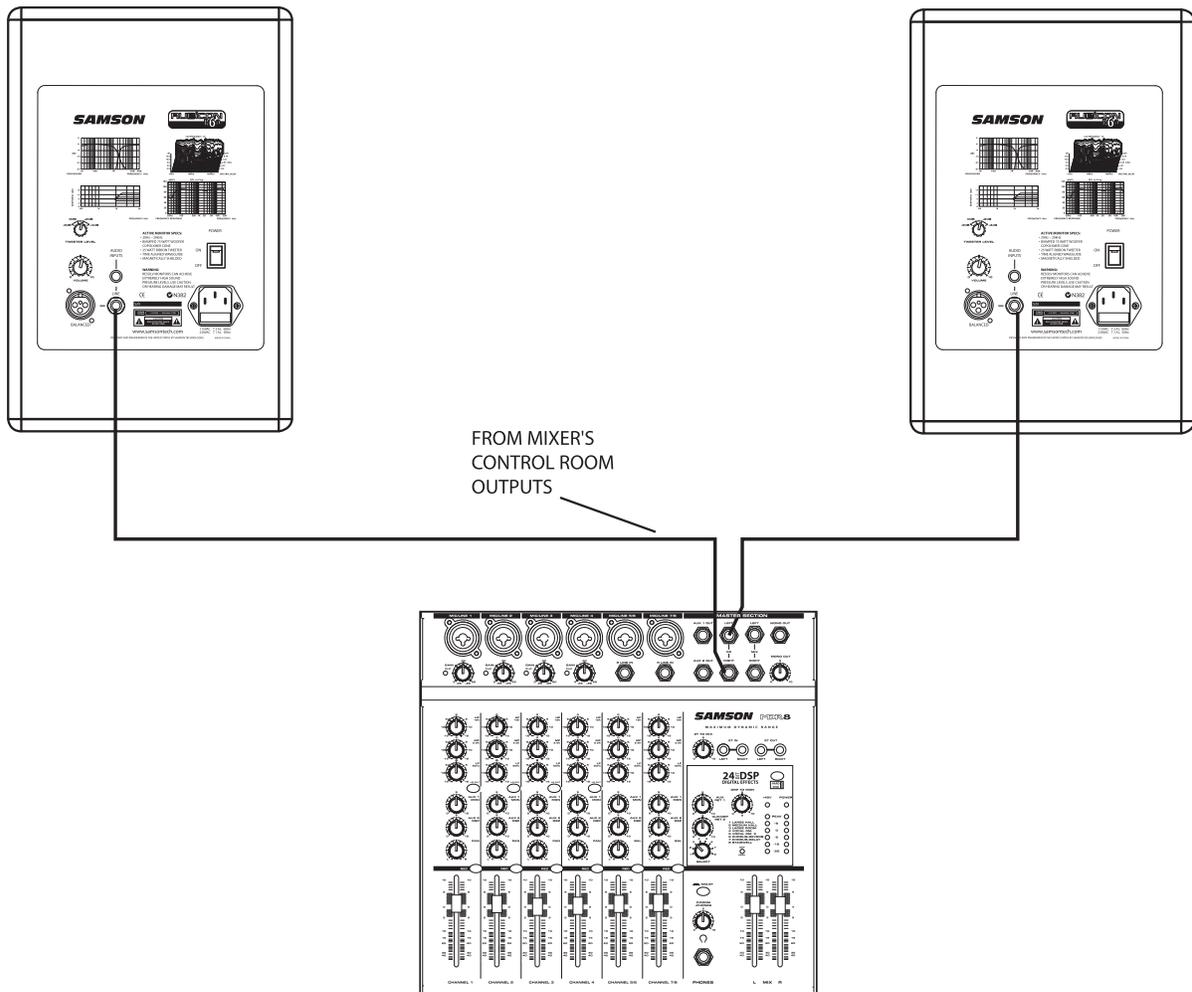
Figure 4.

# Connecting the Rubicon R5a and R6a

## Rubicon R5a and R6a Quick Connections

**Note:** Before plugging in and turning on, remember the “last on first off” rule of power amplifiers (and powered monitors). When powering up your system, be sure that all the wires are connected, turn your mixer and any other outboard gear on, and then last turn your Rubicon R5a or R6a’s on. When powering down, turn your Rubicon R5a or R6a’s off first and then your mixer and outboard gear.

The Rubicon R5a and R6a connections can be made via one of the three rear panel Audio Inputs. You can use RCA inputs for unbalanced -10dBV level signals, or either the 1/4-inch or XLR inputs for balanced +4dBu level signals. Follow the simple steps and diagram below for a quick connection using a standard recording console’s control room outputs.



- Lower your mixer’s master outputs to all the way off.
- Connect the mixer’s left Control Room output to the left-side Rubicon R5a and R6a LINE INPUT and the mixer’s right Control Room output to the right-side Rubicon R5a and R6a LINE INPUT.
- Set the Rubicon R5a and R6a’s input Volume control to the 2 o’clock position.
- Run an audio signal (like some music from a CD) through your mixer and raise the Control Room level to a comfortable listening level.

# Operating the Rubicon R5a and R6a

## Rubicon R5a and R6a Control Panel

The Rubicon R5a and R6a's rear control panels are where you will make your connections for both AC power and audio signals. The rear panel also contains the controls to make adjustments to the overall volume and frequency response curve. The following section details the rear panel controls and connections.

## Powering the Rubicon R5a and R6a

Since the Rubicon R5a and R6a are active studio monitors with an on-board power amplifier and electronic crossover, it is necessary to connect the unit to an AC power supply. Make sure that the main Power switch is set to the off position and connect the supplied IEC power cable into the AC inlet.

## Things that go Hum!

When running power cables, be careful not to run the AC power cords or AC extension cords in parallel to your input cables. This will help reduce any AC hum that can be picked up. If you have to cross an AC line with an audio line, try to cross them at a 90 degree angle for the least amount of induced hum. Using the Rubicon R5a and R6a's balanced input connectors will greatly protect against the induced hum thanks to the common mode rejection (the induced hum is phase canceled) that its balanced input circuit provides.

**1 POWER SWITCH** – The POWER switch is used to turn on the Rubicon R5a and R6a's active electronics. When set to the on position, the internal LED will illuminate green, indicating the Rubicon R5a or R6a is powered up and ready for operation. The Rubicon R5a and R6a also have a "rubi-red" LED which illuminates showing when the unit is powered up.

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

**SAMSON RUBICON R6a**

**ACTIVE MONITOR SPECS:**

- 20Hz – 20kHz
- BIAMPED 75 WATT WOOFER COPOLYMER CONE
- 25 WATT RIBBON TWEETER
- TIME ALIGNED WAVEGUIDE
- MAGNETICALLY SHIELDED

**WARNING:**  
RESOLV MONITORS CAN ACHIEVE EXTREMELY HIGH SOUND PRESSURE LEVELS. USE CAUTION OR HEARING DAMAGE MAY RESULT

**POWER**

ON OFF

**AUDIO INPUTS**

BALANCED

RIBBON LEVEL

VOLUME

**CE** **N382**

**www.samsontech.com**

DESIGNED AND ENGINEERED IN THE UNITED STATES BY SAMSON TECHNOLOGIES MADE IN CHINA

POWER RATING: 115/230V — 100/200V 170W

CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN

115VAC T 2 AL 60Hz 230VAC T 1 AL 50Hz

The Rubicon R5a and R6a's rear panel provides two important controls for adjusting the overall sound of the monitor, RIBBON LEVEL and Volume. Eventually, you will adjust these controls to your preferable position and "set it and forget it". That's assuming that the monitors remain in the same spot, in the same studio. If you take your monitors to other studios you may find the controls extremely useful in adjusting the sound for the new room.

# Operating the Rubicon R5a and R6a

## Rubicon R5a and R6a Control Panel - continued

### 3 RIBBON LEVEL CONTROL

The four-position Ribbon Level control switch is used to adjust the monitors' high-frequency response, providing four equalization curves to select from. By using the Ribbon Level control, the Rubicon's high frequency response is adjusted with the application of a high-end tilt (equalization circuit) centered at 12kHz, with selectable levels of -2dB, 0dB (flat), +2dB and +4dB. You'll find that the change is very subtle. Many mix engineers prefer the sound of near field monitors with a little lift in the high frequency response, some like more focus on the midrange, and therefore, desire a flatter or rolled off high frequency response. The best way to set the controls is what sounds good to you. Therefore, you should experiment with the various settings to find the combination of the Ribbon Level and Volume controls you like. To do this play several CD's of music that you are familiar with. Remember, if you think you're getting lost, the Rubicon R5a and R6a is flat when the Ribbon Level control is set to the "0" position.

### 4 VOLUME CONTROL

The volume control is used to adjust the overall output level of the Rubicon R5a and R6a. When operating the unit for the first time, start with the volume control set all the way off. Slowly raise the Volume control to reach a comfortable listening level.

### The Ins and The Outs

The Rubicon R5a and R6a features a full complement of input connectors providing easy installation with a variety of audio devices like recording consoles, hard disk recorders, CD players and computer sound cards, to name a few. The following section details the Rubicon R5a and R6a's input connectors. In addition, there is a detailed cable-wiring diagram on page 13.

### 5 BALANCED XLR AUDIO INPUT - The Rubicon R6a features a female XLR connector that will accept balanced or unbalanced +4dBu line level signal. If you are using a mixer that has balanced outputs on XLR connectors, you can make the connections via standard XLR (microphone) cable.

**6 1/4-INCH PHONE AUDIO INPUT** – A balanced TRS (Tip, Ring, Sleeve) 1/4-inch phone plug is used to connect balanced or unbalanced line level signals. The 1/4-inch input is a switching jack, so when a 1/4-inch connector is inserted into the jack, the RCA and/or XLR inputs are switched off and the 1/4-inch input is switched on. This provides a convenient patch-point for quick insertion of a secondary input signal source for testing or expanded operation.

**RCA AUDIO INPUT** – The RCA input accepts unbalanced signals used to connect signals from unbalanced -10dBV devices.

**SAMSON RUBICON R6a**

**ACTIVE MONITOR SPECS:**

- 20Hz – 20kHz
- BIAMPED 75 WATT WOOFER
- COPOLYMER CONE
- 25 WATT RIBBON TWEETER
- TIME ALIGNED WAVEGUIDE
- MAGNETICALLY SHIELDED

**WARNING:**  
RESOLVE MONITORS CAN ACHIEVE EXTREMELY HIGH SOUND PRESSURE LEVELS. USE CAUTION OR HEARING DAMAGE MAY RESULT

**POWER**  
ON OFF

**CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN

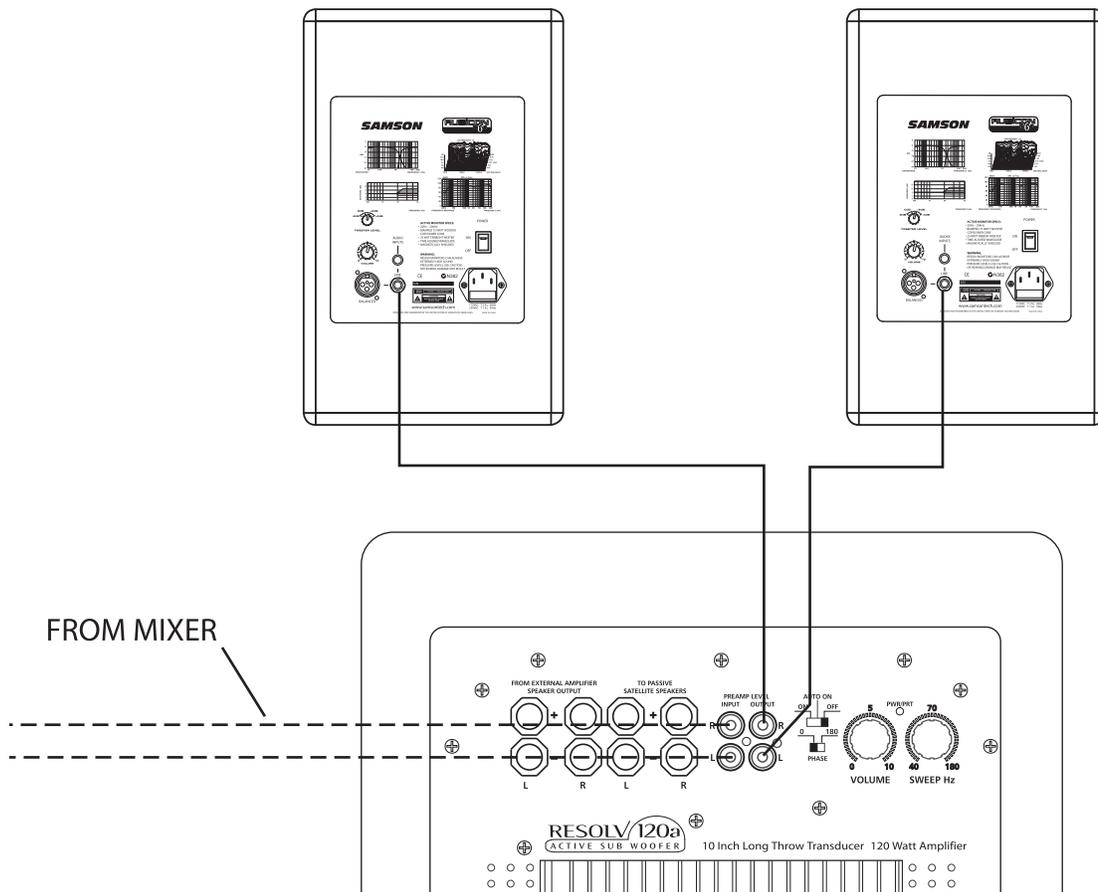
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MADE IN CHINA

# Connecting to the Resolv120a Subwoofer

## Rubicon R5a and R6a with Mono Sub

Adding a subwoofer and extended low frequency response to your Rubicon R5a or R6a system is easy using the Rubicon R5a or R6a's LINE LEVEL inputs. Below is a typical system set-up using the Samson RESOLV 120a or Sub88 with a mixer and a pair of Rubicon R6a satellite speakers. The Rubicon R5a and R6a's inputs utilize industry standard RCA connectors. For a detailed wiring diagram, see the section "Rubicon R5a and R6a Connections" on page 57. Follow the steps in the diagram below to set up your system.



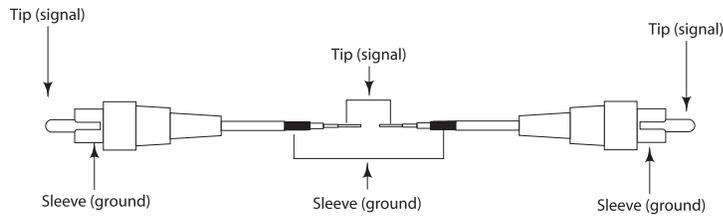
- Lower your mixer's master outputs to all the way off.
- Connect the mixer's left output to the RESOLV 120's LEFT LINE INPUT and the mixer's right output to the RESOLV 120's RIGHT LINE INPUT. Now connect the RESOLV 120's LEFT LINE OUTPUT to the input of the left Rubicon R5a or R6a, and the RESOLV 120's RIGHT LINE OUTPUT to the input of the right Rubicon R5a or R6a.
- Run an audio signal (like some music from a CD) through your mixer and raise the level to a comfortable listening level.
- Now adjust the SWEEP control to the desired frequency. 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.

# Wiring Guide / Plan de câblage / Verdrahtung / Guía de cableado / Cablaggio

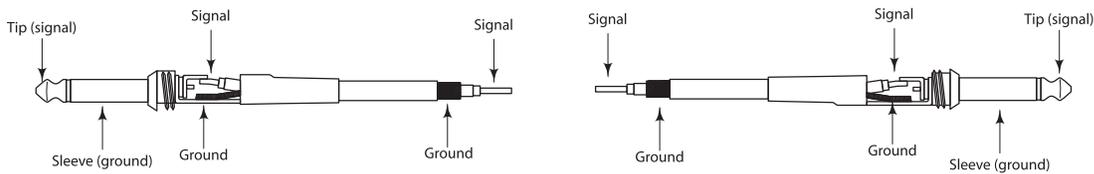
## Rubicon R5a and R6a Wiring Guide

There are several ways to interface the Rubicon R5a and R6a, depending on your exact monitoring set-up. Follow the cable diagrams below for connecting your monitor system.

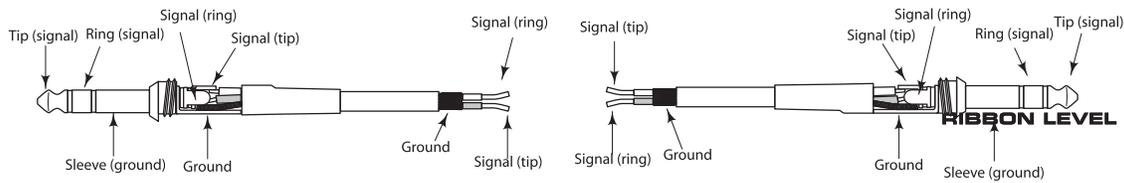
### RCA to RCA Cable



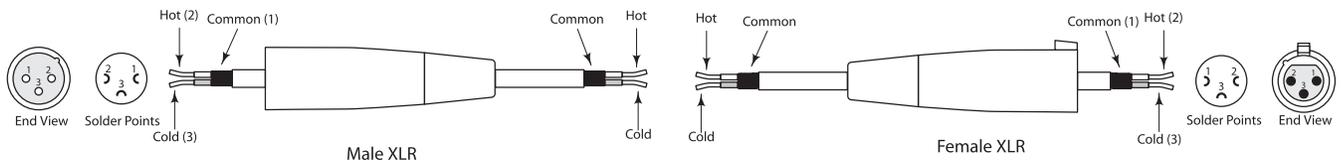
### Un-Balanced 1/4" to 1/4" Cable



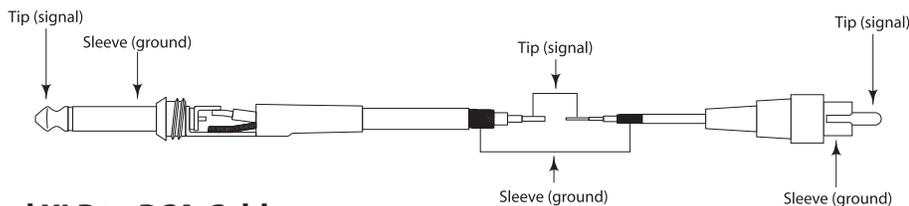
### Balanced 1/4" to 1/4" Cable



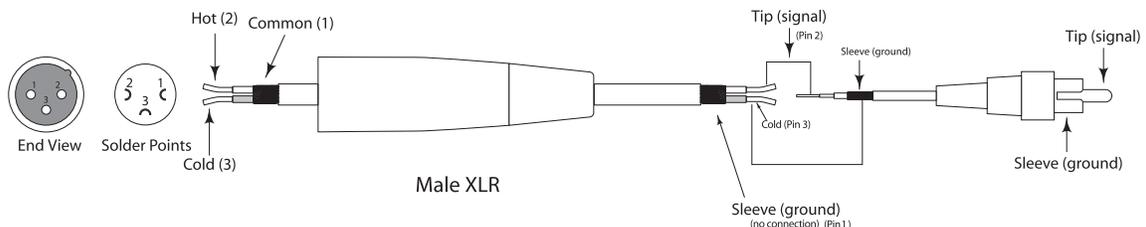
### Balanced XLR to XLR Cable



### Unbalanced 1/4" to RCA Cable



### Un-Balanced XLR to RCA Cable

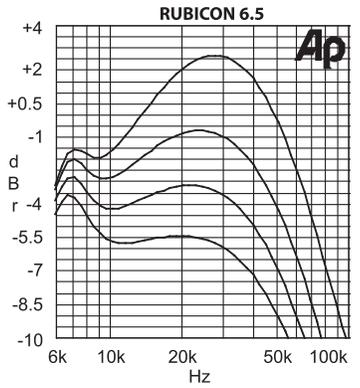


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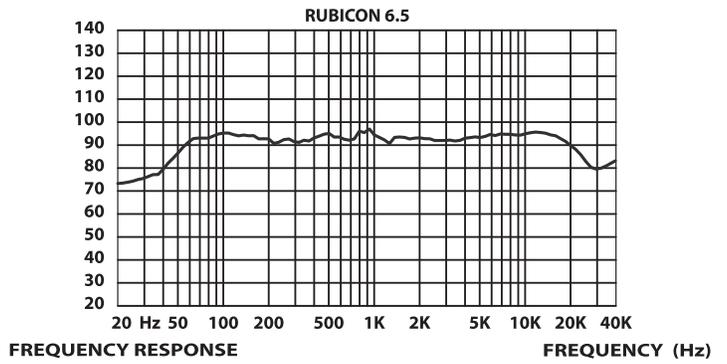
## Specifications/Caractéristiques techniques/Technische Daten/Especificaciones técnicas/Specifiche

### Specifications

Transducers:	6.5" for the R6a and 5.0" for the R5a, copolymer woofer with butyl surround, 1x 2-inch velocity ribbon tweeter
Frequency response:	
R6a	57Hz - 27KHz +/-3 dB
R5a	58Hz - 27KHz +/-3 dB
Amplifier:	
Power Rating:	Low-frequency - 75 Watts RMS for the R6a Low-frequency - 50 Watts RMS for the R5a High-frequency - 25 Watts RMS
Crossover Frequency:	3KHz, 4 pole (24dB/Oct) filter
Inputs:	
Unbalanced	-10dBV Line Level
Connector:	RCA
Balanced	+4dBu Line Level
Connector:	1/4-inch Phone TRS (Tip Ring Sleeve) XLR - R6a - yes XLR - R5a - no
Enclosure:	
Construction:	MDF (Medium Density Fiberboard)
Finish:	Black Textured Epoxy Paint
Dimensions:	
R6a	9 1/4" (235mm) W x 15" (381mm) H x 10 3/4" (273mm) D
R5a	8" (203mm) W x 13 1/4" (337mm) H x 9 1/4" (235mm) D
Weight:	
R6a	18 lbs.(8.2 kg)
R5a	16 lbs.(7.3kg)

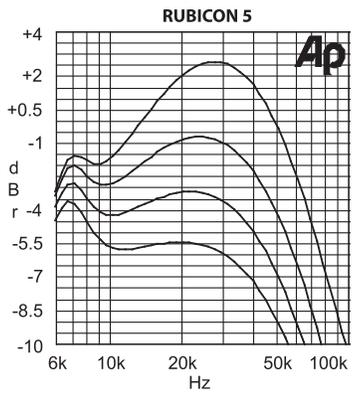


HIGH FREQUENCY LEVEL ADJUSTMENT

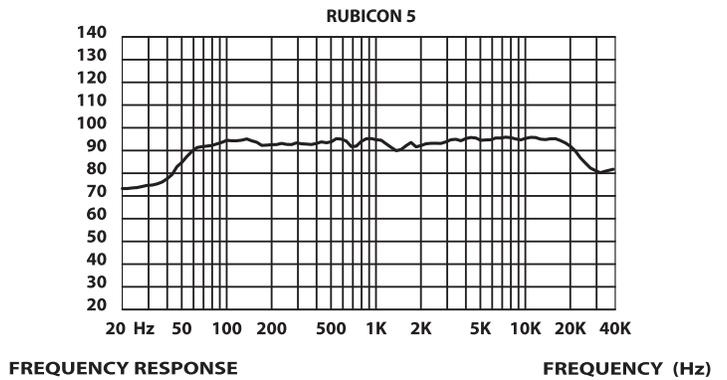


FREQUENCY RESPONSE

FREQUENCY (Hz)



HIGH FREQUENCY LEVEL ADJUSTMENT



FREQUENCY RESPONSE

FREQUENCY (Hz)