

EXHIBIT F

Paragraph 2.983(d)(8)

Instruction Manual



**Retlif Testing Laboratories**

Test Report Number R-7515-1  
FCC ID: CCRSH4

EXHIBIT F

Paragraph 2.983(d)(8)

Instruction Manual



**Retlif Testing Laboratories**

Test Report Number R-7515-1  
FCC ID: CCRVH3

**STAGE 44**

**MICROPROCESSOR**

**TRUE DIVERSITY**

**WIRELESS SYSTEM**

AND

**STAGE 4**

**NON DIVERSITY**

**WIRELESS SYSTEM**

OWNERS MANUAL

***SAMSON***

# Introduction

Congratulations on purchasing the Samson Stage 44 or Stage 4 VHF Wireless System! Although this product is designed for easy operation, we suggest you first take some time to go through these pages so you can fully understand how we've implemented a number of unique features.

Every wireless system consists of at least two components—a transmitter and a receiver, both of which must be tuned to the same channel (that is, the same radio frequency) in order to operate correctly.\* The Samson Stage 44 / Stage 4 system you have purchased operates in the 173.6 - 216.2 MHz frequency range and contains either an SR44 or SR4 receiver as well as one of the following transmitters: an ST4L belt-pack transmitter (for lavalier microphone or headset applications); an ST4G belt-pack transmitter (for instrument applications); or an SH4 hand-held microphone transmitter. For convenience and security, the Stage 44 and Stage 4 system is packaged in a custom impact-resistant ABS plastic carrying case that provides room for all components (see Appendix B on page x for more information).

The ST4L belt-pack transmitter provides a Switchcraft P3 mini-XLR jack for connection to a variety of popular headsets and lavalier microphones, including:

- Audio-Technica ATM-75 headset
- Audio-Technica MT-350 lavalier
- Audio-Technica Pro-8HE headset\*\*
- Audio-Technica 831H-7 lavalier
- Countryman IsoMax headset
- Crown CM-311(E) headset
- Foster ECM-40 lavalier
- Samson QV headset
- Samson QE headset\*\*
- Sennheiser MKE-2 lavalier
- Sony ECM-44 lavalier
- Sony ECM-55 lavalier
- Sony ECM-77 lavalier

The SH4 hand-held microphone transmitter is available in a selection of popular mic capsules, including:

- Electro Voice ND 757A N/DYM dynamic
- Electro Voice ND 857 N/DYM dynamic
- Electro Voice BK-1 condenser
- Samson Q MIC dynamic
- Sennheiser MKE-4032 condenser
- Shure SM58 dynamic
- Shure SM85 condenser
- Shure SM87 condenser

\* Your receiver and transmitter have been factory preset to utilize the same channel.

\*\* Optimized for aerobics workouts, this waterproof headset is recommended for usage in high-humidity environments such as physical fitness centers.

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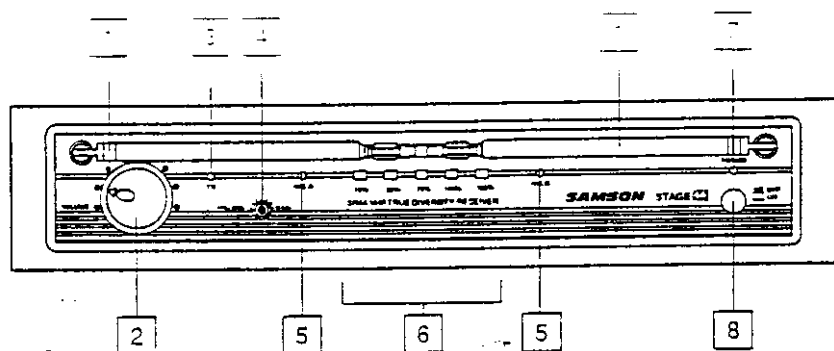
# Introduction

The SR4 receiver provided in the Stage 4 wireless system utilizes non-diversity technology, incorporating a single antenna for ease of use and minimal cost. The SR4 receiver provided in the Stage 44 system utilizes a patented technological breakthrough called "Microprocessor True Diversity," whereby a single chassis houses two antennas (called "Antenna A" and "Antenna B") and a receiver circuit. A built-in computer chip continuously scans RF signals from the two antennas and determines which one has the clearest and strongest reception, automatically (and silently) switching that signal to the receiver. This allows you to maintain the wireless communication link over a much broader area range than would be allowed by a receiver utilizing a single antenna and also virtually eliminates multipath dropouts, interference and phase cancellation problems. In addition, special sample-and-hold linking circuitry ensures that correct phase correlation is maintained at all times, with no noise or pops during antenna switching. The result is performance which exceeds that of conventional antenna true diversity systems and the highest quality audio fidelity available in any wireless system. Finally, the provision of Signetics® noise reduction produces crystal-clear sound with minimized background noise and hiss.

In this manual, you'll find a more detailed description of the features of your Stage 44 or Stage 4 system, as well as a guided tour through all components, step-by-step instructions for setting up and using your system and full specifications. If your Stage 44 or Stage 4 system was purchased in the United States, you'll also find a warranty card enclosed—don't forget to fill it out and mail it! This will enable you to receive online technical support and will allow us to send you updated information about other Samson products in the future. If your Stage 44 or Stage 4 system was purchased outside of the United States, contact your local distributor for warranty details.

**SPECIAL NOTE for U.S. purchasers:** Should your Stage 44 or Stage 4 system ever require servicing, a *Return Authorization* number (RA) is necessary. Without this number, the unit will not be accepted. Please call Samson at 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 its original carton and packing materials. If your Stage 44 or Stage 4 system was purchased outside of the United States, contact your local distributor for servicing information.

# Guided Tour - SR44 Front Panel



**1: Antennas (A and B)** - The antenna mountings allow full rotation for optimum placement. In normal operation, both Antenna A (the antenna on the left) and Antenna B (the antenna on the right) should be placed in a vertical position. Both antennas can be folded inward for convenience when transporting the SR44. See the "Setting Up and Using Your Stage 44 / Stage 4 System" section on page 10 in this manual for more information about antenna positioning.

**2: Volume control** - This knob sets the level of the audio signal being output through both the balanced and unbalanced output jacks on the rear panel. Reference level is obtained when the knob is turned fully clockwise.

**3: "TX ON" LED** - Lights when carrier signal of sufficient strength is being received by the SR44.

**4: SQL (Squelch) control** - This control determines the maximum range of the SR44 before audio signal dropout. Although it can be adjusted using the supplied plastic screwdriver, it should normally be left at its factory setting. See the "Setting Up and Using Your Stage 44 / Stage 4 System" section on page 10 in this manual for more information.

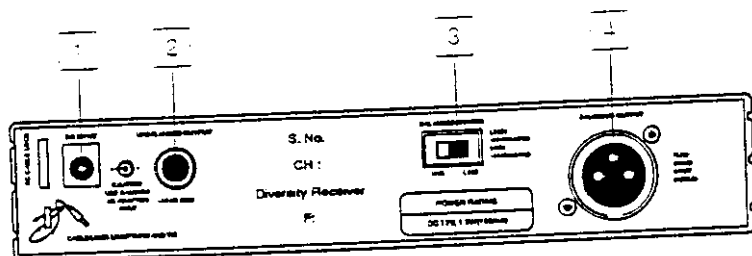
**5: A/B LEDs** - When signal is being received, one of these will be lit green, showing you whether the (left) "A" or (right) "B" receiver is currently being used. The SR44 constantly scans its two antennas and automatically selects whichever is receiving the strongest, clearest signal. This *Microprocessor True Diversity* switching is completely inaudible, but it effectively increases overall range while virtually eliminating potential interference and phase cancellation problems.

**6: AF Level meter** - This "ladder" display (similar to the VU bar meter used on audio devices) indicates the strength of the incoming audio signal. When the "100%" segment is lit, the incoming signal is optimized at unity gain; when the "125%" segment is lit, the signal is overloading. When only the left-most "10%" segment is lit, the incoming signal is at just 10% of optimum strength. If no segments are lit, little or no signal is being received. See the "Setting Up and Using Your Stage 44 / Stage 4 System" section on page 10 in this manual for more information.

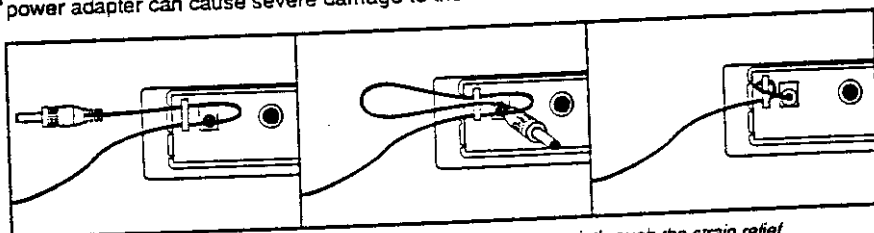
**7: Power LED** - This lights red whenever the SR44 is turned on.

**8: Power switch** - Use this to turn the SR44 power on and off. When it is on, the Power LED (see #7 above) is lit.

# Guided Tour - SR44 Rear Panel



**1: DC Input** - Connect the supplied 12 volt 160 mA power adapter here, using the strain relief as shown in the illustration below. **WARNING:** The substitution of any other kind of power adapter can cause severe damage to the SR44 and will void your warranty.



*Using the strain relief: Gather up a loop of wire and pass it through the strain relief, then pass the adapter plug through the loop in order to create a knot.*

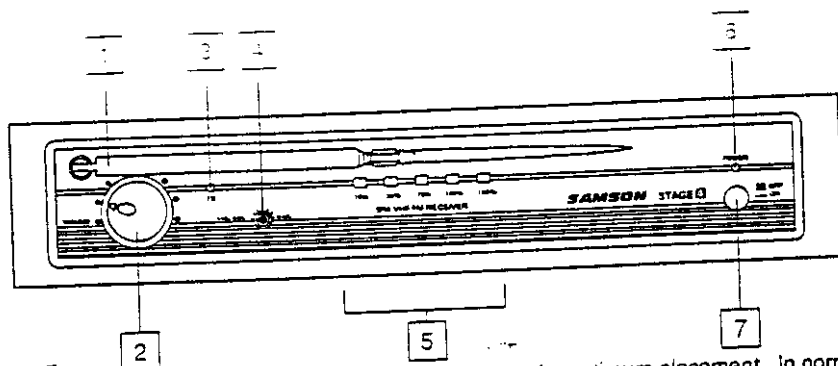
**2: Unbalanced output\*** - Use this unbalanced high impedance (5K Ohm) 1/4" jack when connecting the SR44 to consumer (-10) audio equipment. Wiring is as follows: tip hot, sleeve ground.

**3: Audio Output Level switch** - Sets the audio output level attenuation of the balanced output (see #4 below) to -20 dBm (line level) or -40 dBm (mic level). See the "Setting Up and Using Your Stage 44 / Stage 4 System" section on page 10 in this manual for more information.

**4: Balanced output\*** - Use this electronically balanced low impedance (600 Ohm) XLR jack when connecting the SR44 to professional (+4) audio equipment. Pin wiring is as follows: Pin 1 ground (shield), Pin 2 high (hot), and Pin 3 low (cold).

\* If required, both the unbalanced and balanced outputs can be used simultaneously.

## Guided Tour - SR4 Front Panel



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**1: Antenna** - The antenna mounting allows full rotation for optimum placement. In normal operation, the antenna should be placed in a vertical position. It also can be folded inward for convenience when transporting the SR4. See the "Setting Up and Using Your Stage 44 / Stage 4 System" section on page 10 in this manual for more information about antenna positioning.

**2: Volume control** - This knob sets the level of the audio signal being output through both the balanced and unbalanced output jacks on the rear panel. Reference level is obtained when the knob is turned fully clockwise.

**3: "TX ON" LED** - Lights when carrier signal of sufficient strength is being received by the SR4.

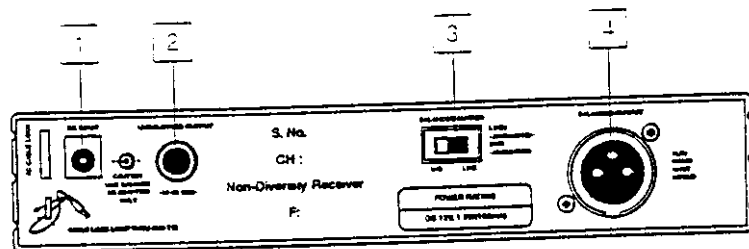
**4: SQL (Squelch) control** - This control determines the maximum range of the SR4 before audio signal dropout. Although it can be adjusted using the supplied plastic screwdriver, it should normally be left at its factory setting. See the "Setting Up and Using Your Stage 44 / Stage 4 System" section on page 10 in this manual for more information.

**5: AF Level meter** - This "ladder" display (similar to the VU bar meter used on audio devices) indicates the strength of the incoming audio signal. When the "100%" segment is lit, the incoming signal is optimized at unity gain; when the "125%" segment is lit, the signal is overloading. When only the left-most "10%" segment is lit, the incoming signal is at just 10% of optimum strength. If no segments are lit, little or no signal is being received. See the "Setting Up and Using Your Stage 44 / Stage 4 System" section on page 10 in this manual for more information.

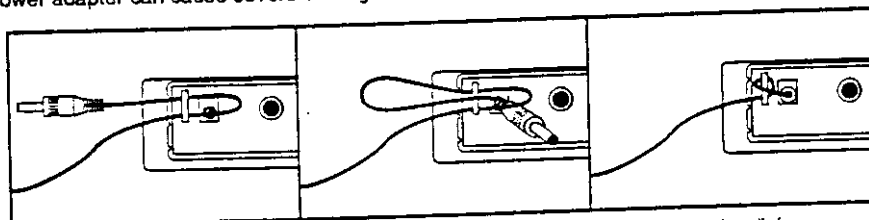
**6: Power LED** - This lights red whenever the SR4 is turned on.

**7: Power switch** - Use this to turn the SR4 power on and off. When it is on, the Power LED (see #6 above) is lit.

# Guided Tour - SR4 Rear Panel



**1: DC input** - Connect the supplied 12 volt 160 mA power adapter here, using the strain relief as shown in the illustration below. **WARNING:** The substitution of any other kind of power adapter can cause severe damage to the SR4 and will void your warranty.



*Using the strain relief: Gather up a loop of wire and pass it through the strain relief, then pass the adapter plug through the loop in order to create a knot.*

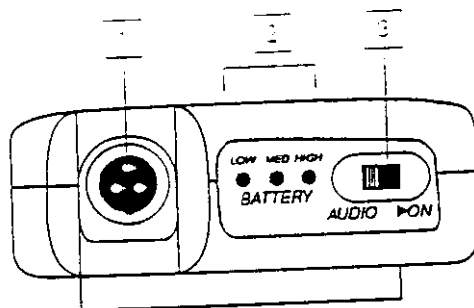
**2: Unbalanced output\*** - Use this unbalanced high impedance (5K Ohm) 1/4" jack when connecting the SR4 to consumer (-10) audio equipment. Wiring is as follows: tip hot, sleeve ground.

**3: Audio Output Level switch** - Sets the audio output level attenuation of the balanced output (see #4 below) to -20 dBm (line level) or -40 dBm (mic level). See the "Setting Up and Using Your Stage 44 / Stage 4 System" section on page 10 in this manual for more information.

**4: Balanced output\*** - Use this electronically balanced low impedance (600 Ohm) XLR jack when connecting the SR4 to professional (+4) audio equipment. Pin wiring is as follows: Pin 1 ground (shield), Pin 2 high (hot), and Pin 3 low (cold).

\* If required, both the unbalanced and balanced outputs can be used simultaneously.

## Guided Tour - ST4L / ST4G



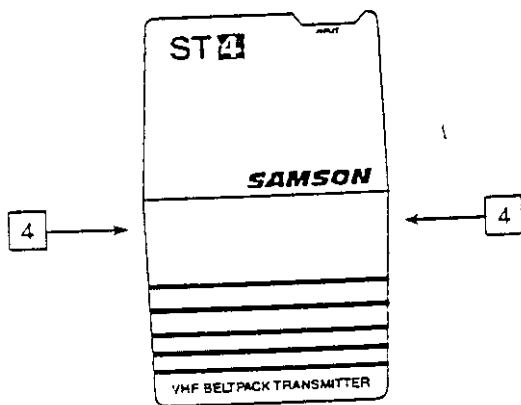
ENGLISH

**1: Input connector** - The input device is connected here. The ST4L is supplied with either a lavalier or headset microphone (connected via a Switchcraft mini-XLR jack), while the ST4G is supplied with a permanently connected cable that terminates at a 1/4" plug. A wiring chart showing the connections to popular lavalier and headset microphones can be found on page 13 of this manual.

**2: Battery level meter** - This set of three multicolor LEDs indicates relative battery power, indicating whether the installed battery is at low (red), mid (yellow) or high (green) strength. One of these will light whenever the ST4L or ST4G is powered on (see #5 on the next page). When the red "low" indicator lights, RF performance is degraded and the battery needs to be replaced.

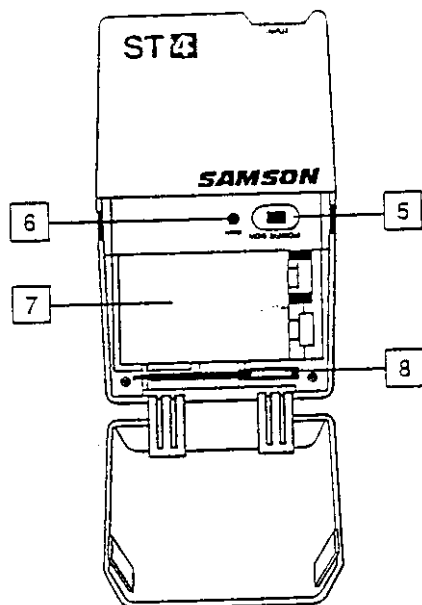
**3: Audio on-off switch** - When set to the "on" position, audio signal is transmitted. When set to the "off" position, the audio signal is muted. Because the carrier signal remains during muting, no "pop" or "thud" will be heard. Note that turning this off does *not* turn off the transmitter power—it is simply a way to temporarily mute the transmission of audio signal. If you don't plan on using the transmitter for extended periods, turn off the transmitter power by using the power on-off switch (see #5 on the next page).

**4: Battery door release** - Press gently inwards on these two indents in order to open the battery door of the ST4L or ST4G and access the Power on-off switch (see #5 on the next page) and Gain control (see #6 on the next page).



## Guided Tour - ST4L / ST4G

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**5: Power on-off switch\*** - Use this to turn the ST4L / ST4G on or off (to conserve battery power, be sure to leave it off when not in use).

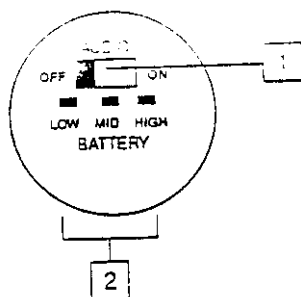
**6: Gain control (trimpot)** - This input sensitivity control has been factory preset to provide optimum level for the particular lavalier or headset model being used (in the case of the ST4G, it is preset for optimum instrument level) and so we recommend that this not be adjusted manually. If necessary, however, you can use the supplied plastic screwdriver (see #8 below) to raise or lower the ST4L / ST4G Gain control. See the "Setting Up and Using Your Stage 44 / Stage 4 System" section on page 10 in this manual for more information.

**7: Battery holder** - Insert a standard 9-volt alkaline battery here, being sure to observe the plus and minus polarity markings shown. We recommend the Duracell MN 1604 type battery. Although rechargeable Ni-Cad batteries can be used, they do not supply adequate current for more than four hours. **WARNING:** Do not insert the battery backwards; doing so can cause severe damage to the ST4L / ST4G and will void your warranty.

**8: Plastic screwdriver** - Specially designed for use in adjusting the ST4L / ST4G Gain control (see #7 above) and/or receiver Squelch control (see #4 on pages 3 and 5). See the "Setting Up and Using Your Stage 44 / Stage 4 System" section on page 10 in this manual for more information.

*\* Be sure to mute the audio signal at your external mixer or amplifier before turning transmitter power on or off, or an audible pop may result.*

# Guided Tour - SH4



ENGLISH

**1: Audio on-off switch** - When set to the "on" position, audio signal is transmitted. When set to the "off" position, the audio signal is muted. Because the carrier signal remains during muting, no "pop" or "thud" will be heard. Note that turning this off does *not* turn off the transmitter power—it is simply a way to temporarily mute the transmission of audio signal. If you don't plan on using the SH4 for extended periods, turn off its power by using the power on-off switch (see #3 below).

**2: Battery level meter** - This set of three multicolor LEDs indicates relative battery power, indicating whether the installed battery is at low (red), mid (yellow) or high (green) strength. One of these will light whenever the SH4 is powered on (see #3 below). When the red "low" indicator lights, RF performance is degraded and the battery needs to be replaced.

**3: Power on-off switch\*** - Use this to turn the SH4 on or off (to conserve battery power, be sure to leave it off when not in use).

**4: Gain control (trimpot)** - This input sensitivity control has been factory preset to provide optimum level for the particular microphone capsule provided with your Stage 44 or Stage 4 system and so we recommend that this not be adjusted manually. If necessary, however, you can use the supplied plastic screwdriver to raise or lower the input level. See the "Setting Up and Using Your Stage 44 / Stage 4 System" section on page 10 in this manual for more information.

**5: Battery holder** - Insert a standard 9-volt alkaline battery here, being sure to observe the plus and minus polarity markings shown. We recommend the Duracell MN 1604 type battery. Although rechargeable Ni-Cad batteries can be used, they do not supply adequate current for more than four hours. **WARNING:** Do not insert the battery backwards; doing so can cause severe damage to the SH4 and will void your warranty.

\* Be sure to mute the audio signal at your external mixer or amplifier before turning transmitter power on or off, or an audible pop may result.

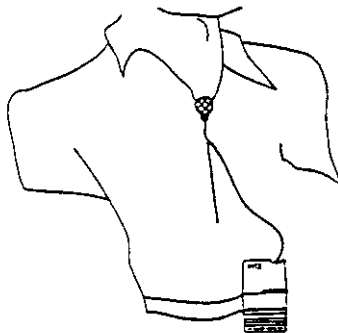
# Setting Up and Using Your Stage 44 / Stage 4 System

The basic procedure for setting up and using your Stage 44 or Stage 4 VHF Wireless System takes only a few minutes:

1. For the Stage 44 / Stage 4 system to work correctly, both the receiver and transmitter must be set to the same channel. Remove all packing materials (save them in case of need for future service) and check to make sure that the supplied receiver and transmitter are set to the same channel. If these channels do not match, contact your distributor or, if purchased in the United States, Samson Technical Support at 1-800-372-6766.
2. Physically place the receiver where it will be used (the general rule of thumb is to maintain "line of sight" between the receiver and transmitter so that the person using or wearing the transmitter can see the receiver). An optional rack-mount kit (available from your Samson dealer) allows the SR44 or SR4 to be mounted in a standard 19" rack if desired. Extend the antenna or antennas and place them in a vertical position.
3. Make sure the Power on-off switch in your ST4L / ST4G belt-pack or SH4 handheld transmitter is set to "Off."
- 4a. If your system contains a ST4L or ST4G belt-pack transmitter, press gently inwards on both battery cover release indents to open the battery door. Note that this door is hinged and not intended to be removed from the transmitter case. Please use care when opening this door as undue force will destroy the hinge.
- 4b. If your system contains a SH4 handheld transmitter, unscrew the bottom section of the microphone by turning it counterclockwise and then slide it off.
5. Place a fresh 9-volt alkaline battery in the transmitter battery holder, taking care to observe the polarity markings. If you are using a ST4L or ST4G belt-pack transmitter, gently replace the battery door by swinging it up and pressing until it clicks. If you are using a SH4 handheld transmitter, replace the bottom section of the microphone by sliding it on and then screwing it back on. Whichever transmitter you are using, leave it off for the moment.
6. Make the physical cable connection between the SR44 or SR4 output jack and the line or mic level audio input of your amplifier or mixer. If you are using the balanced XLR jack (preferable, since it will deliver an electromagnetically cleaner signal), be sure to set the receiver rear panel Audio Output Level switch correctly. If required, both the balanced and unbalanced outputs can be used simultaneously. Leave your amplifier (and/or mixer) off at this time.
7. Turn the Volume knob on the SR44 or SR4 completely counterclockwise. Using the strain relief, connect the supplied AC adapter to the DC Input on the rear panel of the SR44 or SR4, then plug the adapter into any standard AC outlet. Press the front panel Power switch to turn on the SR44 or SR4; the red "Power" LED will light up, but all other front panel LEDs will remain unlit.
8. Turn on the power to the ST4L, ST4G or SH4 transmitter (using its Power on-off switch); the green "HIGH" Battery strength LED will light if the battery is sufficiently strong. At this point, the "TX" LED on the front panel of the receiver will light. If you are using an SR44 receiver, either the "A" or "B" green LED on the front panel will also light, depending upon which antenna is receiving the stronger signal.

# Setting Up and Using Your Stage 44 / Stage 4 System

9. Now it's time to set the audio levels. Turn on your connected amplifier and/or mixer but keep its volume all the way down. Next, make sure that your transmitter is unmuted by setting its Audio switch to "On." Then set the Volume knob on the SR44 or SR4 fully counterclockwise. If you are using the SH4 transmitter or if you are using the ST4L transmitter with a connected lavalier microphone or headset, speak or sing into the mic at a normal performance level while observing the SR44 or SR4 front panel AF Level meter. If you are using the ST4G transmitter with a connected instrument, play the instrument at normal performance level while observing the SR44 or SR4 front panel AF Level meter. If the "100%" (unity gain) segment is lighting steadily, with just occasional higher excursions, the audio level is correctly set. If not, use the supplied plastic screwdriver to slowly adjust the SH4, ST4L, or ST4G Gain control (trimpot) until the SR44 or SR4 AF Level meter "100%" (unity gain) segment lights steadily (with occasional higher excursions). Then slowly raise the SR44 or SR4 Volume knob to the 2 o'clock position (unity gain) and, finally, set the volume of your amplifier/mixer until the desired level is reached. If you are using a ST4L beltpack transmitter equipped with a lavalier microphone, note that correct lavalier placement is critical to sound quality. We recommend that you place it as shown in the illustration on the right—as close to your mouth as possible but off to one side (to minimize nasality) and unobstructed by clothing. Bear in mind also that *omni* microphones (mics which pick up signal from all directions) are more prone to feedback problems than *unidirectional* (*cardioid* or *supercardioid*) ones; in general, you can avoid feedback by taking care not to use any microphone directly in front of a PA speaker (if this is unavoidable, try using an equalizer to attenuate those high- or mid-range frequencies which are causing the feedback "squealing").



10. If you hear distortion at the desired volume level (or if the "125%" segment LED in the AF Level meter is lighting frequently), first check that the SR44 or SR4 rear panel Audio Output Level switch is set correctly. Next, make sure that the gain structure of your audio system is correctly set (consult the owners manual of your mixer and/or amplifier for details). If you still hear distortion, do the following:

- If you are using a SH4 handheld transmitter or an ST4L transmitter with connected lavalier microphone or headset, its Gain control has been factory preset to provide optimum level for the particular microphone model being used and so no adjustment should be necessary. Any distortion present should therefore simply be a matter of the microphone being too close to the mouth; try moving it further away. If this does not solve the problem, use the supplied plastic screwdriver to turn the Gain control (trimpot) on the SH4 or ST4L slowly counterclockwise until the distortion disappears.
- If you are using a ST4G transmitter with an instrument such as electric guitar or bass, lower the output level of the instrument until the distortion disappears. Alternatively, you can use the supplied plastic screwdriver to turn the Gain control (trimpot) on the ST4G slowly counterclockwise until the distortion disappears.

Note that, following this setup procedure, you can always lower the Volume knob of the SR44 or SR4 in order to further attenuate the output signal if necessary.

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## Setting Up and Using Your Stage 44 / Stage 4 System

11. Conversely, if you hear a weak, noisy signal at the desired volume level (and with the Volume control of the receiver turned fully clockwise), again make sure that the SR44 or SR4 rear panel Audio Output Level switch is set correctly and that the gain structure of your audio system is correctly set. If it is and the signal coming from the SR44 or SR4 is still weak and/or noisy, do the following:

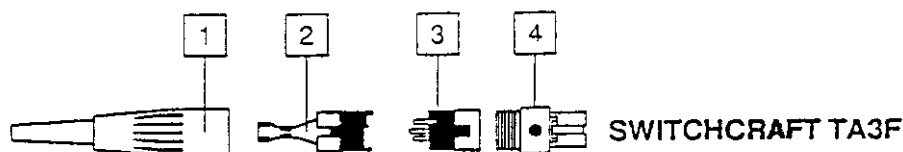
- If you are using a SH4 transmitter or an ST4L transmitter with connected lavalier microphone or headset, its Gain control has been factory preset to provide optimum level for the particular microphone model being used and so no adjustment should be necessary. Any weakness of signal should therefore simply be a matter of the microphone being too far from the mouth; try moving it closer. If this does not solve the problem, use the supplied plastic screwdriver to turn the Gain control (trimpot) on the SH4 or ST4L slowly clockwise until the signal reaches an acceptable level.
- If you are using a ST4G transmitter with an instrument such as electric guitar or bass, raise the output level of the instrument until a good signal is achieved. Alternatively, you can use the supplied plastic screwdriver to turn the Gain control (trimpot) on the ST4G slowly clockwise until the signal reaches an acceptable level.

12. Temporarily turn down the level of your mixer/amplifier system and turn off the power to your transmitter, leaving the SR44 or SR4 on. Then restore the previously set level of your mixer/amplifier. With the transmitter off, the receiver output should be totally silent—if it is, skip ahead to the next step. If it isn't (that is, if you hear some noise), you may need to adjust the receiver's front panel Squech control. When the Squech control is at its minimum setting, the Stage 44 / Stage 4 system always provides maximum range without dropout; however, depending upon the particular environment your system is used in, you may need to reduce that range somewhat in order to eliminate band noise or interference when the transmitter is turned off. To do so, use the provided screwdriver to rotate the Squech control completely counterclockwise (to the "Min" position), then slowly turn it clockwise until the noise disappears. If no noise is present at any position, leave it at its fully counterclockwise "Min" position (so as to have the greatest overall range available).

13. When first setting up the Stage 44 or Stage 4 System in a new environment, it's always a good idea to do a walkaround in order to make sure that coverage is provided for your entire performance area. Accordingly, turn down the level of your audio system and turn on both the transmitter and receiver. Then, with the transmitter unmuted, restore the level of your audio system and while speaking, singing, or playing your instrument, walk through the entire area that will need to be covered. As you do so, the "TX" LED on the front panel of the SR44 or SR4 should always remain lit. If you are using a Stage 44 system, one of the green "A" and "B" LEDs on the SR44 receiver should always be lit, though occasionally switching to show you which antenna is receiving the stronger signal. Always try to minimize the distance between transmitter and receiver as much as possible so that the strongest possible signal is received from all planned transmission points. In fixed installations such as A/V or corporate conference rooms or for extended range applications (where the transmitter and receiver are more than 150 feet apart), it may be desirable to angle the receiver antenna or antennas differently from their vertical position or to install the receiver in the same room as the transmitters (and, if necessary, to extend the wiring to remote audio equipment).

If you have followed all the steps above and are experiencing difficulties, contact your local distributor or, if purchased in the United States, call Samson Technical Support (1-800-372-6766) between 9 AM and 5 PM EST.

## Appendix A: ST4L Multipin Wiring Guide and Chart

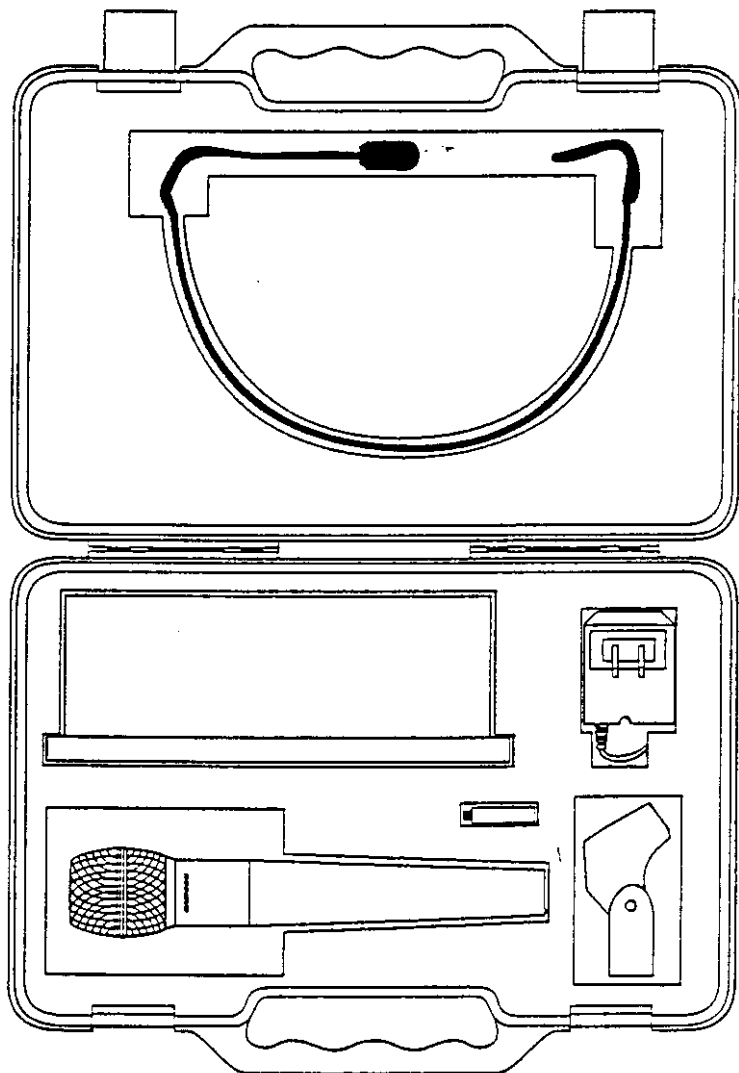


| MANUFACTURER    | MODEL               | PIN 1                | PIN 2   | PIN 3         |
|-----------------|---------------------|----------------------|---------|---------------|
| AKG             | C410                | SHIELD<br>RED        | WHITE   | JUMP TO PIN 2 |
| AUDIO TECHNICA  | AT831               | YELLOW x 2<br>SHIELD | RED x 2 | JUMP TO PIN 2 |
| AUDIO TECHNICA  | ATM75               | YELLOW x 2<br>SHIELD | RED x 2 | JUMP TO PIN 2 |
| AUDIO TECHNICA  | ATPRO8HE            | YELLOW x 2<br>SHIELD | N/C     | RED x 2       |
| AUDIO TECHNICA  | ATPRO35X            | YELLOW x 2<br>SHIELD | RED x 2 | JUMP TO PIN 2 |
| AUDIO TECHNICA  | MT350               | SHIELD               | WHITE   | JUMP TO PIN 2 |
| CROWN           | CM311(E)            | SHIELD<br>WHITE      | RED     | JUMP TO PIN 2 |
| SONY            | ECM44               | SHIELD<br>WHITE      | RED     | JUMP TO PIN 2 |
| SONY            | ECM55               | SHIELD<br>WHITE      | RED     | JUMP TO PIN 2 |
| SONY            | ECM77               | SHIELD<br>WHITE      | RED     | JUMP TO PIN 2 |
| SONY            | ECM144              | SHIELD               | WHITE   | JUMP TO PIN 2 |
| SENNHEISER      | MKE2                | SHIELD<br>BLUE       | RED     | JUMP TO PIN 2 |
| SENNHEISER      | MKE40               | SHIELD<br>BLUE       | RED     | JUMP TO PIN 2 |
| SENNHEISER      | MKE48               | SHIELD<br>BLUE       | RED     | JUMP TO PIN 2 |
| SAMSON          | ECM40               | SHIELD               | WHITE   | JUMP TO PIN 2 |
| COUNTRYMAN      | ISOMAX              | SHIELD               | WHITE   | JUMP TO PIN 2 |
| GIUITAR         |                     | SHIELD               | N/C     | AUDIO         |
| PIN INFORMATION | SWITCHCRAFT<br>TA3F | GROUND               | +Vdc    | AUDIO         |

**Procedure for wiring ST4L connector:** Unscrew rubber boot 1 and pass wire through 1 and 2. Solder wire to 3 after removing from 4 (use chart above). Reinsert 3 to 4 with attached wire (3 is keyed to fit 4). Plug 2 into 3 again (2 is keyed to 3) and crimp wire. Rescrew rubber boot 1 to 4.

## Appendix B: Carrying Case

To ensure the longevity of your Stage 44 / Stage 4 system, and for convenience when on the road, your Stage 44 / Stage 4 system includes an ABS impact-resistant plastic carrying case with foam rubber padding. As shown in the illustration below, custom cutouts in the interior padding provide secure placement for all components in your system.



# Specifications

## Transmitter / Émetteur / Sender / Transmisor (ST4L, ST4G and SH4):

|                                          |                                                     |
|------------------------------------------|-----------------------------------------------------|
| Transmission Mode                        | Frequency modulation, 80KF3E, 20 kHz peak deviation |
| Frequency Range                          | 173.60 MHz to 216.20 MHz, 5 frequencies             |
| OSC System                               | Crystal controlled, x9 multiplication               |
| RF Power                                 | 20 mW (USA models), 10 mW (European models)         |
| Operating Range                          | 300 ft.                                             |
| Frequency Stability                      | ± 10 ppm                                            |
| Approvals                                | Complies with ETS 300 422 and FCC Part 74           |
| Radiating Harmonic and Spurious Emission | Below limits of applicable regulations              |
| Antenna Type                             | Internal                                            |
| Audio Frequency Response                 | 40 Hz to 16 kHz ±3 dB                               |
| Pre-Emphasis                             | 50 µSec                                             |
| Noise Reduction System                   | NE571 based compandor                               |
| Signal To Noise Ratio                    | > 100 dB                                            |
| Maximum Input Level                      | 0 dBV (ST4L, ST4G), -20 dBV (SH4)                   |
| T.H.D.                                   | < 1% @ 1 kHz                                        |
| Current Consumption                      | 22 mA                                               |
| Battery Life (MN1604 9-volt alkaline)    | 18 - 20 hours                                       |
| Operating Temperature                    | -10 to +55 degrees C                                |
| Controls                                 | Power On/Off, Mute On/Off, Level Control (Trimpot)  |
| ST4L / ST4G                              | Power On/Off, Audio On/Off, Level Control (Trimpot) |
| SH4                                      | Battery high/medium/low                             |
| LED Indicator                            |                                                     |
| Dimensions                               | 85 (W) x 22 (H) x 10 (D) mm (2.6 x .87 x .4 in.)    |
| ST4L / ST4G                              | 37 (W) x 173 (H) mm (1.48 x 6.8 in.)                |
| SH4                                      | 90 grams - 3.2 oz.                                  |
| Weight                                   |                                                     |

## Receiver / Récepteur / Empfänger / Receptor (SR44 and SR4):

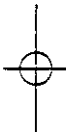
|                                          |                                                                   |
|------------------------------------------|-------------------------------------------------------------------|
| Receiving System                         | Single conversion Superheterodyne, Microprocessor True Diversity* |
| SR44                                     | Single conversion Superheterodyne, Non-Diversity                  |
| SR4                                      | 173.60 MHz to 216.20 MHz, 5 frequencies                           |
| Frequency Range                          | 80KF3E                                                            |
| Receiving Mode                           | < 3 µV for 20 dB SINAD, < 10 µV for 50 dB S/N                     |
| Sensitivity                              | 120 kHz BW, nominal @ -6 dB, ± 300 kHz (adj CH), -75 dB           |
| Selectivity                              | 2.5 µV to 250 µV adjustable                                       |
| Squelch Sensitivity                      | 10.7 MHz                                                          |
| IF                                       | Crystal controlled                                                |
| Local Oscillator System                  | NE571 based compandor                                             |
| Noise Reduction System                   | 50 µsec.                                                          |
| De-emphasis                              | > 100 dB (IHF-A) line out, > 90 dB (IHF-A), mic out               |
| Signal To Noise Ratio                    | 40 Hz to 16 kHz ±3 dB                                             |
| Audio Frequency Response                 | < 1% @ 1 kHz                                                      |
| T.H.D.                                   | 0 dBV unbalanced (1/4" phone connector),                          |
| Audio Output Levels                      | 20 dBV balanced (XLR connector)                                   |
|                                          | 5 kΩ unbalanced, 600 Ω balanced                                   |
| Audio Output Impedance                   | 1/4 wavelength rod                                                |
| Antennas                                 | -10 to +55 degrees C                                              |
| Operating Temperature                    | Volume, Squelch, Power                                            |
| Controls                                 |                                                                   |
| LED Indicators                           |                                                                   |
| SR44                                     | TX On / Antenna A or B (2 LEDs) / Power / AF Level (5 LEDs)       |
| SR4                                      | TX On / Power / AF Level (5 LEDs)                                 |
| Power Requirement                        | 12 Volts DC, 250 mA, AC adapter supplied                          |
| Dimensions (W x H x D, without antennas) | 482 x 44 x 130 mm (19 x 1.75 x 5.125 in.)                         |
| Weight (including antennas)              | 1.4 kg - 3.1 lb.                                                  |

Unit conforms

CE

\* US Patent 5,465,411

Notes



**FCC Rules and Regulations**

Samson wireless systems are type accepted under  
FCC rules parts 90, 74 and 15.

Licensing of Samson equipment is the user's  
responsibility and licensability depends on the user's  
classification, application and frequency selected.

This device complies with RSS-210 of  
Industry & Science Canada.

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.