

UHF Micro **32**

DIVERSITY WIRELESS SYSTEM

OWNERS MANUAL

SAMSON[®]

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Introduction

Congratulations on purchasing the Samson Micro 32 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 Micro 32 system is *frequency-agile*; that is, it is capable of operating over any of a number of selectable frequencies, making it eminently suitable for touring setups or where multiple wireless systems need to be used simultaneously. Specifically, it offers 32 different operating frequencies within each of three bands (low, medium, or high), allowing up to six different Micro 32 systems to be used simultaneously in one band. The system you have purchased contains an M32 micro diversity receiver and either our T32 belt-pack transmitter (for instrument or lavalier microphone or headset applications) or H32 hand-held microphone transmitter (available in a wide variety of popular capsules).

The Micro 32 system is specially designed to enable the production of professional audio tracks to accompany your video shoot or live broadcast. The use of a handheld mic transmitter or lavalier microphone connected to a belt-pack transmitter effectively isolates the performer from unwanted ambient sounds such as video camera motor noise or room sounds made by the camera operator or video crew. Because the M32 receiver is extremely small and lightweight, it can be attached easily to any video camera using the supplied strip of velcro, and can even be powered directly by the camera's own 12-volt power supply, if available.

In this manual, you'll find a QuickStart section (for those of you familiar with wireless audio systems) as well as more detailed description of the features of the Micro 32 system, a guided tour through all components, step-by-step instructions for setting up your system, wiring diagrams and tables, a channel plan and full specifications. If your Micro 32 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 this and other Samson products in the future. If your Micro 32 system was purchased outside of the U. S., contact your local distributor for warranty details. Also, be sure to check out our website (<http://www.samsontech.com>) for complete information about our full product line.

SPECIAL NOTE for U.S. purchasers: Should your Micro 32 system ever require servicing, a *Return Authorization* number (RA) is necessary. Without this number, the unit will not be accepted. If your Micro 32 system was purchased in the United States, please call Samson at 1-800-372-6766 for a Return Authorization number prior to shipping your unit. If possible, return the unit in its original carton and packing materials. If your Micro 32 system was purchased outside of the U. S., contact your local distributor for servicing information.

* *Your receiver and transmitter have been factory preset to utilize the same channel. A listing of the available channels and their corresponding UHF frequencies is presented in Appendix B on page 17 in this manual.*

System Features

Designed for use in both live sound and sound contracting applications, the Samson UHF Micro 32 Wireless System provides a high performance, cost effective solution, utilizing state-of-the-art technology in wireless communications. Its main features include:

- Three bands of operation (low, medium and high), with 32 different available channels per band, all operating in the less crowded UHF bandwidth. Up to six Micro 32 systems (each tuned to a different frequency within the same band) can be used in the same location without interference. (U.S. users, who can access both the low and medium bands, have access to 64 channels and can use up to twelve Micro 32 systems in a single location.)
- Optimized for use in videography applications, the Micro 32 system is highly customizable, combining a UHF "walkaround" receiver with your choice of backpack or handheld microphone transmitters.
- Using the supplied velcro strip, the compact, lightweight M32 receiver can be easily attached to any video camera and can even derive 12-volt power from the camera (if available), making it easy to integrate into any traveling or fixed installation video system.
- The M32 micro diversity receiver includes a pair of tuned antennas and provides both balanced and unbalanced outputs (with a three-position output level switch) and a headphone monitor output with continuously adjustable level control. The receiver also includes an audio peak LED, dual receiver indicators, and an RF strength meter.
- Technological breakthrough usage of SAW (Surface Acoustic Wave) filters (similar to those used in high-end television receivers) for extremely precise and stable tuning.
- True Diversity technology maximizes active range (up to 300 feet) and reduces potential interference problems through automatic switching between two independent receivers.
- Built-in companding noise reduction in all components for crystal-clear sound with minimized background noise and hiss.
- Transmitters utilize PLL synthesized VCO technology to minimize spurious emissions and provide "popless" muting, which turns off the audio signal while leaving the carrier signal on. They use standard 9-volt batteries, with battery life of approximately 8 hours. Transmitters also provide a convenient three-segment multicolor Battery Strength LED meter, allowing you to monitor the remaining power in the installed battery.
- The H32 hand-held microphone transmitter is available in a selection of popular mic capsules, including:

Samson QMIC dynamic

Audix **OM-5** dynamic

Electro Voice **ND 757A** N/DYM dynamic

Electro Voice **ND 857A** N/DYM dynamic

Shure **SM85** condenser

Shure **SM87** condenser

System Features

- Compact “beeper-sized” T32 belt-pack transmitter is extremely lightweight (less than 4 ounces with a 9-volt battery installed). It provides a mini-XLR jack for connection to guitar cables or a variety of popular headsets and lavalier microphones, including:

Samson QE headset*

Samson QV headset

AKG **C-410** headset

Audio-Technica **ATM-75** headset

Audio-Technica **MT-350** lavalier

Audio-Technica **Pro-35X** wind microphone

Audio-Technica **AT-831** lavalier

Countryman **IsoMax** headset

Crown **CM-311(E)** headset

Samson **ECM-40** lavalier

Sennheiser **MKE-2** lavalier

Sony **ECM-44** lavalier

Sony **ECM-55** lavalier

Sony **ECM-77** lavalier

- All components have rugged construction that ensures reliable operation in even the most demanding performance environments.

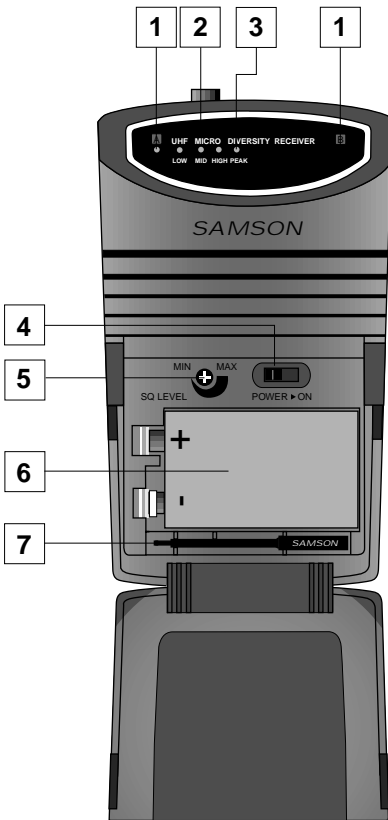
* *Optimized for aerobics workouts, this headset is recommended for usage in high-humidity environments such as physical fitness centers.*

QuickStart

If you've had some prior experience using wireless systems, these QuickStart instructions will get you up and running with your Micro 32 system in a matter of minutes! Detailed instructions for setting up and using your Micro 32 system can be found on page 12 of this manual, and the "Guided Tour" sections on pages 5 - 11 provide full descriptions of all Micro 32 component controls and displays.

1. Make sure that the supplied M32 receiver and T32 or H32 transmitter are factory preset to the same band (High, Medium or Low).
2. Physically place the M32 where it will be used (if desired, it can be connected to your video camera using the supplied velcro strip) and extend both of its antennas vertically.
3. If you are using the T32 with a lavalier or headset microphone, make the physical connection between its mini-XLR input connector and the microphone you are using.
4. Place a fresh battery in the transmitter and M32 receiver (or connect the M32 DC input to your video camera's 12 volt output or optional AC300R adapter) and turn it on momentarily to check it; the multifunction LED will light green if the battery is sufficiently strong.
5. Turn your audio system off and make the physical cable connection between the M32 balanced or unbalanced output jack (if necessary, both can be used simultaneously) and the line or mic level audio input of your video camera, amplifier or mixer. If you are using the balanced output jack, be sure to set the M32 Audio Output Level switch correctly.
6. Determine the best Group and Channel to use by setting the M32 meter to "RF" and observing it while using the supplied plastic screwdriver to select different Groups and available Channels within that Group (refer to Appendix B on page 17 in this manual for a complete channel plan). Select a Group that has the greatest number of suitable Channels and the Channel within that Group that has the greatest signal strength. Remember that, when two or more transmitters and receivers are being used at the same location, all devices must be set to the same Group (each to a different Channel).
7. Turn on the transmitter and use the supplied plastic screwdriver to set it to the same Group and Channel you have selected for the receiver. Its multifunction LED will blink when selecting an unavailable Channel within a Group.
8. Set the audio gain structure by speaking or singing into your mic (or playing your instrument) at a normal performance level while slowly raising the audio input control of your video camera or audio output level of your amplifier or mixer until the desired level is reached. If necessary, use the supplied plastic screwdriver to adjust the transmitter's AF Level trimpot in order to increase or decrease its signal level.
9. Do a walkaround through the intended area of coverage while observing the M32's RF meter. Reposition it (or its antennas) or select a different Group/Channel as necessary.
10. If you hear any spurious noise from the M32 output when the transmitter is turned off, use the supplied plastic screwdriver to adjust the M32 Squelch level control, slowly turning it clockwise until the point at which the noise disappears.

Guided Tour - M32



1: A/B Receiver LEDs - When signal is being received, one of these will be lit orange, showing you whether the (left) "A" or (right) "B" receiver is currently being used. The M32 constantly scans its two antennas and automatically selects whichever is receiving the strongest, clearest signal. This *True Diversity* switching is completely inaudible, but it effectively increases overall range while virtually eliminating potential interference and phase cancellation problems.

2: Meter - This set of three multicolor LEDs acts as a meter, indicating either battery power or the strength of the incoming RF signal. This meter can also be disabled altogether to conserve battery power. See #15 on the next page for more information.

3: Peak LED - This LED lights red when output signal from the M32 is at the onset of clipping (that is, when it is on the verge of being distorted). If you see this light during operation, move the microphone further away or lower the output level of your instrument or transmitter. For more information, see the "Setting Up and Using the Micro 32 System" section on page 12 in this manual.

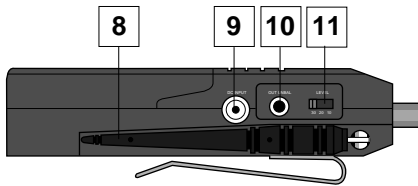
4: Power switch - Use this to turn the M32 power on and off.

5: SQ (Squelch) Level control - This control determines the maximum range of the M32 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 the Micro 32 System" section on page 12 in this manual for more information.

6: 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 M32 and will void your warranty.

7: Plastic screwdriver - Specially designed for use in adjusting the M32 Squelch Level control (see #5 above). See the "Setting Up and Using the Micro 32 System" section on page 12 in this manual for more information.

Guided Tour - M32

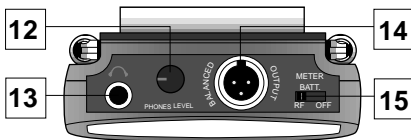


8: Antennas (A and B) - The antenna mountings allow full rotation for optimum placement. In normal operation, both antennas should be placed in a vertical position. Both antennas can be folded inward for convenience when transporting the M32. See the "Setting Up and Using the Micro 32 System" section on page 12 in this manual for more information.

9: DC input - This jack will accept a DC input voltage of 6 - 13 volts (inner connection [tip] positive, outer connection [sleeve] ground) from your video camera, if available. Connect the optional Samson AC300R adapter here to charge a rechargeable 9-volt Ni-Cad battery.

10: Unbalanced output* - Use this unbalanced (1K Ohm max.) 1/8" (3.5 mm) mini-phone jack when connecting the M32 to consumer (-10) audio equipment. Wiring is as follows: tip hot, sleeve ground. If your video camera has stereo audio inputs, you'll need to use a Y-adaptor that has a 1/8" (3.5 mm) mini-phone plug at one end and dual male RCA-type plugs at the other end.

11: Audio Output Level switch - Sets the audio output level of both the balanced and unbalanced outputs (see #10 above and #14 below) to -30 dBm (mic level), -20 dBm, or -10 dBm (line level). See the "Setting Up and Using the Micro 32 System" section on page 12 in this manual for more information.



12: Level control - This knob sets the level of the audio signal being sent to the headphones output (see #13 below).

13: Headphones output - Connect a stereo headphone to this standard 1/8" (3.5 mm) mini-phone jack in order

to monitor the signal being output by the M32. We recommend the use of 30 ohm headphones. The level of the headphone signal can be set by adjusting the Level control (see #12 above). Maximum output is 240 mW @ 30 ohms).

14: Balanced output* - Use this electronically balanced low impedance (600 Ohm) mini-XLR jack when connecting the M32 to professional (+4) audio equipment. Pin wiring is as follows: Pin 1 ground, Pin 2 high (hot), and Pin 3 low (cold).

15: Meter switch - This three-position switch determines the function of the M32 meter (see #2 on the previous page). In the left "RF" position, the meter indicates the strength of the incoming RF signal. In the center "BATTERY" position, the meter indicates relative battery power, showing whether the installed battery is at low (red), mid (yellow) or high (green) strength. (Note: When the red "low" indicator lights, performance is degraded and the battery needs to be replaced). In the right "OFF" position, the meter is disabled altogether, thus conserving battery power.

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

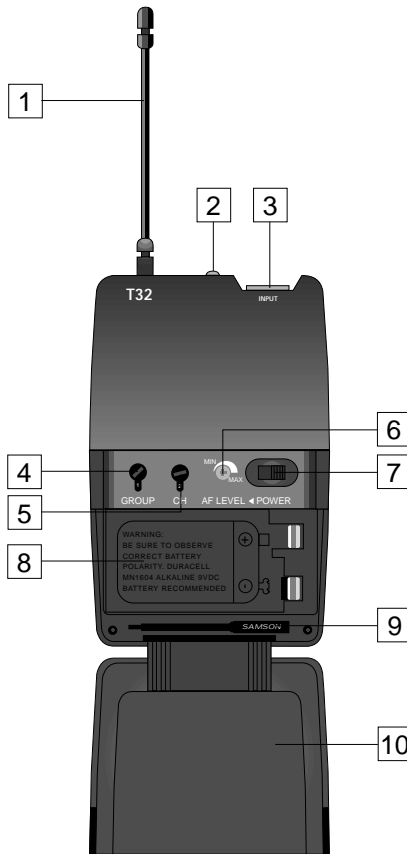
Guided Tour - M32



16: Group selector - Use the supplied plastic screwdriver to set this to the desired Group.

17: Channel selector - Use the supplied plastic screwdriver to set this to the desired Channel. Note that only certain Channels are available within each Group; for more information, see Appendix B on page 17 in this manual.

Guided Tour - T32



1: Antenna - This permanently attached transmitter “pig tail” antenna should be fully extended for normal operations. See the “Setting Up and Using the Micro 32 System” section on page 12 in this manual for more information about antenna positioning.

2: Multifunction LED - This multicolor LED serves several functions. First, it lights whenever the T32 is powered on (see #7 on the next page). Secondly, whenever the T32 is powered on, it shows the relative battery power, indicating whether the installed battery is at low (red), mid (orange) or high (green) strength. When it lights steadily red (“low”), RF performance is degraded and the battery needs to be replaced. Finally, the LED blinks whenever an unavailable Channel within a Group is selected. See #5 on the following page for more information and Appendix B on page 17 in this manual for a complete channel plan.

3: Input connector - The input device (instrument cable, lavalier mic, or headset mic) is connected to this mini-XLR jack. See Appendix A on page 16 for more information.

4: Group selector - Use the supplied plastic screwdriver (see #9 on the following page) to set this to the desired transmission frequency Group.

Guided Tour - T32

5: Channel selector - Use the supplied plastic screwdriver to set this to the desired Channel. When two or more transmitters and receivers are being used in the same location, they should be set up to use different Channels within the same Group. Note that the T32 multifunction LED (see #2 on the preceding page) blinks whenever an unavailable Channel within a Group is selected. See the "Setting Up and Using the Micro 32 System" section on page 12 and Appendix B on page 17 in this manual for more information.

6: AF Level control (trimpot) - If necessary, you can use the supplied plastic screwdriver (see #9 below) to raise or lower the T32 input level. See the "Setting Up and Using the Micro 32 System" section on page 12 in this manual for more information.

7: Power on-off switch* - Use this to turn the T32 on or off (to conserve battery power, be sure to leave it off when not in use).

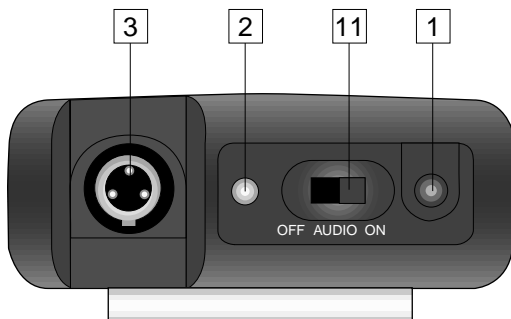
8: Battery holder - Insert a standard 9-volt alkaline battery here, being sure to observe the plus and minus polarity markings shown. We recommend the Duracell MN 1604 type battery. Although rechargeable Ni-Cad batteries can be used, they do not supply adequate current for more than four hours. **WARNING:** Do not insert the battery backwards; doing so can cause severe damage to the T32 and will void your warranty.

9: Plastic screwdriver - Specially designed for use in adjusting the T32 AF Level control (see #6 above) and/or M32 Squelch control (see #5 on page 5). See the "Setting Up and Using the Micro 32 System" section on page 12 in this manual for more information.

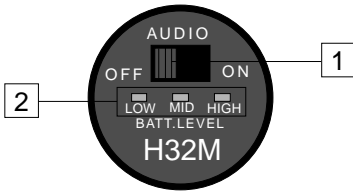
10: Battery door - The T32 battery door is hinged and not intended to be removed from the transmitter case. To open it, press gently inwards on the two tabs marked "Open" on either side of the door. See the "Setting Up and Using the Micro 32 System" section on page 12 in this manual for more information.

11: 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 #7 above).

** 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 - H32

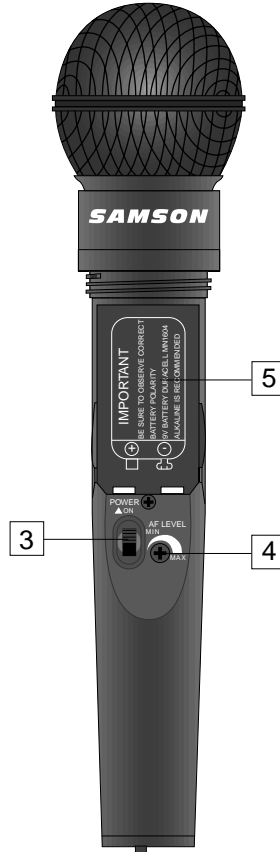


1: Audio on-off switch - When set to the “on” position, audio signal is transmitted. When set to the “off” position, the audio signal is muted. Because the carrier signal remains during muting, no “pop” or “thud” will be heard. Note that turning this off does *not* turn off the transmitter power—it is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

2: Multifunction LED - This multicolor LED serves several functions. First, it lights whenever the H32 is powered on (see #3 below). Secondly, whenever the H32 is powered on, it shows the relative battery power, indicating whether the installed battery is at low (red), mid (orange) or high (green) strength. When it lights steadily red (“low”), RF performance is degraded and the battery needs to be replaced. Finally, the LED blinks whenever an unavailable Channel within a Group is selected. See #7 on the following page for more information and Appendix B on page 17 in this manual for a complete channel plan.

3: Power on-off switch* - Use this to turn the H32 on or off (to conserve battery power, be sure to leave it off when not in use).

4: AF Level control (trimpot) - This input sensitivity control has been factory preset to provide optimum level for the particular microphone capsule provided with your Micro 32 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 the Micro 32 System” section on page 12 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 - H32



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 H32 and will void your warranty.

Note: As shown in the illustration on the left, the controls for setting the H32 Group and Channel indicated below are located on the opposite side to the battery compartment:

6: Group selector - Use the supplied plastic screwdriver to set this to the desired transmission frequency Group.

7: Channel selector - Use the supplied plastic screwdriver to set this to the desired Channel. When two or more transmitters and receivers are being used in the same location, they should be set up to use different Channels within the same Group. Note that the H32 multifunction LED (see #2 on the preceding page) blinks whenever an unavailable Channel within a Group is selected. See the "Setting Up and Using the Micro 32 System" section on page 12 and Appendix B on page 17 in this manual for more information.

Setting Up and Using the Micro 32 System

The basic procedure for setting up and using your Micro 32 Wireless System takes only a few minutes:

1. For the Micro 32 system to work correctly, both the receiver and transmitter must be set to the same band (labeled “Low,” “Medium” and “High”). Remove all packing materials (save them in case of need for future service) and check to make sure that the supplied M32 receiver and T32 or H32 transmitter are factory preset to the same band. If these do not match, contact your distributor or, if purchased in the United States, call Samson Technical Support at 1-800-372-6766.

2a. If you are using a 9-volt battery to power the M32, press gently down on the battery door release (on the front of the M32, on the word “Open”) and swing the door open in order to access the battery compartment. Note that the door is hinged and is not intended to be removed from the receiver case. Insert a 9-volt battery, being careful to observe the polarity markings. **Warning: Reversing the battery polarity may cause permanent damage to your receiver.** Turn the power switch “On” and set the Meter switch to “BATTERY.” The green “HIGH” meter LED will light if the battery is sufficiently strong. Once you’ve verified battery strength, turn the power switch “Off” again.

2b. If you are using the optional Samson AC300R adapter or your video camera’s 12-volt power supply to power the M32, connect it to the M32 DC input jack. On the front of the M32, press gently down on the battery door release (on the word “Open”) and swing the door open note that the door is hinged and is not intended to be removed from the receiver case). Make sure the power switch is set to “Off.”

3. If you are using the T32 belt-pack transmitter with a permanently attached instrument cable, skip ahead to step 4a below. If you are using the T32 with a lavalier or headset microphone, make the physical connection between its mini-XLR input connector and the microphone you are using. Because the mini-XLR plug is “keyed,” you’ll need to rotate it a certain way to get it to “mate” with the connector mounted on the T32; then push straight down until you hear a click. To remove the mini-XLR connector, press in the black dot on the plug and pull straight out (do not use force!). Never pull on the wire, only the plug itself (with the black dot pressed in).

4a. If your system contains a T32 belt-pack transmitter, make sure its pigtail antenna is extended fully and then press gently inwards on the two tabs marked “Open” (on the sides of the case) to open the battery door, which 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 H32 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 T32 belt-pack transmitter, gently replace the battery door by swinging it up and pressing until it clicks. If you are using a H32 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.

Setting Up and Using the Micro 32 System

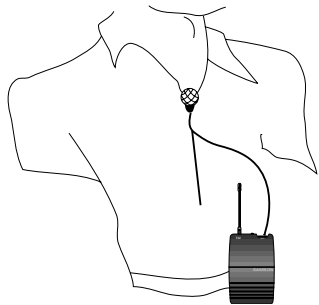
6. To check the battery strength, turn on the power to the T32 or H32 transmitter (using its Power on-off switch). The multifunction LED will light green if the battery is sufficiently strong. Once you've established that the installed battery has sufficient power, use the Power on-off switch to turn the transmitter off again.

7. Make the physical cable connection between the output of your M32 receiver and the audio input of your video camera or audio amplifier or mixer, being careful to set the Audio Output Level switch so that the signal is strong but not distorting. Normally, it should be set to the “-30” position when connecting to a mic-level input and to the “-20” or “-10” position when connecting to a line-level input. If required, both the balanced and unbalanced outputs can be used simultaneously. Leave your amplifier (and/or mixer) off at this time.

8. Next, select the Group and Channel for your transmitters and receivers. When two or more transmitters and receivers are being used at the same location, *all devices must be set to the same Group* (though each transmitter/receiver pair must use its own Channel) or intermodulation noise may occur. With the power to your transmitter off, set the M32 Meter switch to the left “RF” position, then use the supplied plastic screwdriver to set the M32 Group and Channel trimpots to an available channel within a Group. (Refer to Appendix B on page 17 in this manual for a complete channel plan.) Next, turn on the transmitter and set it to the same Group and Channel (its multifunction LED will blink whenever an unavailable Channel within a Group is selected). One or more segments in the M32 meter should then light. If the “HIGH” segment lights, the M32 is receiving an optimally strong RF signal. If the “LOW” segment lights (indicating a relatively weak RF signal), try a different Channel within the Group or a different Group/Channel altogether—you will find that some have stronger signals than others. Always pick the Channel that has the strongest signal.

9. Next, it's time to set the audio gain structure. Turn on your connected amplifier and/or mixer but keep its volume all the way down. Make sure that your transmitter is unmuted by setting its Audio switch to “On.” If you are using the H32 transmitter or if you are using the T32 transmitter with a connected lavalier microphone or headset, speak or sing into the mic at a normal performance level while slowly raising the volume of your amplifier/mixer until the desired level is reached. If you are using the T32 transmitter with a connected instrument, play the instrument at normal performance level while slowly raising the volume of your amplifier/mixer until the desired level is reached. If you are using a lavalier microphone, correct placement is critical to sound quality.

We recommend that you position 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 *omnidirectional* 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, you can try using an equalizer to attenuate those high frequencies which are causing the feedback “squealing”).



Setting Up and Using the Micro 32 System

10. If you hear distortion at the desired volume level, first check to see whether the red “Peak” LED on the M32 is lighting. If it is not, 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 the red “Peak” LED *does* light, do the following:

- If you are using an H32 transmitter, use the supplied plastic screwdriver to turn its AF Level control (trimpot) slowly counterclockwise (towards the “Min” position) until the distortion disappears.
- If you are using a T32 transmitter with connected lavalier microphone or headset, its AF Level control has been factory preset to provide optimum level for the particular lavalier or headset 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 AF Level control (trimpot) on the T32 slowly counterclockwise until the distortion disappears. If you are using a T32 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 AF Level control (trimpot) on the T32 slowly counterclockwise until the distortion disappears.

11. Conversely, if you hear a weak, noisy signal at the desired volume level, again 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 it is and the signal coming from the M32 is still weak and/or noisy, do the following:

- If you are using an H32 transmitter, use the supplied plastic screwdriver to turn the AF Level control (trimpot) on the transmitter slowly clockwise (towards the “Max” position) until the signal reaches an acceptable level.
- If you are using a T32 transmitter with connected lavalier microphone or headset, its Level control has been factory preset to provide optimum level for the particular lavalier or headset 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 AF Level control (trimpot) on the T32 slowly clockwise until the signal reaches an acceptable level. If you are using a T32 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 AF Level control (trimpot) on the T32 slowly clockwise until the signal reaches an acceptable level.

12. If you want to use headphones to monitor the transmission, connect a standard “Walkman”-type 30 ohm headphone to the M32 headphone output and adjust the Level control until the desired level is reached.

13. When first setting up the Micro 32 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 on both the transmitter and M32 receiver. If you are using a video camera, use the supplied velcro strip to attach the M32 to the side of the

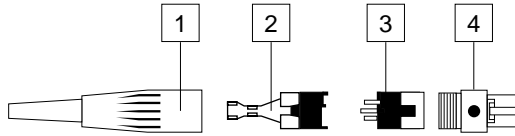
Setting Up and Using the Micro 32 System

camera. If not, physically place the M32 in the position in which it will be used. Next, with the transmitter unmuted, walk through the entire area that will need to be covered while speaking, singing, or playing your instrument. As you do so, you will find that the orange “A” and “B” LEDs on the M32 occasionally switch on or off, always showing you which antenna is receiving the stronger signal. The basic rule of thumb for successful wireless installations is to always try to minimize the distance between transmitter and receiver as much as possible and also to try to maintain “line of sight” between the two (so that the person using the transmitter can see the receiver antennas). You may also be able to improve RF reception by relocating the receiver or repositioning one or both of the receiver antennas.

13. Temporarily turn down the level of your mixer/amplifier system and turn off the power to your transmitter, leaving the M32 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 M32 Squelch level control. When the Squelch level control is at its minimum setting, the Micro 32 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 when the transmitter is turned off. To do so, use the provided screwdriver to rotate the Squelch level 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).

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: T32 Multipin Wiring Guide and Chart



MANUFACTURER	MODEL	PIN 1	PIN 2	PIN 3
SAMSON	ECM40	SHIELD	WHITE	JUMP TO PIN 2
SAMSON	QE/QV	SHIELD WHITE	RED	JUMP TO PIN 2
AKG	C410	SHIELD RED	WHITE	JUMP TO PIN 2
AUDIO TECHNICA	AT831	YELLOW x 2 SHIELD	RED x 2	JUMP TO PIN 2
AUDIO TECHNICA	ATM75	YELLOW x 2 SHIELD	RED x 2	JUMP TO PIN 2
AUDIO TECHNICA	ATPRO8HE	YELLOW x 2 SHIELD	N/C	RED x 2
AUDIO TECHNICA	ATPRO35X	YELLOW x 2 SHIELD	RED x 2	JUMP TO PIN 2
AUDIO TECHNICA	MT350	SHIELD	WHITE	JUMP TO PIN 2
COUNTRYMAN	ISOMAX	SHIELD	WHITE	JUMP TO PIN 2
CROWN	CM311(E)	SHIELD WHITE	RED	JUMP TO PIN 2
SENNHEISER	MKE2	SHIELD BLUE	RED	JUMP TO PIN 2
SENNHEISER	MKE40	SHIELD BLUE	RED	JUMP TO PIN 2
SENNHEISER	MKE48	SHIELD BLUE	RED	JUMP TO PIN 2
SONY	ECM44/55	SHIELD WHITE	RED	JUMP TO PIN 2
SONY	ECM77	SHIELD WHITE	RED	JUMP TO PIN 2
SONY	ECM144	SHIELD	WHITE	JUMP TO PIN 2
GUITAR		SHIELD	N/C	AUDIO
PIN INFORMATION		GROUND	+Vdc	AUDIO

Procedure for wiring T32 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: Channel Plan

Low Band (MHz):

Chan.:	0	1	2	3	4	5	6	7	8	9
Grp. 0		778.375	778.875	780.125	780.750	781.500	781.750			
Grp. 1		778.125	778.375	779.125	779.750	781.000	781.500			
Grp. 2		778.250	778.500	779.000	779.875	780.500	780.875			
Grp. 3		778.625	778.875	779.375	780.250	780.625	781.250			
Grp. 4		778.750	779.500	780.000	781.125	781.375	781.750			
Grp. 5		779.625	780.125	780.375	780.750	781.625				
Grp. 6	778.125	778.250	778.375	778.500	778.625	778.750	778.875	779.000	779.125	779.250
Grp. 7	779.375	779.500	779.625	779.750	779.875	780.000	780.125	780.250	780.375	780.500
Grp. 8	780.625	780.750	780.875	781.000	781.825	781.250	781.375	781.500	781.625	781.750
Grp. 9	781.875	782.000								

Medium Band (MHz):

Chan.:	0	1	2	3	4	5	6	7	8	9
Grp. 0		801.375	801.875	803.125	803.750	804.500	804.750			
Grp. 1		801.125	801.375	802.125	802.750	804.000	804.500			
Grp. 2		801.250	801.500	802.000	802.875	803.500	803.875			
Grp. 3		801.625	801.875	802.375	803.250	803.625	804.250			
Grp. 4		801.750	802.500	803.000	804.125	804.375	804.750			
Grp. 5		802.625	803.125	803.375	803.750	804.625				
Grp. 6	801.125	801.250	801.375	801.500	801.625	801.750	801.875	802.000	802.125	802.250
Grp. 7	802.375	802.500	802.625	802.750	802.875	803.000	803.125	803.250	803.375	803.500
Grp. 8	803.625	803.750	803.875	804.000	804.125	804.250	804.375	804.500	804.625	804.750
Grp. 9	804.875	805.000								

High Band (MHz):

Chan.:	0	1	2	3	4	5	6	7	8	9
Grp. 0	856.500	857.025	857.500	858.250	858.700	857.625	857.950	858.200	858.650	
Grp. 1	856.500	857.025	857.500	858.250	858.700					
Grp. 2	854.900	854.950	855.000	855.050	855.100	855.150	855.200	855.250	855.300	855.350
Grp. 3	855.400	855.450	855.500	855.550	855.600	855.650	855.700	855.750	855.800	855.850
Grp. 4	855.900	855.950	856.000	856.050	856.100	856.150	856.200	856.250	856.300	856.350
Grp. 5	856.400	856.450	856.500	856.550	856.600	856.650	856.700	856.750	856.800	856.850
Grp. 6	856.900	856.950	857.000	857.050	857.100	857.150	857.200	857.250	857.300	857.350
Grp. 7	857.400	857.450	857.500	857.550	857.600	857.650	857.700	857.750	857.800	857.850
Grp. 8	857.900	857.950	858.000	858.050	858.100	858.150	858.200	858.250	858.300	858.350
Grp. 9	858.400	858.450	858.500	858.550	858.600	858.650	858.700	858.750	858.800	858.850

Specifications

System Specifications:

Channels	32 per band (3 bands)
Frequency Type	F3E
Modulation Type	FM
Noise Reduction Type	Compander
Distance	100 meters from visible receiver

Transmitter (H32, T32):

Oscillation Type	Crystal-controlled PLL frequency synthesized
Modulation Type	Variable reactance
Pre-emphasis	50 μ sec
Antenna	1/4 wave length; H32: integral dipole; T32: wire (permanently attached)
Input (T32)	MIC input with phantom power, INST input jack (27 dB attenuator at MIC input terminal)
Maximum Input Level	-8 dBv
Battery	Duracell MN1604 9-volt alkaline
Battery life	8 hours @ 25° C (without phantom power)
Operating Temperature	0° C / 50° C
Switches / Controls	Power ON/OFF, Audio ON/OFF Group switch, Channel switch, Level volume
Display (LED)	Battery Low/Mid/High (corresponds to <5.3 V / 5.3 - 7 V / >7V)
Operating Voltage	9 Volts +20% / -40%
Current Consumption	55 mA
RF Output Power	10 mW
Frequency Stability	\pm 15 kHz
Spurious Ratio	1 μ W
Deviation	15 kHz (13 kHz - 17 kHz)
T.H.D. (Overall)	2% max (@1 kHz, DEV 15 kHz)
AF Frequency Response	50 Hz - 15 kHz (\pm 3.5 dB overall)
Input Impedance	H32: 100 Ohms; T32: 82. k Ohms (MIC input), 8.2 k Ohms (INST input)
Dimensions	
H32	(without microphone head) 37 mm (Dia) x 151 (H) (1.4 x 5.9 in.)
T32	102 mm (W) x 66 (H) x 24 (D) (4 x 2.6 x .9 in.)
Weight	
H32	(without battery, microphone head): 65 grams • 2.3 oz.
T32	(without battery, input cable): 80 grams • 2.8 oz.

Receiver (M32):

Oscillation Type	Crystal Controlled
Receiving Method	Single Super Heterodyne / True Diversity
De-emphasis	50 μ sec
IF Frequency	10.7 MHz
Local Frequency	70 MHz Range (79 - 79.5 MHz)
Antenna	1/4 Wavelength Rod
In/Out	5.5 DC Inlet, Balanced Output (Switchcraft TA3F mini-XLR), Unbalanced Output (3.5 mm phone jack), Headphone Output (3.5 mm phone jack)
Display (LED)	Receiver A/B (Orange), Peak (Red), RF Level / Battery Strength (3 pc)
Peak LED lighting point	AF output level approx. +4 dB
Controls	Group switch, Channel switch, Audio Level switch, Squelch volume, Headphone volume, Meter function switch
Operating Temperature	0° C / 55° C
Operating Voltage	AC adapter DC 6 - 13 Volts, 9 volts battery
Current Consumption	>60 mA (no signal, all LEDs off)
Receiving Frequency Range	778.125 - 858.850 MHz
Squelch Sensitivity	17 dB μ v \pm 4 dB
T.H.D. (Overall)	1% Max (@AF 1 kHz, RF 56 dB μ v)
Dynamic Range	95 dB (w/IF-A Filter)
AF Frequency Response	50 Hz - 15 kHz (\pm 3 dB overall)
Audio Output Level	0 dBv \pm 2 dB (Maximum +9 dBV \pm 3 dB @ 3% THD)
Audio Output Impedance	1 k Ohms max. (Unbalanced), 600 Ohms (Balanced)
Headphone Output Impedance	32 Ohms
Battery life	12 hours typical

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.**