AirLine 99M AH9
Headset Wireless Systems

SAMSON
TRUE DIVERSITY RECEIVER

READY   IR   PEAK

SET   CHANNEL

AR99M

VOLUME

OFF

AirLine

Qe Fitness Headset

DE10x Headset

OWNER'S MANUAL

SAMSON®

Important Safety Information

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug the apparatus during lightening storms, or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Service is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This appliance shall not be exposed to dripping or splashing water and that no object filled with liquid such as vases shall be placed on the apparatus.
16. Caution-to prevent electrical shock, match wide blade plug wide slot fully insert.
17. Please keep a good ventilation environment around the entire unit.
18. The direct plug-in adapter is used as disconnect device, the disconnect device shall remain readily operable.
19. Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

If you want to dispose this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling.

Private household in the 28 member states of the EU, in Switzerland and Norway may return their used electronic products free of charge to designated collection facilities or to a retailer (if you purchase a similar new one).

For Countries not mentioned above, please contact your local authorities for a correct method of disposal.

By doing so you will ensure that your disposed product undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health.

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Important Safety Information

FCC Rules and Regulations

Samson wireless receivers are certified under FCC Rules part 15 and transmitters are certified under FCC Rules part 74. 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 Part 15 of the FCC rules Class B and RSS-210 of Industry & Science Canada.

Operation is subject to the following two conditions:

(1) This device must not cause harmful interference, and

(2) This device must accept any interference received including interference that may cause undesired operation. Suitable for home or office use.

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

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced Radio/TV technician for help.

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

This equipment is intended for use in wireless microphone applications.

Equipment is intended for sale in: AT, BE, CH, CY, CZ*, DK, EE, FI*, FR*, DE*, GR*, HU, IE, IS, IT, LV, LT*, LU, MT*, NL, NO*, PL* PT, RO, SK, SI, ES, SE, UK

*Subject to license. Please contact your national frequency authority for information on available legal use in your area. Any changes or modifications not expressly approved by Samson Technologies Corp. could void your authority to operate the equipment.

Hereby, Samson Technologies Corp., declares that this AR99m and AH9 is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. The declaration of conformity may be consulted at:
http://www.samsontech.com/site_media/support/manuals/AirLine99m_AH9_DOC.pdf

Introduction

Welcome to Samson AirLine, the original micro-wireless microphone systems. Wireless microphone and instrument systems were originally developed to eliminate cables, providing unparalleled freedom of movement. AirLine 99m takes this concept to a new level with frequency agile transmitters and micro receiver, providing a completely "hassle-free" user experience.

Featuring miniaturized circuitry and an internal, rechargeable battery the AH9 can operate for up to 8 hours on a single charge. The AirLine 99m System combines an AH9 headset transmitter with a Samson Qe Fitness or DE10 low profile headset microphone.

Offering frequency-agile UHF operation, the micro-sized True RF Diversity AR99m receiver provides 100 available channels to secure reliable wireless performance. The receiver provides easy setup with 1-touch scan which analyzes and selects the clearest operating channel, infrared set to pair the transmitter with the receiver, and versatile output connections (XLR, 1/4" and 1/8"). An included USB port can be used to charge the AH9 transmitter or integrate a Samson XPD Series wireless system (sold separately) to make it a dual-receiver.

In these pages, you'll find a detailed description of the features of the AirLine 99m System, as well as step-by-step instructions for its setup and use. If your wireless system was purchased in the United States, you'll also find a registration card enclosed—don't forget to follow the instructions so that you can receive online technical support and so that we can send you updated information about this and other Samson products in the future. Also, be sure to check out our website www.samsontech.com for complete information about our full product line.

We recommend you keep the following records for reference, as well as a copy of your sales receipt:

Receiver Serial number: _____

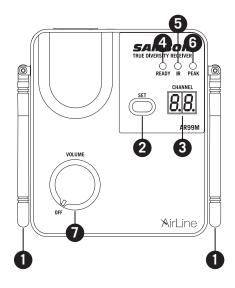Transmitter Serial number: _____

Date of purchase: _____

If you have any questions or comments regarding the AirLine 99m Microphone System or any other products from Samson, do no hesitate to contact us at **support@samsontech.com**.
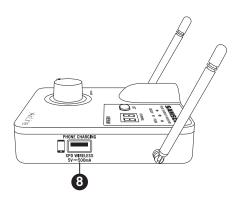
With proper care and maintenance, your AirLine 99m System will operate trouble-free for many years. Should your AirLine 99m System ever require servicing, a Return Authorization (RA) number must be obtained before shipping your unit to Samson. Without this number, the unit will not be accepted. Please visit **www.samsontech.com/ra** for an RA number prior to shipping your unit. Please retain the original packing materials and, if possible, return the unit in its original carton. If your AirLine 99m System was purchased outside of the United States, contact your local distributor for warranty details and service information.
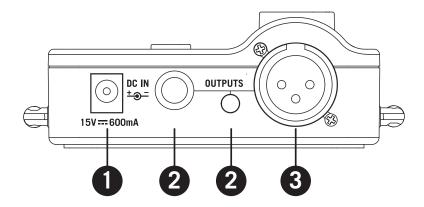
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AR99m Receiver Features

1. **Antennas -** 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 AR99m.

2. **SET Button -** Press this button to scan through the receiver's 100 operating channels to find the optimal channel for performance. Once the scan is complete, the AR99m will enter IR Set mode and send the selected channel to the transmitter.

3. **LED Display -** The two digit, 7-segment LED display shows the receiver's current operating channel.

4. **READY Indicator -** This indicator lights green when the CR99m is receiving RF signal and the system is ready to use.

5. **IR Transmitter -** During "IR SET" an infrared light is used to set the transmitter channel.

6. **PEAK Indicator -** This indicator lights red when the transmitted audio signal is overloaded.

7. **VOLUME / Power Control -** This rotary knob controls the level of the receiver output and powers the AR99m on and off. Turn the control clockwise to turn the system on. Turn the knob counterclockwise until it clicks to turn the system off.

8. **USB Port -** This USB port provides 5V 200mA of power which can be used to charge the AH9 headset transmitter or a small portable USB device like an MP3 player or smartphone (AR99m only pass power to the USB port when the power is ON). It can also be used to connect an optional Samson XPD USB Digital Wireless receiver to this input, turning the AR99m into a dual wireless system.
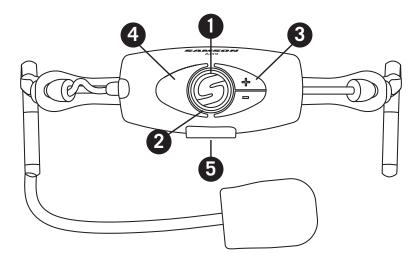
AR99m Receiver Features Rear Panel

1. **DC Input -** Connect the supplied power adapter here.
    WARNING: Do not substitute any other kind of power adapter. Doing so can cause severe damage to the AR99m and will void your warranty.

2. **UNBALANCED OUTPUTS -** Use these unbalanced 1/4" and 1/8" jacks when connecting the AR99m to consumer (-10 dBV) audio equipment. Wiring is as follows: tip hot, sleeve ground.

3. **BALANCED OUTPUT -** Use this electronically balanced low impedance (600 Ohm) XLR jack when connecting the AR99m to professional (+4 dBu) audio equipment. Pin wiring is as follows: Pin 1 ground, Pin 2 high (hot), and Pin 3 low (cold).

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AH9 Headset Transmitter Callouts

1. **Power/Mute Button -** Press and hold for 3 seconds to turn the unit on or off. A quick press and release will mute or un-mute the transmitter when the transmitter is on.

2. **Status Indicator -** This LED displays the operation mode, low battery and recharge status of the transmitter. The chart below defines the LED colors for each function.

GREEN	Normal Operation
AMBER	Mute
Flashing RED	Low Battery
	Charging
RED	Fully Charged

3. **Volume +/– Buttons -** Press and hold either Volume button to adjust the volume. Pressing the + or – button increases or decrease the level by one step with each push of the button. There is a total 9 volume levels. The Status Indicator light will flash faster for each increased step and slower for each decrease.

4. **IR Lens -** This window is used to capture the infrared signal sent from the receiver during the IR SET to channelize the transmitter. The IR Lens is only active for the first 10 seconds when the transmitter is powered on.

5. **Charging Connector -** Connect the supplied magnetic charging cable to this sealed, gold contact charging connector to recharge the internal Lithium Ion battery. The AH9 can be recharged by connecting the cable to the USB connector on the AR99m reciever or any 5-volt DC adapter that has a USB output.
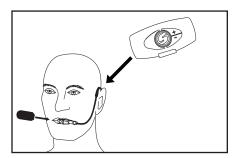
Wearing the AH9 Headset Microphone

As shown in the illustration, the correct way to wear your Qe fitness headset microphone, is over the ears, as you would wear a pair of eyeglasses. Because the Qe microphone is specially designed to be used up close, be sure to position the microphone directly in front of your lips. To avoid feedback problems, take care not to cover the microphone capsule with your hand.
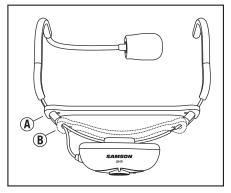
Position the headset over your head so that the body of the transmitter is behind your head. Adjust the headset so that it fits comfortably on your ears and is secure against your head.

Note: If wearing glasses, it is recommended to put the AH9 transmitter on first than place glasses over the transmitter.

For added comfort and fit, the headset includes an adjustable headband. To fit the headband, pull elastic strap over the ear hooks and locate in front of the stop point (A). For larger sizing, the headband can be moved behind the stop point (B) or completely removed by sliding the elastic band over the ear hooks and microphone capsule.
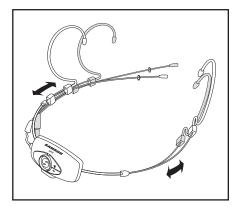
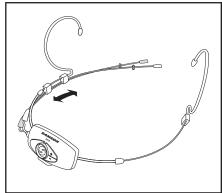*Note: When removing the headband, first take off the microphone windscreen.*

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DE10 Headset

Fitting the DE10 Headset

The DE10 headset can be sized by sliding the ear hooks to fit snug around your head. If the DE10 is loose and will not stay in place, slide the ear hook wires back for a tighter fit.
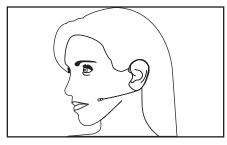
Adjust the microphone position by holding the left ear hook wire and slide the boom forward or back. For optimum performance the microphone should be close to the skin and towards the corner of the mouth, approximately a half inch away.

Position the moisture guard ring as close to the capsule as possible.

For outdoor use and to help reduce p-popping, use the included windscreens.

Mic Positioning

Position the DE10 microphone element about 0.25" – 1" behind the corner of your mouth. Since the DE10 is an omnidirectional capsule, the end of the microphone does not need to be facing your mouth. To avoid breadth noise and p-pops, do not place the microphone directly in front of your mouth.

If the microphone is too far away from your mouth you will need to increase the gain and reduce isolation.

To minimize additional noise, do not locate the microphone tight against your cheek.

Quick Start

In order for your wireless system to work correctly, both the receiver and transmitter must be set to the same channel. Follow this basic procedure for setting up your AirLine 99 wireless system:

1. Physically place the AR99m receiver where it will be used, and extend the antennas vertically. 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.

2. Ensure that the AH9 transmitter is fully charged (see section Charging the AH9 Transmitter).

3. With the AR99m powered off, connect the included power adapter.

4. With your amplifier or mixer off and volume control all the way down, connect the AR99m receiver output jack to the mic or line level input of a mixer or amplifier using the balanced XLR output or unbalanced 1/4" or 1/8" line level outputs. Turn the VOLUME knob on the AR99m clockwise to turn its power on, but keep the level low.

5. Press and hold the SET button on the front of the AR99m receiver to scan for an available channel. Once the optimal channel is selected the receiver will enter IR Set mode (figure 1).

6. Turn on the power to the AH9 transmitter by pressing and holding the Power button for 3 seconds; the indicator LED will light yellow when the button is pressed and turns green when released and the AH9 is powered on.

7. Position the AH9 transmitter about 6-12" (15-30 cm) from the front of the AR99m with the transmitter's IR window facing the IR transmitter on the front panel of the AR99m receiver (figure 2).

8. When the transmission of the operating channel is complete, the AR99m will receive RF signal and the READY indicator will light indicating that it is receiving wireless signal from the transmitter.
Note: The AH9 will only accept infrared transmission from the receiver for the first 10 seconds after the AH9 is powered on. If you need to change the operating channel, the AH9 must be first powered off, then powered on again to receive the new channel.

9. Turn on your connected amplifier or mixer, but keep the volume all the way down. Set the Volume knob on the AR99m fully clockwise. This is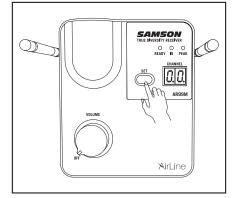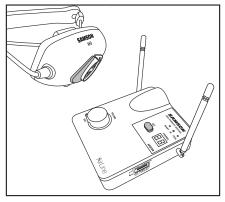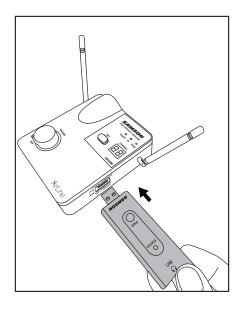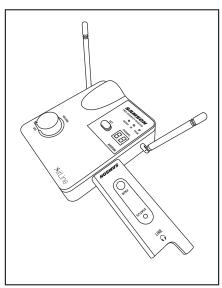 unity gain. Speak or sing into the microphone at normal performance level. Slowly raise the volume of your amplifier or mixer until the desired level is reached.

10. When using multiple systems, each system must be set to a different operating channel. Follow these steps to set each receiver and transmitter to the optimal channel.

Figure 1

Figure 2

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Connecting XPD Wireless

1. Plug the XPD USB receiver into the USB jack on the side of the AR99m receiver.

2. Place a fresh set of AA (LR6) batteries in the transmitter battery holder, taking care to observe the polarity markings.

3. Turn the AR99m receiver on by rotating the VOLUME control clockwise. The AR99m VOLUME control will affect the mix of the AH9 and XPD transmitters.

4. Turn on the power to the XPD transmitter by pressing and holding Power switch; the indicator LED will light amber.

5. If the transmitter and receiver have not been previously paired, press and hold the button on the XPD receiver for >5 seconds, until it begins to flash. Press and continue to hold the Power button on the transmitter until the LED indicators on both units light steady, indicating that the receiver and transmitter are paired and ready for operation.

6. Speak or sing into the microphone at a normal performance level and raise the AR99m VOLUME control until the desired level is reached.

7. To balance the level between the AH9 and XPD transmitter, use the supplied screwdriver to adjust the Gain control inside the XPD battery compartment. If you hear distortion from the XPD transmitter turn down the Gain. Conversely, if you hear a weak, noisy signal at the desired volume level, turn the Gain control in the XPD transmitter slowly clockwise until the signal reaches an acceptable level.
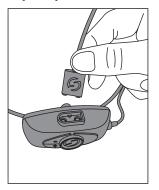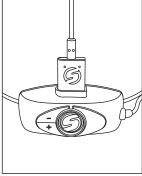
AirLine 99m Wireless System

Charging the AH9 Transmitter

1. With the AR99m powered off, connect the included power adapter.

2. Insert the magnetic power cable to the AR99m USB Port (or any 5-volt DC adapter that has a USB port).

3. Turn the VOLUME knob on the AR99m clockwise to turn its power on.

4. Place the AH9 transmitter on a flat surface.

5. Attach the magnetic connector to the gold contact power port on the bottom of the AH9 transmitter. The cable attaches to the port magnetically.
    The magnetic connector is keyed so it will only connect in one direction.

    Note: Transmission is disabled during charging.

6. Look at the indicator light on the AH9 transmitter to determine when the transmitter has finished charging. When the light is flashing red, the AH9 is charging. When the red light stops flashing it indicates that the AH9 is fully charged.

7. Disconnect the magnetic power cable from the AH9 when the unit is fully charged.

If you notice your AH9 battery life is becoming shorter after a full charge, you can order a user replaceable battery from your local Samson distributer.

Getting the most out of the rechargeable battery:

•   Completely charge the batteries before first use

•   Fully charge the battery before it will be used.

•   After the battery is charged, unplug the charger from the outlet.

•   The optimal temperature range for using and storing the battery is 50°F - 86°F (30°C - 50°C). The battery performance and operation may decrease in temperatures below 50°F (30°C).

A warning that batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type. Attention should be drawn to the environmental aspects of battery disposal

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Specifications

System

Working Range	300' (100m) line of sight
Audio Frequency Response	50 Hz - 15 kHz
T.H.D. (Overall)	<1% (@AF 1 kHz, RF 46 dBu)
Dynamic Range	>100 dB A-weighted
Signal to Noise	>95 dB
Operating Temperature	−10°C (14°F) to +60°C (+140°F)
Tone Key Frequency	35 kHz

AH9 Transmitter

Input Gain Range	20dB
RF Power	10mW EIRP
Power Requirements	3.6V 500mAh Lithium Ion rechargeable battery
Battery Life	8 hours
Dimensions (LxWxH)	5.9" x 6.7" x 3.9" 150mm x 170mm x 100mm
Weight	0.13lb / 60g

AR99m Receiver

Audio Output Level	
1/8" (3.5mm) & 1/4" (6.3mm) jack (unbalanced)	+14dBu
XLR jack (balanced)	+9dBu
Audio Output Impedance	
1/8" (3.5mm) & 1/4" (6.3.mm) jack (unbalanced)	810 Ohms,
XLR output jack (balanced)	240 Ohms
Sensitivity	100dBm/30dB SINAD
Image Rejection	>50dB
Operating Voltage	15VCC 600mA
Dimensions (LxWxH)	4.3" x 3.74" x 1.5" 110mm x 95mm x 39mm
Weight	0.42lb / 192g

At Samson, we are continually improving our products, therefore specifications and images are subject to change without notice.

Channel Plans

Group K 470–494MHz									
CH	MHz	CH	MHz	CH	MHz	CH	MHz	CH	MHz
00	470.125	20	474.625	40	479.125	60	483.625	80	488.125
01	470.350	21	474.850	41	479.350	61	483.850	81	488.350
02	470.575	22	475.075	42	479.575	62	484.075	82	488.575
03	470.800	23	475.300	43	479.800	63	484.300	83	488.800
04	471.025	24	475.525	44	480.025	64	484.525	84	489.025
05	471.250	25	475.750	45	480.250	65	484.750	85	489.250
06	471.475	26	475.975	46	480.475	66	484.975	86	489.475
07	471.700	27	476.200	47	480.700	67	485.200	87	489.700
08	471.925	28	476.425	48	480.925	68	485.425	88	489.925
09	472.150	29	476.650	49	481.150	69	485.650	89	490.150
10	472.375	30	476.875	50	481.375	70	485.875	90	490.375
11	472.600	31	477.100	51	481.600	71	486.100	91	490.600
12	472.825	32	477.325	52	481.825	72	486.325	92	490.825
13	473.050	33	477.550	53	482.050	73	486.550	93	491.050
14	473.275	34	477.775	54	482.275	74	486.775	94	491.275
15	473.500	35	478.000	55	482.500	75	487.000	95	491.500
16	473.725	36	478.225	56	482.725	76	487.225	96	491.725
17	473.950	37	478.450	57	482.950	77	487.450	97	491.950
18	474.175	38	478.675	58	483.175	78	487.675	98	492.175
19	474.400	39	478.900	59	483.400	79	487.900	99	492.400

Group D** 542–566MHz									
CH	MHz	CH	MHz	CH	MHz	CH	MHz	CH	MHz
00	542.125	20	546.625	40	551.125	60	555.625	80	560.125
01	542.350	21	546.850	41	551.350	61	555.850	81	560.350
02	542.575	22	547.075	42	551.575	62	556.075	82	560.575
03	542.800	23	547.300	43	551.800	63	556.300	83	560.800
04	543.025	24	547.525	44	552.025	64	556.525	84	561.025
05	543.250	25	547.750	45	552.250	65	556.750	85	561.250
06	543.475	26	547.975	46	552.475	66	556.975	86	561.475
07	543.700	27	548.200	47	552.700	67	557.200	87	561.700
08	543.925	28	548.425	48	552.925	68	557.425	88	561.925
09	544.150	29	548.650	49	553.150	69	557.650	89	562.150
10	544.375	30	548.875	50	553.375	70	557.875	90	562.375
11	544.600	31	549.100	51	553.600	71	558.100	91	562.600
12	544.825	32	549.325	52	553.825	72	558.325	92	562.825
13	545.050	33	549.550	53	554.050	73	558.550	93	563.050
14	545.275	34	549.775	54	554.275	74	558.775	94	563.275
15	545.500	35	550.000	55	554.500	75	559.000	95	563.500
16	545.725	36	550.225	56	554.725	76	559.225	96	563.725
17	545.950	37	550.450	57	554.950	77	559.450	97	563.950
18	546.175	38	550.675	58	555.175	78	559.675	98	564.175
19	546.400	39	550.900	59	555.400	79	559.900	99	564.400

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Channel Plans

Group G* 863–865MHz									
CH	MHz	CH	MHz	CH	MHz	CH	MHz	CH	MHz
00	863.050	07	864.950	14	864.800	21	864.650	28	864.400
01	863.550	08	863.100	15	863.300	22	864.850	29	864.700
02	863.750	09	863.600	16	863.150	23	863.350	30	864.900
03	864.050	10	863.800	17	863.650	24	863.200	31	863.400
04	864.250	11	864.100	18	863.850	25	863.700		
05	864.550	12	864.300	19	864.150	26	863.900		
06	864.750	13	864.600	20	864.350	27	864.200		

Not for use in the USA and Canada.
*** Not for use in the EU.*
For questions regarding available channels in your area contact your local Samson distributor.

**Having Trouble with your AirLine Wireless System?
We can help!**

**CONTACT OUR SUPPORT TEAM: support@samsontech.com
Our experts can help you resolve any issues.**

Follow us:

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