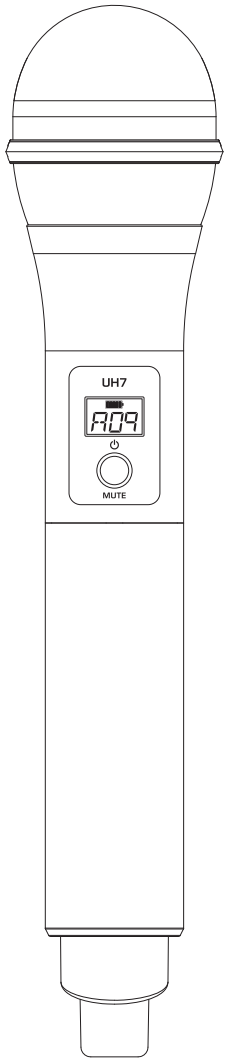
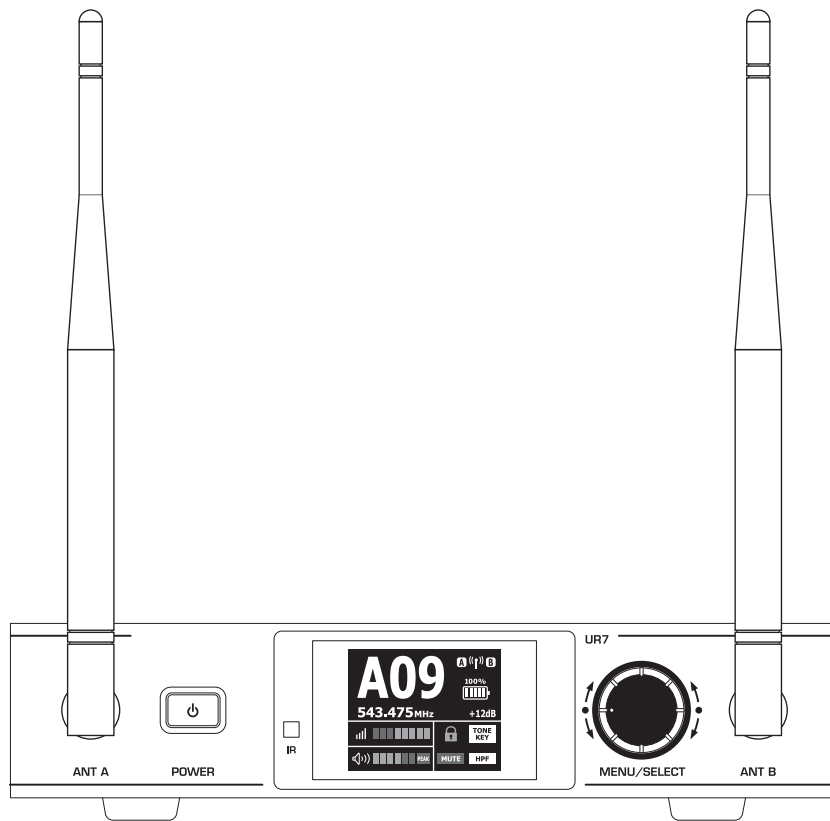


Wireless Microphone System

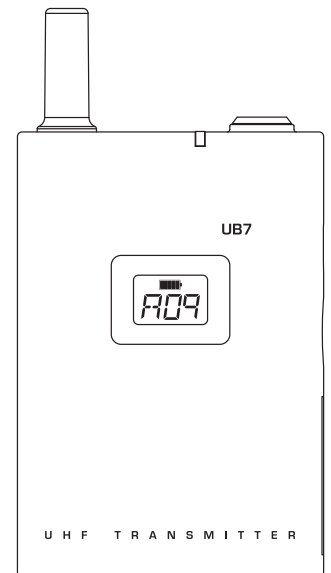
Synth 7(RX: UR7; TX: UH7; TX: UB7)



UH7



UR7



UB7

OWNER'S MANUAL

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.

Introduction

Congratulations on purchasing the Samson Synth 7 wireless system. The Synth 7 is the ideal solution for the active performer who needs a reliable, great sounding system for wireless applications.

Synth 7 system features all-metal components with easy-to-read displays and advanced menu functions for seamless operation. The Synth 7 comes in five configurations. The vocal handheld system includes the UH7 handheld transmitter with a Q8 dynamic microphone capsule. The UB7 belt pack system can be configured with either the SE10 earset microphone, LM10 lavalier microphone, QV vocal headset microphone or a ¼" instrument cable. For travel or permanent installation, the Synth 7 includes a standard 19" rackmount kit.

In these pages, you'll find a detailed description of the features of the Synth 7 wireless system, step-by-step instructions for its setup and use, as well as full specifications. If your wireless 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 in 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: _____

Dealer name: _____

With proper care and maintenance, your Synth 7 wireless system will operate trouble-free for many years. Should your wireless 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 call Samson at 1-800-3SAMSON (1-800-372-6766) 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 Synth 7 system was purchased outside of the United States, contact your local distributor for warranty details and service information.

Features

- Professional true-diversity UHF wireless systems
- Scan Mode and on screen spectrum analyzer finds optimal channels for interference-free performance
- Pilot Tone Squelch/Auto Mute function eliminate RF noise when the transmitter is muted
- Increased dynamic range to handle the hottest inputs
- Full-color receiver LCD
- Transmitter LCD indicates battery level and channel number
- Transmitter offers up to 15 hours of continuous operation on two AA batteries
- 300-foot operating range
- All-metal, rack mountable components ensure roadworthy durability

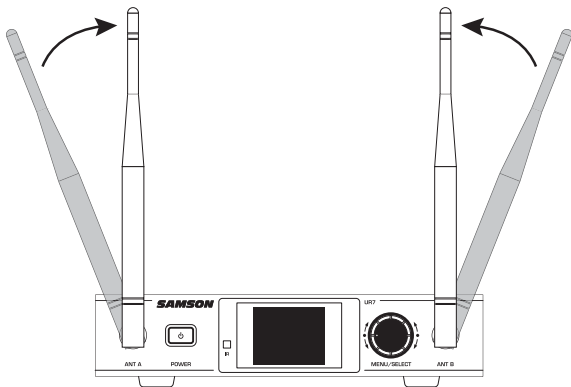
Quick Start

In order for your wireless system to work correctly, both the receiver and transmitter must be set to the same channel.

Set up the receiver:

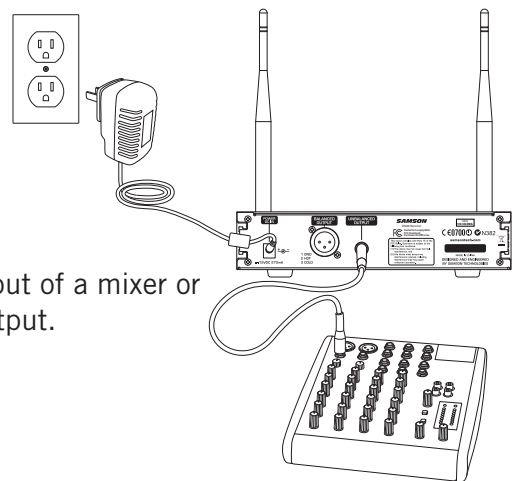
Physically place the UR7 receiver where it will be used. The general rule of thumb is to maintain “line of sight” between the receiver and transmitter so that the person using or wearing the transmitter can see the receiver.

Connect and position the antennas vertically.



Connect the included power adapter to an outlet.

Connect the UR7 receiver output jack to the microphone or line level input of a mixer or amplifier using the balanced XLR output or unbalanced 1/4" line level output.



Setting the receiver channel - When using a single system, set the receiver by using the Frequency Select menu. When using multiple Synth 7 systems, use the Group & Channel menu so that each system should be assigned to the same group in order to maximize the number of compatible channels

Single System Setup

Press and hold the power button to turn on the UR7 receiver. The receiver display will light.

Press the Menu/Select button to enter the Main Menu. Rotate the Menu/Select encoder to highlight **FREQUENCY SELECT** and press the MENU/SELECT button.

Scroll down to highlight **SCAN SPECTRUM** and press the MENU/SELECT button. The receiver will scan the wireless spectrum and choose an available channel.



Quick Start

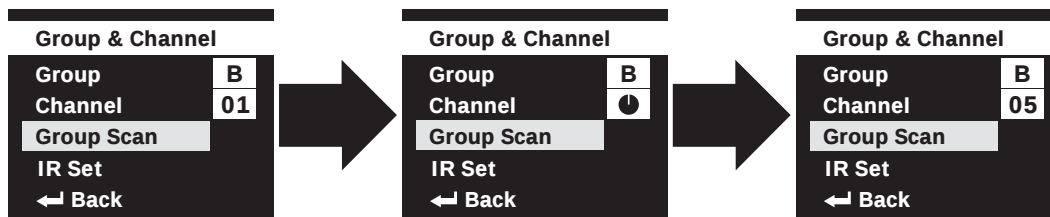
Multiple System Setup

Press and hold the power button to turn on the UR7 receiver.

Press the Menu/Select button to enter the Main Menu. Rotate the Menu/Select encoder to highlight GROUP & CHANNEL and press the MENU/SELECT button to enter the menu.

Set each receiver to the same Group. Select GROUP and press the MENU/SELECT button. The Group letter will start to flash. Rotate the MENU/SELECT encoder until you have selected the desired group and press the MENU/SELECT button to set the receiver Group.

Select GROUP SCAN and press the MENU/SELECT button. The UR7 receiver will scan the selected Group for an available channel.



Set the transmitter:

Install two fresh AA batteries into the UB7 belt pack or UH7 handheld transmitter. Press and hold the power button to turn on the transmitter.

On the UR7 receiver scroll down to IR SET and press the MENU/SELECT button.

Position the transmitter about 6-12" (15-30 cm) from the front of the UR7 receiver with the transmitter's IR window facing the IR transmitter on the front panel of the receiver. The UH7 transmitter IR window is inside the battery compartment. The IR windows on the UB7 is next to the LCD display.

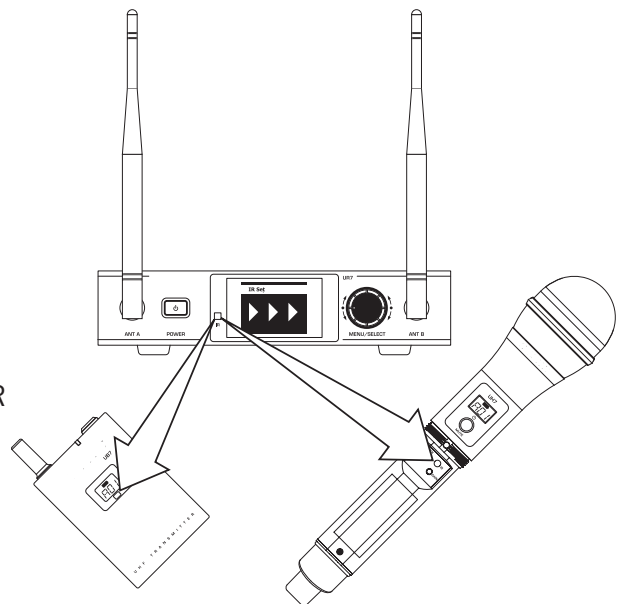
When the transmission is complete, select BACK or press the power button on the UR7 receiver to return to the main performance display.

Once a transmitter and receiver pair is set, leave the transmitter powered on and locked before scanning the group for the next available channel. This will prevent the receiver from selecting a channel that will cause interference.

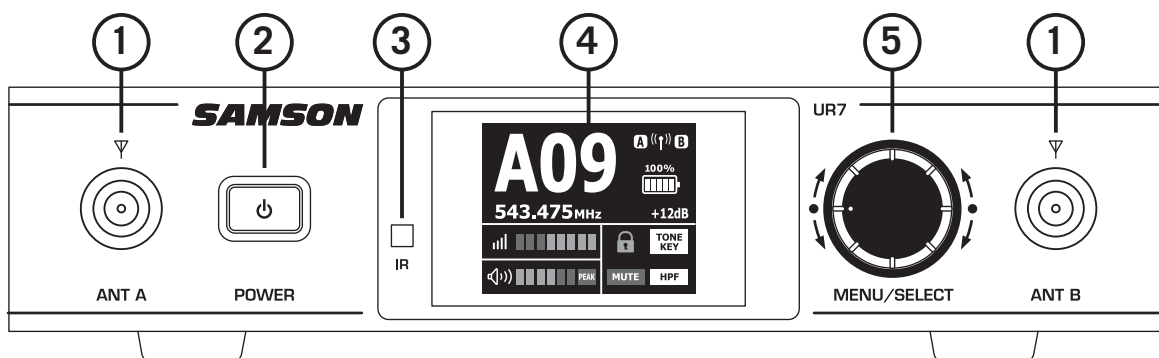
Set the performance level

Speak or sing into the microphone, or if you are using the transmitter with a connected instrument, play the instrument at normal performance level. Slowly raise the volume of your amplifier or mixer until the desired level is reached.

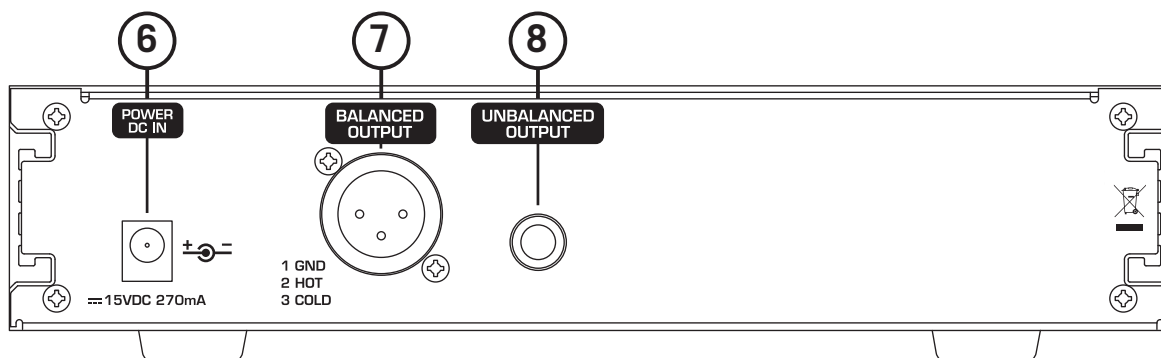
If you find the system has noticeable dropouts, reduced overall working range, or unexpected noise bursts, change the operating channel of the system using the steps above.



UR7 Receiver Callouts



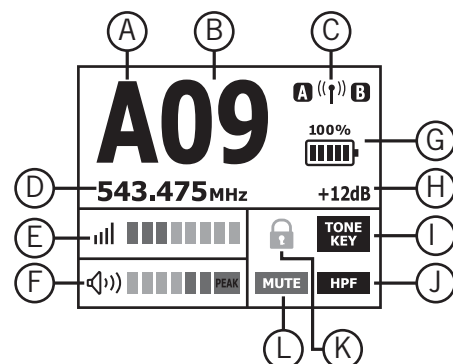
- 1. Antennas Jacks** - The BNC antenna jacks allow full rotation for optimum placement. In normal operation, both antennas should be placed in a vertical position.
- 2. POWER Switch** - Press and hold this to power the receiver on or off. A quick press of the button will move back through the menus.
- 3. IR Transmitter** - During “IR SET” an infrared code (similar to selecting a channel with a TV remote) is used to set the transmitter channel.
- 4. Color LCD** - Displays transmitter and receiver settings and performance data.
- 5. MENU/SELECT Control** - This rotary encoder control knob/button is used to control and set menu functions and parameters.



- 6. 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 UR7 and will void your warranty.
- 7. XLR BALANCED OUTPUT** - Electronically balanced, microphone-level output.
- 8. 1/4" UNBALANCED OUTPUT** - Unbalanced high impedance instrument-level output.

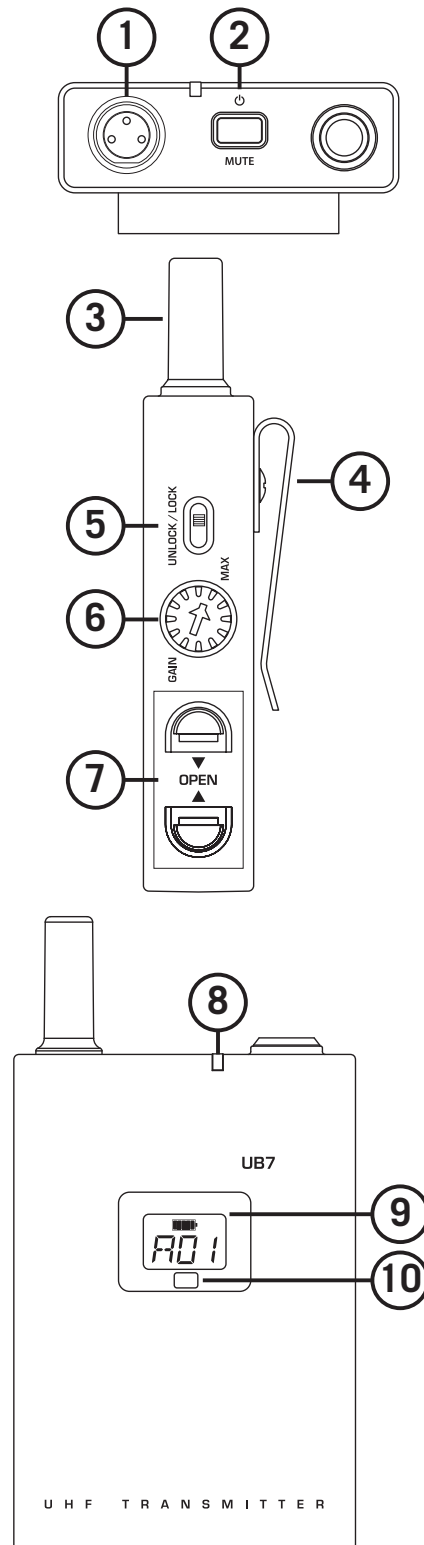
LCD Display

- | | |
|-----------------------------|----------------------------------|
| A. Group | G. Transmitter Battery Indicator |
| B. Channel | H. Receiver Audio Output Level |
| C. Active Antenna Indicator | I. Tone Key Active Indicator |
| D. Operating Frequency | J. High Pass Filter Indicator |
| E. RF Signal Meter | K. Receiver Lock |
| F. Audio Meter | L. Transmitter Mute Indicator |



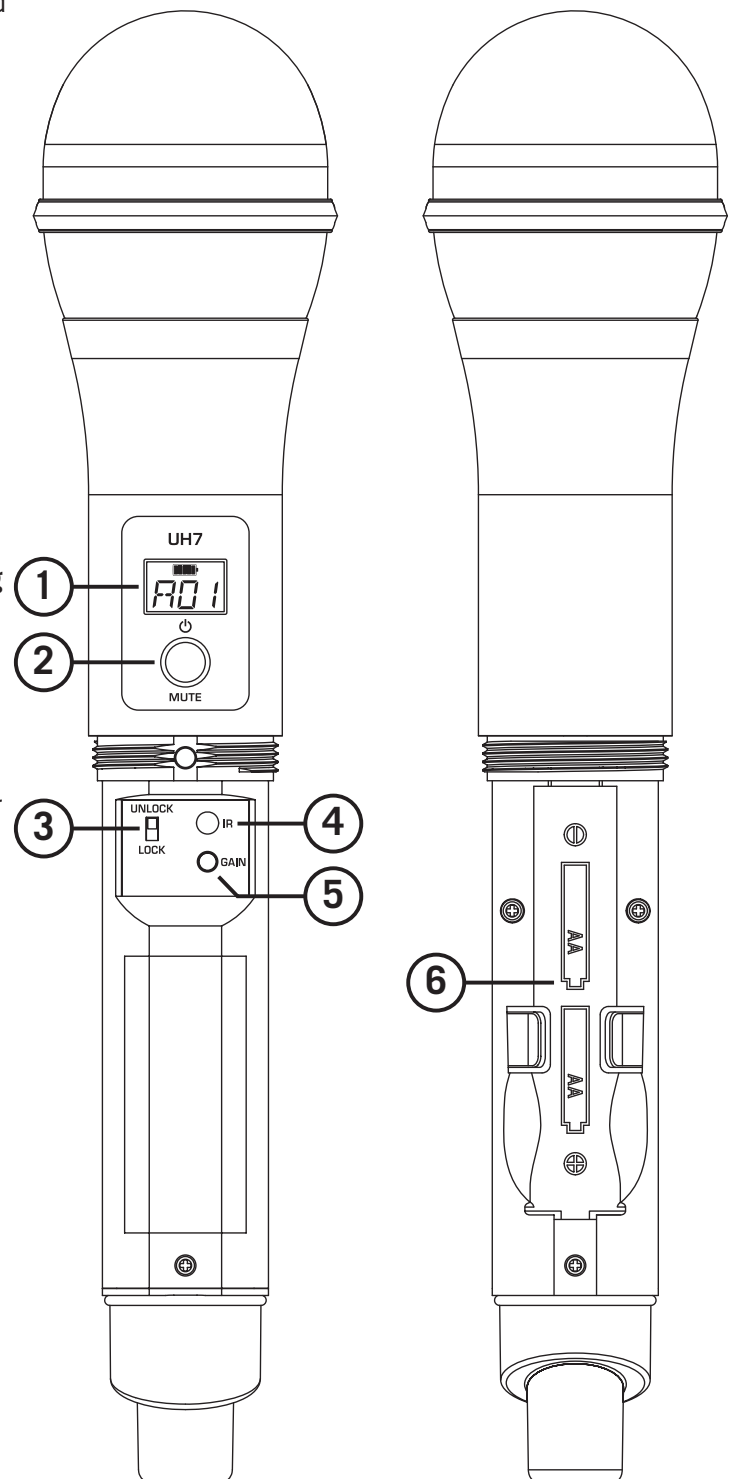
UB7 Callouts

1. **Input Connector** - Connect the input device via the mini-XLR connector.
2. **Power/Mute Switch** - Press and hold to turn the unit on or off. Press and release to mute or unmute the transmitter.
3. **Antenna** - Permanently attached transmitter antenna.
4. **Belt Clip** - Use this clip to fasten transmitter to a belt or guitar strap.
5. **UNLOCK/LOCK Switch** - Locking the system controls prevents accidental muting or channel adjustment during performance.
6. **Input GAIN Control** - This control adjusts the transmitter input sensitivity to work with microphone and instruments input signals. For optimal performance set the input GAIN control to where you see the UR7 PEAK indicator start to light under high levels, then turn down slowly until the PEAK light stops lighting or only occasionally flashes during the loudest input each channel will see
7. **Battery Holder** - Insert two standard AA (LR6) batteries here, being sure to observe the plus and minus polarity markings shown. Although rechargeable Ni-Cad batteries can be used, they do not supply adequate current for more than four hours.
WARNING: Do not insert the batteries backwards; doing so can cause severe damage to the UR7 and will void your warranty.
8. **Status Indicator** - This LED lights green when the transmitter is powered, and lights red when the transmitter is muted.
9. **LCD Display** - Displays the group, channel and battery level information.
10. **IR Lens** - This window is used to capture the infrared signal sent from the UR7 during the IR SET to channelize the transmitter.



UH7 Callouts

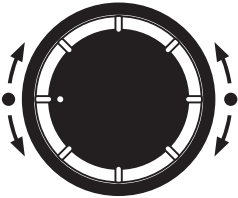
1. **LCD Display** - Displays the current group, channel and battery level information.
2. **Power/Mute Switch** - Press and hold to turn the unit on or off. Press and release to mute or un-mute the transmitter.
3. **UNLOCK/LOCK Switch** - Locking the system controls prevents accidental muting or channel adjustment during performance.
4. **Battery Holder** - Open the battery holder by pressing the tab and lifting the cover. Insert two standard AA (LR6) batteries here, being sure to observe the plus and minus polarity markings shown. Although rechargeable Ni-Cad batteries can be used, they do not supply adequate current for more than four hours.
WARNING: Do not insert the batteries backwards; doing so can cause severe damage to the UH7 and will void your warranty.
5. **IR Lens** - This window is used to capture the infrared signal sent from the UR7 during the IR SET to channelize the transmitter. The battery cover must be open and the IR Lens facing towards the receiver to load the selected channel.
6. **Input GAIN Button** - This control adjusts the transmitter input sensitivity. Press to set the gain setting. For optimal performance, set the input GAIN control to where you see the UR7 PEAK indicator start to light under high levels, then turn down until the PEAK light stops lighting.



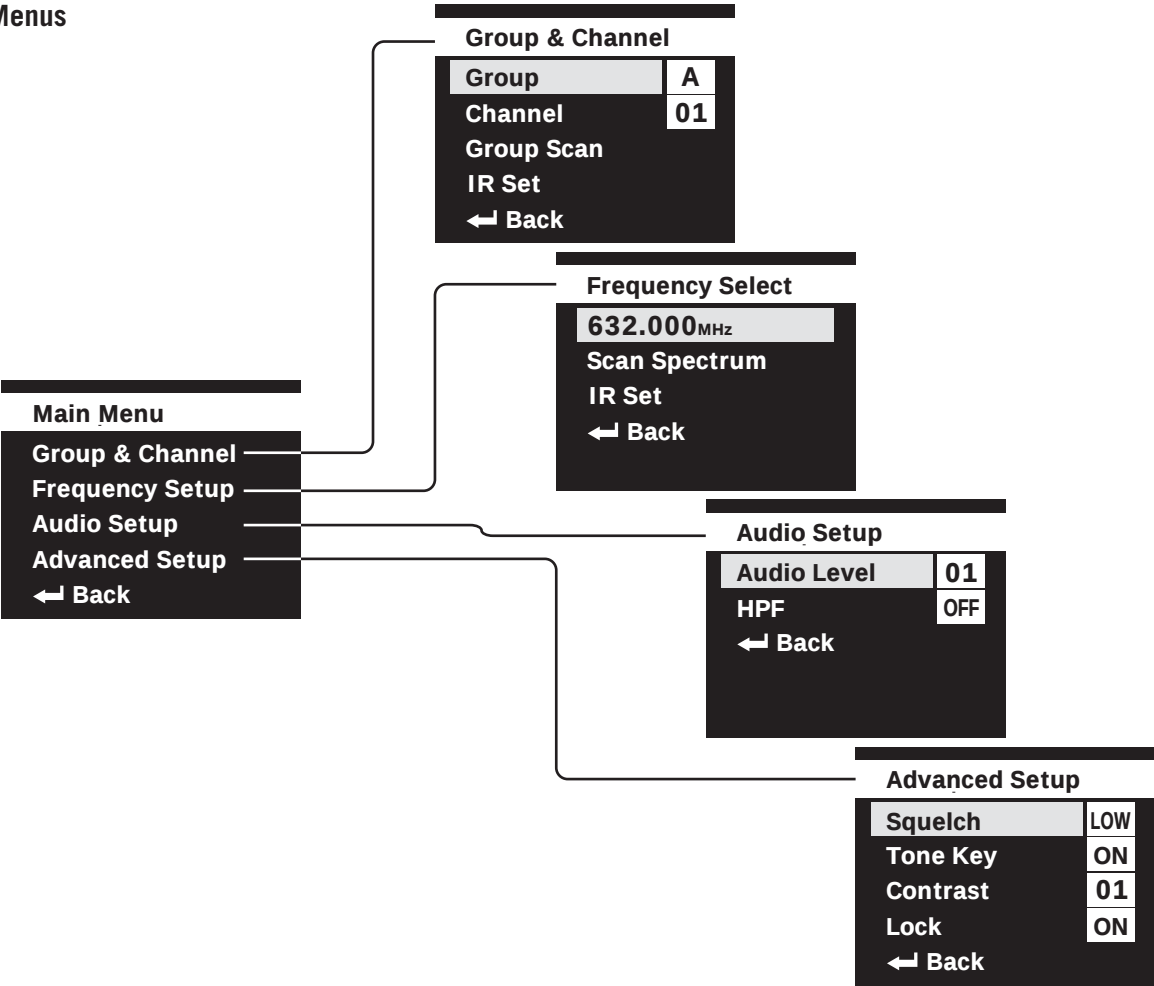
UR7 Operating Menu

The UR7 receiver features a user friendly operating menu, with extensive features and adjustable parameters. This enables the receiver and transmitter to be quickly and easily set up for performance.

Controls

POWER Button  POWER	Press and hold switches the receiver on and off
	Short press cancels an entry and returns to the current menu
	Short press moves back through the menus.
MENU/SELECT Encoder and Button  MENU/SELECT	Press to enter the menus
	Enters a sub-menu
	Selects a parameter to be adjusted
	Confirms and stores a setting and returns to the current menu
	Rotate to cycle through available menu selections
	Rotate to cycle through available parameter

Operating Menus



Menu Parameters

Group & Channel

Group	Manually adjusts the operating Group
Channel	Manually adjusts the channel with the selected Group
Group Scan	Scans the current selected group channels and selects the cleanest signal to use for optimal performance
IR Set	Sends the group and channel information to the UH7 and UB7 transmitters via the infrared set.

Group & Channel	
Group	A
Channel	01
Group Scan	
IR Set	
← Back	

Frequency Select

Frequency	Manually adjust the operating frequency of the UR7 receiver.
Scan Spectrum	Scans the entire frequency band of the UR7 receiver and selects the cleanest signal to use for optimal performance.
IR Set	Sends the operating frequency information to the UH7 and UB7 transmitters via the infrared set.

Frequency Select	
632.000 ^{MHz}	
Scan Spectrum	
IR Set	
← Back	

Audio Setup

Audio Level	Sets the level of the audio signal being output through both the balanced and unbalanced output jacks on the rear panel.
HPF	Enables a high pass filter on the audio output. This is useful when using the receiver with a handheld microphone to reduce lower frequencies that you do not want the microphone to pick up. It is useful for removing stage rumble.

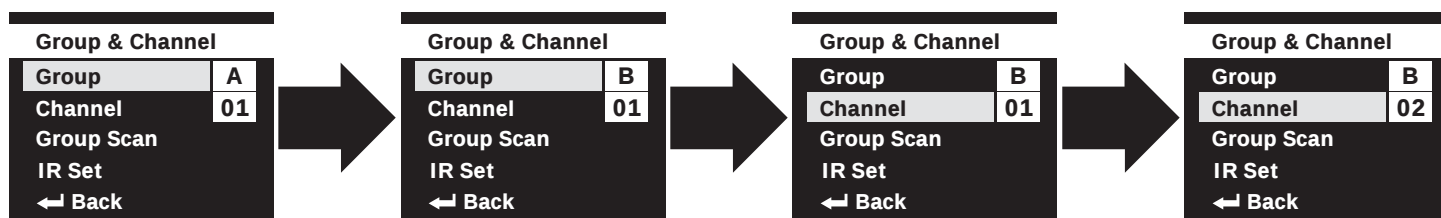
Audio Setup	
Audio Level	01
HPF	OFF
← Back	

Advanced Setup

Squelch	Adjusts the squelch threshold
Tone Key	Enables or disables the Tone Key. This is useful when setting up the system to. During normal operation the Tone Key should be enabled.
Contrast	Adjusts the contrast of the receiver display.
Lock	Locks the controls of the receiver.

Advanced Setup	
Squelch	LOW
Tone Key	ON
Contrast	01
Lock	ON
← Back	

Group & Channel Menu



From the main performance page, press the MENU/SELECT button to enter the Main Menu.

With GROUP & CHANNEL highlighted, press the MENU/SELECT button to enter the GROUP & CHANNEL sub-menu.

Setting Group and Channel

Rotate the cursor to select the GROUP parameter.

Press the MENU/SELECT button to adjust the setting.

Rotate the MENU/SELECT knob to adjust the group letter.

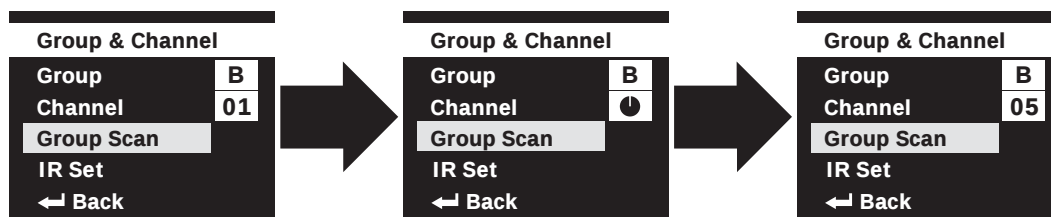
Press the MENU/SELECT button to confirm and store the setting or press the POWER button to cancel the selection and move back to the GROUP & CHANNEL sub-menu.

Rotate the cursor to select the CHANNEL parameter.

Press the MENU/SELECT button to adjust the setting.

Rotate the MENU/SELECT knob to adjust the channel number.

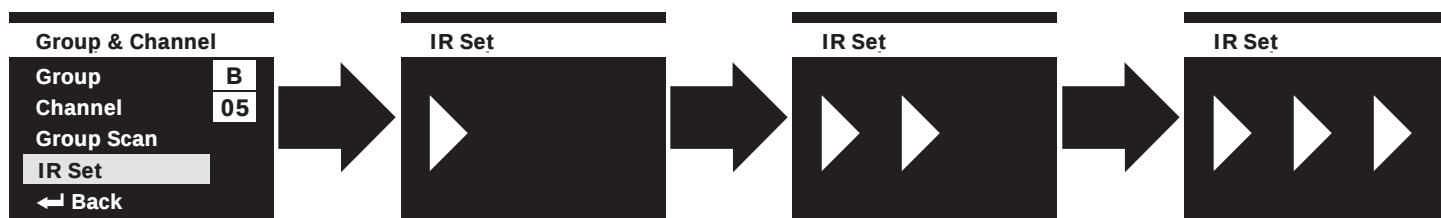
Press the MENU/SELECT button to confirm and store the setting or press the POWER button to cancel the selection and move back to the GROUP & CHANNEL sub-menu.



Scan the Group for a clear channel

Rotate the cursor to select the SCAN GROUP parameter.

Press the MENU/SELECT button to activate the scan function.



Set the transmitter group and channel

Rotate the cursor to select the IR SCAN parameter.

Press the MENU/SELECT button to activate the IR SET function. While the IR SET is in progress, position the transmitter about 6-12" (15-30 cm) from the front of the UR7 receiver with the transmitter's IR window facing the IR transmitter on the front panel of the receiver.

Frequency Select Menu



From the main performance page, press the MENU/SELECT Button to enter the Main Menu.

With FREQUENCY SETUP highlighted, press the MENU/SELECT button to enter the FREQUENCY SETUP sub-menu.

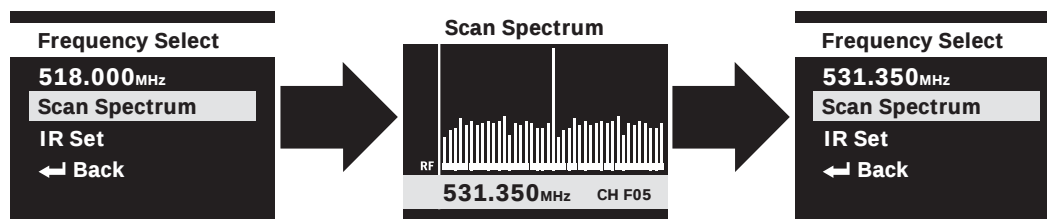
Setting the Operating Frequency

Rotate the cursor to select the Frequency parameter.

Press the MENU/SELECT button to adjust the setting.

Rotate the MENU/SELECT knob to adjust the performance frequency.

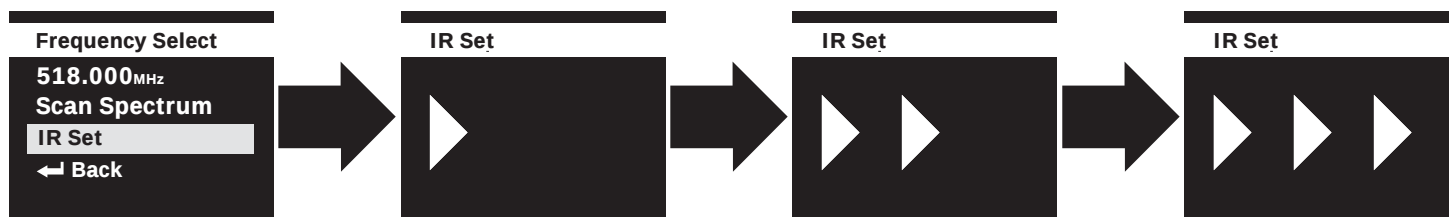
Press the MENU/SELECT button to confirm and store the setting or press the POWER button to cancel the selection and move back to the FREQUENCY SETUP sub-menu.



Scan the frequency band for a clean channel

Rotate the cursor to select the SCAN SPECTRUM parameter.

Press the MENU/SELECT button to activate the scan function.

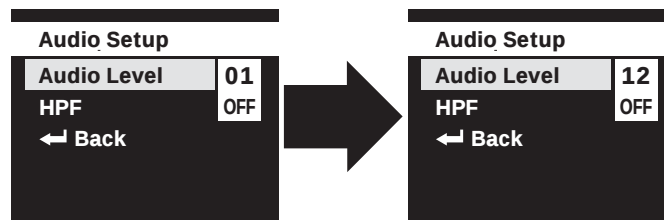


Set the transmitter group and channel

Rotate the cursor to select the IR SCAN parameter.

Press the MENU/SELECT button to active the IR SET function. While the IR SET is in progress, position the transmitter about 6-12" (15-30 cm) from the front of the UR7 receiver with the transmitter's IR window facing the IR transmitter on the front panel of the receiver.

Audio Setup



From the main performance page, press the MENU/SELECT Button to enter the Main Menu. With AUDIO SETUP highlighted, press the MENU/SELECT button to enter the AUDIO SETUP sub-menu.

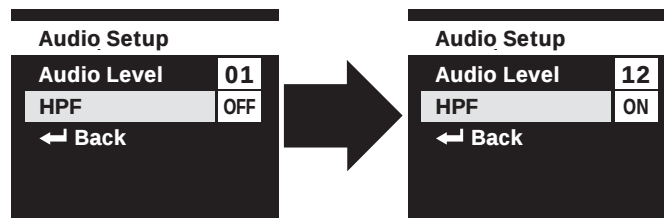
Setting the Audio Level

Rotate the cursor to select the AUDIO LEVEL parameter.

Press the MENU/SELECT button to adjust the setting.

Rotate the MENU/SELECT knob to adjust the output level setting.

Press the MENU/SELECT button to confirm and store the setting or press the POWER button to cancel the selection and move back to the AUDIO LEVEL sub-menu.



Enabling the High Pass Filter

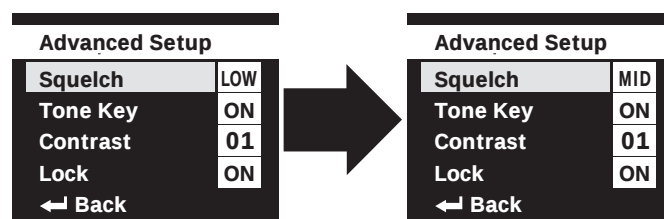
Rotate the cursor to select the HPF parameter.

Press the MENU/SELECT button to adjust the setting.

Rotate the MENU/SELECT knob to turn the HPF On or OFF.

Press the MENU/SELECT button to confirm and store the setting or press the POWER button to cancel the selection and move back to the AUDIO LEVEL sub-menu.

Advanced Setup



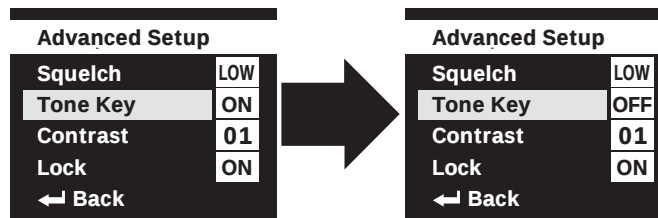
From the main performance page, press the MENU/SELECT Button to enter the Main Menu. With ADVANCED SETUP highlighted, press the MENU/SELECT button to enter the ADVANCED SETUP sub-menu.

Adjust the Squelch Threshold

Rotate the cursor to select the SQUELCH parameter. Press the MENU/SELECT button to adjust the setting. Rotate the MENU/SELECT knob to adjust the threshold level. Press the MENU/SELECT button to confirm and store the setting. Press the POWER button to cancel the selection and move back to the ADVANCED LEVEL sub-menu.

The Squelch threshold setting is helpful in increasing the audio reception between the receiver and transmitter when there is RF interference. As the squelch threshold is increased, the overall range is reduced. Always start with the squelch set to the minimum setting.

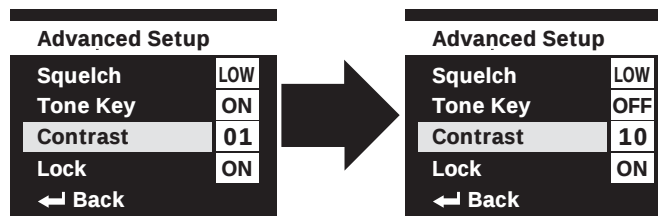
Advanced Setup



Enabling the Tone Key

Rotate the cursor to select the TONE KEY parameter. Press the MENU/SELECT button to adjust the setting. Rotate the MENU/SELECT knob to turn the TONE KEY on or off. Press the MENU/SELECT button to confirm and store the setting. Press the POWER button to cancel the selection and move back to the ADVANCED LEVEL sub-menu.

The Tone Key is an inaudible frequency that is transmitted along with the audio signal. It assists in reducing audio interference from other RF devices. When troubleshooting audio issues, it may be helpful to turn the tone key off. For best performance, it is recommended to always have the Tone Key activated.



Adjust the Display Contrast

Rotate the cursor to select the CONTRAST parameter. Press the MENU/SELECT button to adjust the setting. Rotate the MENU/SELECT knob to adjust the contrast level. Press the MENU/SELECT button to confirm and store the setting. Press the POWER button to cancel the selection and move back to the ADVANCED LEVEL sub-menu.



Lock the receiver controls

Rotate the cursor to select the LOCK parameter. Press the MENU/SELECT button to adjust the setting. Rotate the MENU/SELECT knob to enable the receiver Lock. Press the MENU/SELECT button to confirm and store the setting. Press the POWER button to cancel the selection and move back to the ADVANCED LEVEL sub-menu.

If the Lock is activated, the receiver must be unlocked before being able to adjust any parameters. To unlock the receiver, press and hold the MENU/SELECT button until the LOCK icon is flashing. Rotate the MENU/SELECT knob until the icon shows unlock, then press the MENU/SELECT button to confirm.

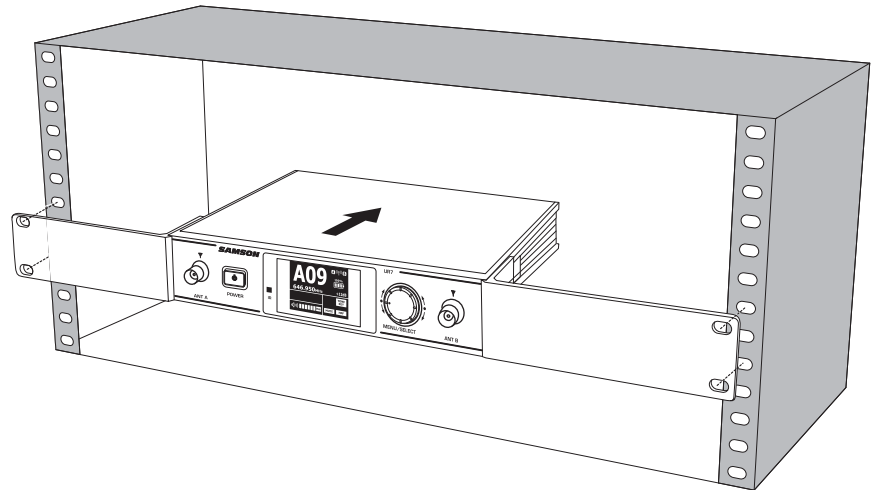
Rack Mounting

The UR7 receiver can be installed into a standard 19" rack for transport or permanent installation using the included rack ears.

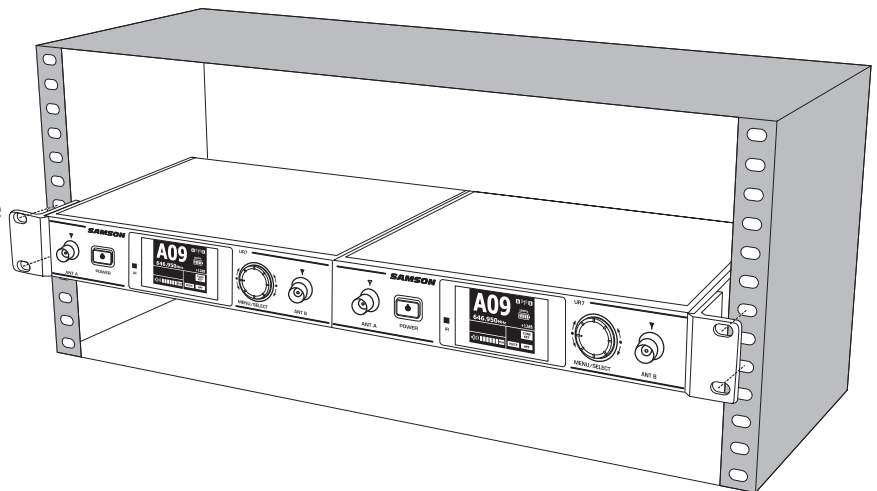
Affix the included rack ears to each side of the UR7 receiver. Secure the rack ears in place using the screws provided.

Position the UR7 receiver into an available rack space and slide in until the rack ears are touching the rails of the rack case and are aligned with the rack rail holes.

Mount the receiver into the rack using the appropriate size rack screws (not included). To ensure equal tension and balance when installing the receiver, you should secure screws in a crisscross pattern of opposite corners: top left -> bottom right -> top right -> bottom left.



A dual receiver rack mount kit (RKUR7) is available to mount two UR7 receivers in one rack space. The kit includes two short rack ears, a center connection piece, and a rear joint plate.



Channel Plans

Group C 638-666MHz										
	A	B	C`	D	E	F	G	H	I	J
1	638.000	638.200	638.225	638.300	638.425	638.950	639.000	639.200	639.225	639.300
2	640.525	640.725	640.750	640.825	640.950	641.475	641.525	641.725	641.750	641.825
3	643.150	643.350	643.375	643.450	643.575	644.100	644.150	644.350	644.375	644.450
4	645.875	646.075	646.100	646.175	646.300	646.825	646.875	647.075	647.100	647.175
5	648.700	648.900	648.925	649.000	649.125	649.650	649.700	649.900	649.925	650.000
6	651.650	651.850	651.875	651.950	652.075	652.600	652.650	652.850	652.875	652.950
7	654.725	654.925	654.950	655.025	655.150	655.675	655.725	655.925	655.950	656.025
8	657.925	658.125	658.150	658.225	658.350	658.875	658.925	659.125	659.150	659.225
9	661.250	661.450	661.475	661.550	661.675	662.200	662.250	662.450	662.475	662.550
10	664.700	664.900	664.925	665.000	665.125	665.650	665.700	665.900	665.925	666.000

Group I 518-546.9MHz										
	A	B	C`	D	E	F	G	H	I	J
1	518.000	518.200	518.225	518.300	518.425	518.950	520.000	520.200	520.225	520.300
2	521.025	521.225	521.250	521.325	521.450	521.975	522.775	522.975	523.000	523.075
3	524.100	524.300	524.325	524.400	524.525	525.050	525.600	525.800	525.825	525.900
4	527.225	527.425	527.450	527.525	527.650	528.175	528.475	528.675	528.700	528.775
5	530.400	530.600	530.625	530.700	530.825	531.350	531.400	531.600	531.625	531.700
6	533.600	533.800	533.825	533.900	534.025	534.550	534.350	534.550	534.575	534.650
7	536.850	537.050	537.075	537.150	537.275	537.800	537.350	537.550	537.575	537.650
8	540.150	540.350	540.375	540.450	540.575	541.100	540.400	540.600	540.625	540.700
9	543.475	543.675	543.700	543.775	543.900	544.425	543.475	543.675	543.700	543.775
10	546.850	547.050	547.075	547.150	547.275	547.800	546.600	546.800	546.825	546.900

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

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	>90 dB
Operating Temperature	-10°C to +45°C
Tone Key Frequency	32.768KHz

UB7 Belt Pack Transmitter

Input Connector	Mini-XLR (P3)
Input Impedance	1M Ω
Input Gain Range	38 dB
RF Power	10 $\pm$ 2dBm
Power Requirements	Two AA (LR6) alkaline batteries
Battery Life	Up to 15 hours
Dimensions (HxLxD)	2.4" x 0.78" x 3.5" / 62mm x 20mm x 90mm
Weight	5oz / 139.4g

UH7 Handheld Transmitter

Microphone Element	Q8 Dynamic
Input Gain Range	28 dB
RF Power	10 $\pm$ 2dBm
Power Requirements	Two AA (LR6) alkaline batteries
Battery Life	Up to 15 hours
Dimensions (Hx $\emptyset$)	10.5" x 2.2" / 266mm x 55mm
Weight	11oz / 310.2g

UR7 Receiver

Audio Output Level	Unbalanced +14 dBu / Balanced +9 dBu
Audio Output Impedance	Unbalanced 810 Ohms / Balanced 240 Ohms
Sensitivity	-100 dBm / 30 dB sinad
Image Rejection	>50 dB
Operating Voltage:	15V
Dimensions (LxWxH)	8.5" x 1.8" x 7.4" / 215mm x 45mm x 189mm
Weight:	3.1lb / 1.4kg