

131

USB BOUNDARY  
MICROPHONE



## Owner's Manual

**SAMSON®**

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THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES CLASS B. 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 UNDESIRE OPERATION. SUITABLE FOR HOME OR OFFICE USE.

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# Introduction

Congratulations on your purchase of the Samson UB1 USB boundary microphone! The UB1 is a low profile, surface-mount, boundary microphone featuring a fixed charge condenser element along with an onboard, high quality Analog-to-Digital converter and USB output. The UB1 is ideal for mounting on flat surfaces like conference room tables, podiums and altars, as well as hanging on ceilings and walls. The minimally intrusive design allows the microphone to be used in applications where low visibility is desired. The UB1 features a permanently charged condenser element with a half-omnidirectional pickup pattern. Because the UB1 is omni-directional, it provides linear pick-up in a 360-degree pattern, allowing the unit to be placed on the center of a conference table to pick-up everyone seated. Although the UB1 is very small in size, all the electronics are contained within the body, eliminating the need for any external electronics pack. The UB1 is perfect for recording your podcast, conference, meeting, or any acoustic audio source on your favorite recording software. Just plug in the supplied USB cable, launch your software and start recording. The UB1 faithfully reproduces a variety of sound sources including vocals, acoustic instruments and overhead cymbals, to name a few. A heavy Neoprene rubber pad is added to the bottom of the unit to decouple the microphone from the surface, helping to reduce unwanted pick-up noise. The UB1 is built using heavy-duty die cast construction with reinforced steel grill screen. Convenient mounting holes and hardware for hanging on walls or ceilings is included. A low reflectance, matte black finish enhances the stylish minimalist look.

In these pages, you'll find a detailed description of the features of the UB1 USB boundary microphone, as well as step-by-step instructions for its setup and use, and full specifications. You'll also find a warranty card enclosed—please don't forget to fill it out and mail it in so that you can receive online technical support and so we can send you updated information about these and other Samson products in the future. Also, be sure to check out our website ([www.samsontech.com](http://www.samsontech.com)) for complete information about our full product line.

With proper care, your UB1 will operate trouble free for many years. We recommend you record your serial number in the space provided below for future reference.

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

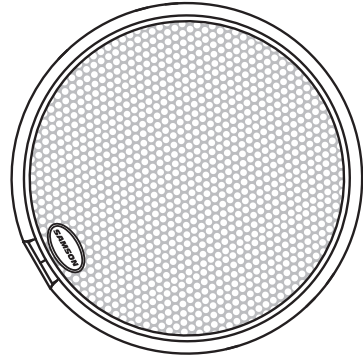
Date of purchase: \_\_\_\_\_

Should your unit ever require servicing, a Return Authorization number (RA) must be obtained before shipping your unit to Samson. Without this number, the unit will not be accepted. Please call Samson at 1-800-3SAMSON (1-800-372-6766) for a Return Authorization number prior to shipping your unit. Please retain the original packing materials and if possible, return the unit in the original carton and packing materials. If you purchased your Samson product outside the United States, please contact your local distributor for warranty information and service.

# UB1 Features

## UB1 Features

- Surface mount "Boundary" Condenser with USB Digital Output.
- Compatible with any computer based Digital Audio Workstation.
- The extremely detailed sound reproduction makes it ideal for recording vocals, acoustic instruments and just about any other sound source.
- High Quality AD converter with 16 Bit, 48K sampling rate.
- Works with universal system drivers for MAC and PC.
- Omni directional pick-up pattern.
- Solid Die Cast construction.
- 10 foot USB cable included.



## Installing the UB1

*Installing the UB1 is a simple procedure that takes just a few minutes. Since the UB1 is USB compliant, you can use either a MAC or PC, connect the included USB cable and plug and play. You will be able to control your UB1 using the standard audio interface controls in the MAC or Windows operating system. You will find detailed instructions on setting up with Windows and MAC OS in the following sections of this manual.*

**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.
- changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

# Installing the UB1

## Getting Started with Windows XP

1. The first time you plug the UB1 into a USB port, Windows will install the universal drivers for that port. A balloon tip will pop up, telling you it has found the USB Audio codec (figure 1).



Figure 1

2. When it is finished installing the drivers, it will say "Your new hardware is installed and ready to use" (figure 2).

Note: This balloon will not pop up again for the same USB port.

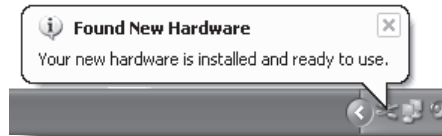


Figure 2

3. The volume can be changed by going to Control Panel and opening Sounds and Audio Devices (figure 3).

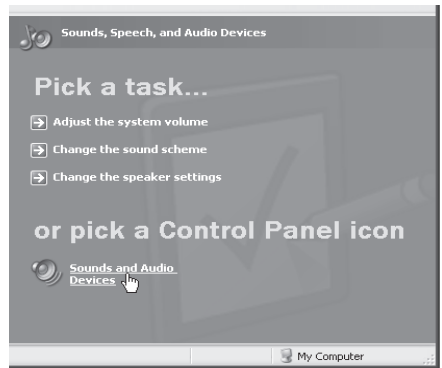


Figure 3

# Installing the UB1

## Getting Started with Windows XP - continued

4. To use the UB1 as your default input device (for programs like Sound Recorder), ensure that it is set for recording in the Audio tab (figure 4).
6. The internal, computer controlled gain can then be set by pressing the Volume button (figure 5).



Figure 4

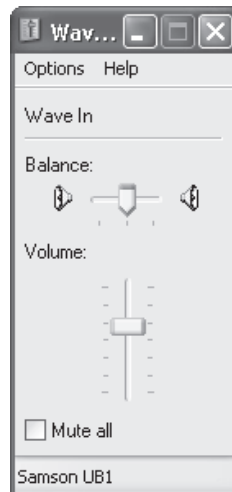


Figure 5

# Installing the UB1

## Getting Started with MAC OS X

The following example is for setting up the UB1 in MAC OS X .

1. Plug in microphone. The LED will light to indicate it is receiving USB power. The MAC will recognize the USB audio device and automatically install a universal driver.
2. To select the UB1 as the computers audio input, open the System Preferences from the dock or the main Apple Menu (figure 1).
3. Next open the Sound preference (figure 2).
4. Now, click in the Input tab and select UB1 (figure 3).

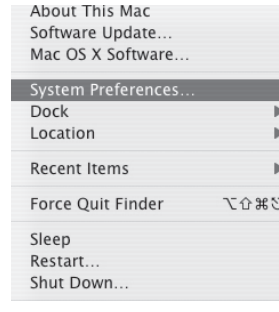


Figure 1

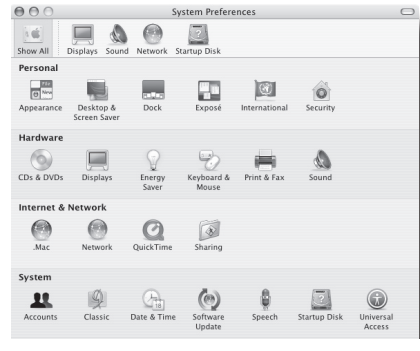


Figure 2

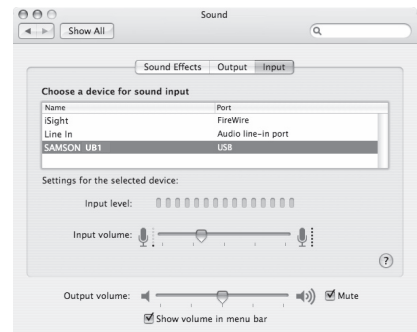


Figure 3



# Operating the UB1

## Powering the UB1

The UB1 is a condenser microphone, and like all condenser microphones, it has internal electronics that require an active power supply. Traditional studio condensers are almost always powered by a Phantom Power supply which is usually derived from the mixing console. The UB1 receives its power from the USB bus. Simply connect the microphone to the computer's USB port and the microphone is ready to operate. The UB1 features a power on LED, which will illuminate when USB power is present.

## Polar Pattern

Every microphone has a characteristic polar pattern that determines how well it accepts or rejects signal coming from various areas around the microphone. For example, unidirectional, or cardioid, mics are specifically designed to accept mostly signal coming from directly in front, and to reject signal coming from behind or from the side. In contrast, omnidirectional mics accept all signals regardless of where those signals originate (in front of the mic, behind it, to the side, etc.). The pickup pattern utilized by the UB1 is omnidirectional (as shown on page 9). For this reason, the UB1 excels in environments where capturing the sound from all directions around the microphone is desired. The UB1 will pick up the sound in a 360-degree pattern, which makes it ideal for placing in the center of a conference table to record a meeting. The polar pattern also determines how prone a particular mic is to inducing feedback. Feedback is that characteristic nasty howling sound that occurs when a mic is placed too close to a loudspeaker—the signal from the loudspeaker is fed into the mic, then into the loudspeaker, then into the mic, over and over again until an oscillating tone is generated. Because the UB1 is omnidirectional, special attention to the microphone and speaker placement should be considered in live sound applications.

## Microphone Placement

The UB1 was designed primarily for use on a flat surface like a conference table, hanging on a wall, or in a house of worship, on the altar. In order to maximize the sound quality, you must pay careful attention to the placement of your UB1 and how it is positioned for the instrument or vocalist that you are miking. Since the UB1 is an omnidirectional microphone, it will pick up the sound in a 360-degree pattern, essentially picking up in every direction. This is often a good solution in a conference situation since the UB1 will pick up all around the table. All microphones, especially uni-directional or cardioid microphones, exhibit a phenomenon known as “proximity effect.” Very simply put, proximity effect is a resulting change in the frequency response of a microphone based on the position of the mic capsule relative to the sound source. Generally, you will get a bass boost when miking in close. When you point a cardioid mic directly at the sound source (on axis) you will get the best frequency response, however when you start pointing the microphone slightly away (off axis) you will notice the low frequency response dropping off and the microphone will start to sound thinner. However, since the UB1 is omnidirectional it exhibits very little proximity effect.

# Operating the UB1

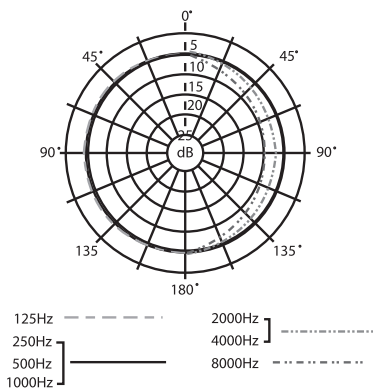
## Setting Up the Signal Level

You can adjust the UB1's internal digitally controlled analog Input Gain stage by using the UB1 software, or you can control the input gain by using the software control in your computer's operating system and/or digital audio workstation. Either way, the purpose of the mic trim control is to optimize the amount of good signal to any associated noise. A good mic pre, like the UB1 software control panel, also will have a LEVEL or CLIP indicators. To set a good level on the mic, set the UB1 up in front of the desired sound source and slowly raise the input trim control until you see the CLIP or Peak indicator light up. Then, turn the input trim control down until the indicator does not light any more.

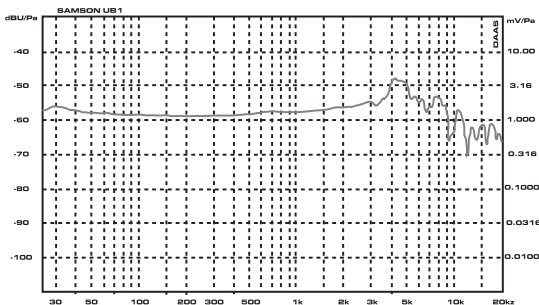
## UB1 Installation

The UB1 can be installed on just about any flat surface. Simply place the unit on a conference table, alter or sound stage. For mounting flush to a wall or ceiling, you can use the mounting holes provided on the rear of the microphone. Take care not to cover the any part of the mic element with your hand or any other object. Also, be aware of a phenomenon called the proximity effect, as explained on page 6, which causes a noticeable change in the frequencies response of the microphone.

# UB1 Specifications



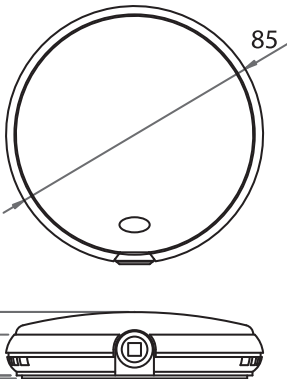
UB1 Polar Pattern



UB1 Frequency Response

## UB1 Specifications

Element Type	Fixed charge condenser
Polar Pattern	Omni-directional
Frequency response	30 - 18000Hz
SPL	127dB
Dynamic range	103dB
S/N ratio	70dB
Power Supply	USB buss powered



Specifications subject to change without notice.

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