



SM7dB

Vocal Microphone with Active Preamp

The user guide for the SM7dB microphone. Learn how to power, adjust, and use the SM7dB vocal microphone with an active preamplifier.
Version: 4.0 (2024-B)

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SM7dB

Vocal Microphone with Active Preamp

SAFETY PRECAUTIONS

Before using this product, please read and save the enclosed warnings and safety instructions.

	<p>WARNING: Ignoring these warnings may cause severe injury or death as a result of incorrect operation.</p> <p>If water or other foreign objects enter the inside of the device, fire or electric shock may result. Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.</p>
	<p>CAUTION: Ignoring these cautions may cause moderate injury or property damage as a result of incorrect operation.</p> <p>Never disassemble or modify the device, as failures may result. Do not subject to extreme force and do not pull on the cable or failures may result. Keep the microphone dry and avoid exposure to extreme temperatures and humidity.</p>

General Description

The Shure SM7dB dynamic microphone has a smooth, flat, wide-range frequency response appropriate for content creation, speech, music, and beyond. A built-in active preamplifier provides up to +28 dB of low-noise, flat, transparent gain while preserving frequency response for a clean, classic sound. The SM7dB's built-in preamp delivers the legendary sound of the SM7B, completely uncompromised and without the need for an in-line preamplifier. The SM7dB back panel switches allow customized frequency response and the ability to adjust or bypass the preamp.

Powering the SM7dB Preamplifier

Important: The SM7dB requires +48 V phantom power to operate with the preamplifier engaged. It will operate in bypass mode without phantom power.

To deliver audio directly to a computer, use an audio interface with an XLR input that provides +48 V phantom power, such as the Shure MVi or MVX2U, and turn phantom power on.

When connecting to a mixer, use only balanced, microphone-level inputs with phantom power. Turn phantom power on for the channel your SM7dB is connected to.

Depending on your interface or mixer, phantom power may be enabled through a switch, a button, or control software. Refer to the user guide for your interface or mixer to learn how to engage phantom power.

Preamplifier Best Practices

The SM7dB features a built-in active preamplifier which provides up to +28 dB of low-noise, flat, transparent gain that optimizes audio performance.

Adjust the gain level on the SM7dB before adjusting levels on your interface or mixer. This approach maximizes the signal-to-noise ratio for a cleaner, clearer sound.

In podcast or quiet vocal applications, you are more likely to need the +28 dB setting, while louder talkers or singers may only need the +18 dB setting. For instrumental applications, you may find that the +18 dB or the bypass settings reach the ideal input levels.

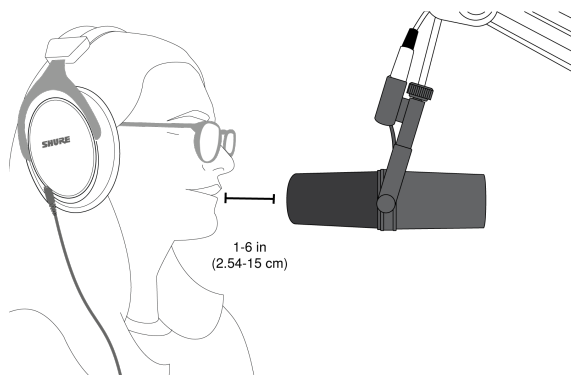
Using Variable Impedance Mic Preamplifiers

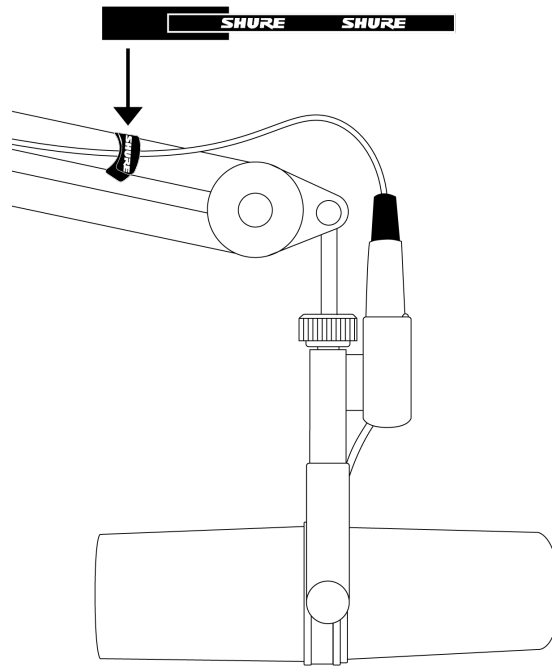
Select the highest available impedance setting on the external preamp when using the built-in preamp.

If you are using a low impedance setting to change the tonality for creative purposes, bypass the SM7dB's built-in preamp. Keeping the SM7dB preamp engaged with a low-impedance setting will not yield the same changes in tone.

Microphone Placement

Speak directly into the mic, 1 to 6 inches (2.54 to 15 cm) away to block off-axis noise. For a warmer bass response, move closer to the microphone. For less bass, move the microphone away from you.





Velcro Cable Tie

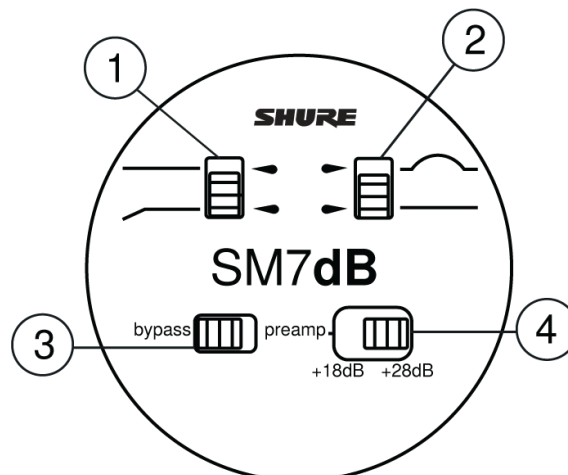
Use the enclosed velcro tie to secure the cable.

Windscreen

Use the standard windscreen for general voice and instrumental applications.

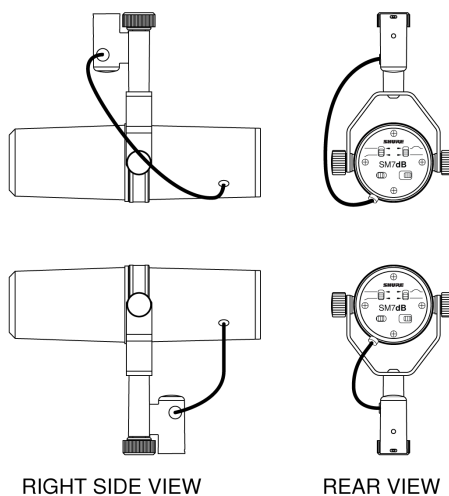
When you speak, you may hear vocal pops from some consonant sounds (known as plosives). To prevent more plosive sounds and wind noise, you can use the larger A7WS windscreen.

Adjust Back Panel Switches



- ① **Bass Rolloff Switch** To reduce the bass, push the top-left switch down. This can help lower background hum from A/C, HVAC, or traffic.
- ② **Presence Boost** For a brighter sound in mid-range frequencies, push the top-right switch up. This can help improve vocal clarity.
- ③ **Bypass Switch** Push the bottom-left switch to the left to bypass the preamp and achieve the classic SM7B sound.
- ④ **Preamp Switch** To adjust the gain on the built-in preamp, push the bottom-right switch to the left for +18 dB and to the right for +28 dB.

Switching Microphone Orientation



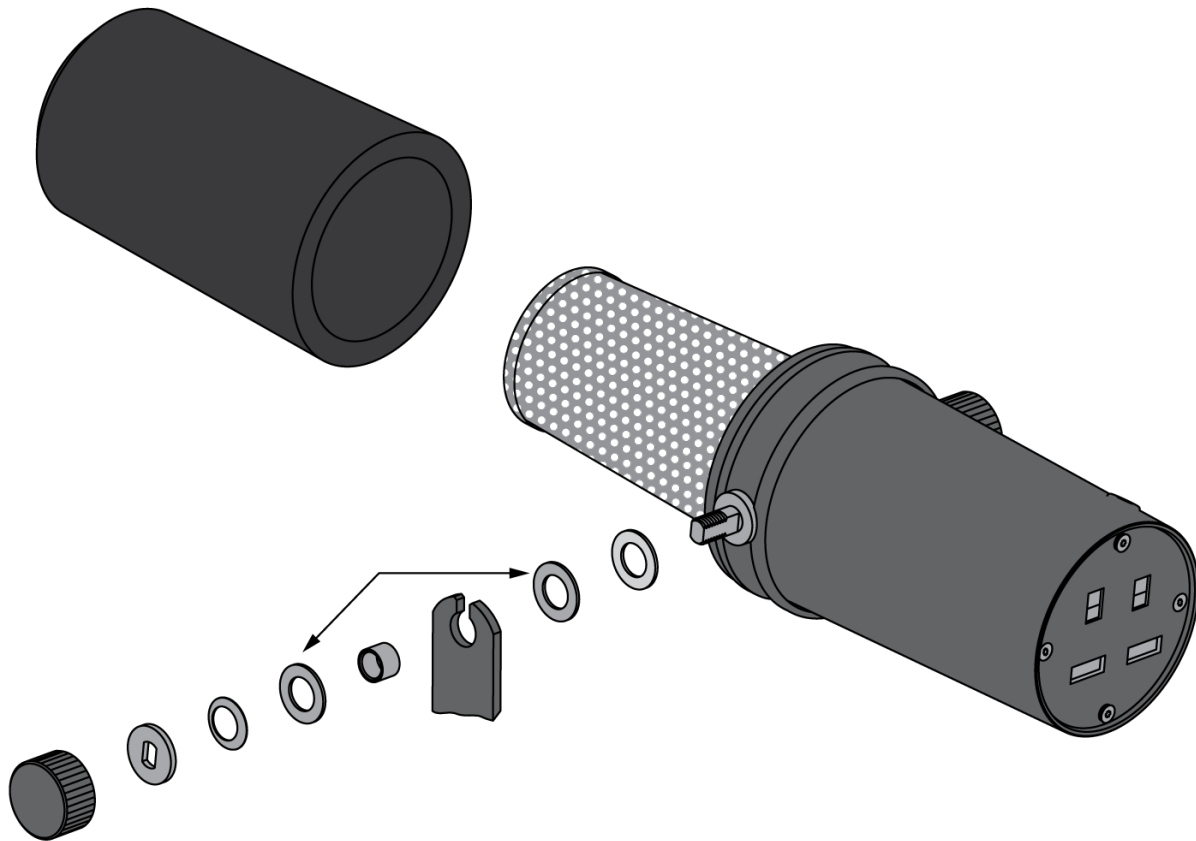
Boom and Microphone Stand Mounting Configuration

The SM7dB can be mounted on a boom arm or a stand. The default setup for the SM7dB is for a boom mount. To keep the rear panel facing upright when mounted on a stand, reconfigure the mounting assembly.

To set up the SM7dB for a microphone stand:

1. Remove tightening nuts on the sides.
2. Remove the fitted washers, the lock washers, the outer brass washers, and the brass sleeves.
3. Slide the bracket off the microphone. Be careful not to lose the washers still on the microphone.
4. Invert and rotate the bracket. Slide it back onto the bolts over the brass and plastic washers still on the microphone. The bracket should fit so the XLR connector faces the rear of the microphone and the Shure logo on the back of the microphone is right-side up.
5. Replace the brass sleeves. Be sure they are seated properly within the inner washers.
6. Replace the outer brass washers, the lock washers, and the fitted washers.
7. Replace the tightening nuts and tighten the microphone at the desired angle.

Note: If the tightening nuts do not hold the microphone in place, you may need to re-position the brass sleeves and the washers.

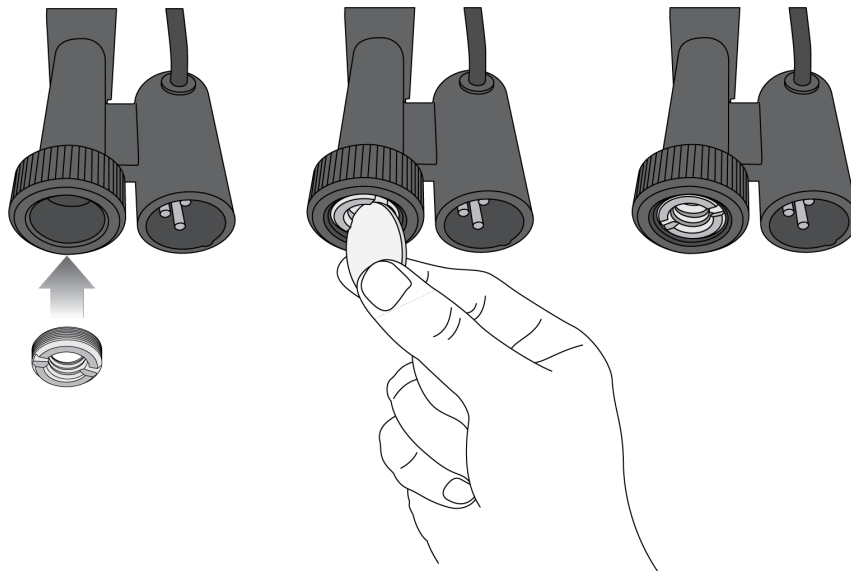


Mounting Assembly - Exploded View

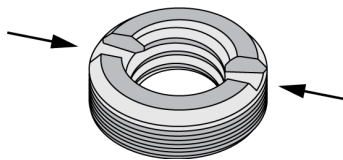
- ① Tightening nut
- ② Fitted washer
- ③ Lock washer
- ④ Brass washers
- ⑤ Brass sleeve
- ⑥ Mounting bracket
- ⑦ Plastic washer
- ⑧ Response switches
- ⑨ Windscreen

Install or Remove the Stand Adapter

To mount the microphone on a 3/8 in. stand, insert the included brass stand adapter and tighten it with a coin or screwdriver.



Important: Make sure that the slots on the adapter face outward.



Specifications

Type

Dynamic (moving coil)

Frequency Response

50 to 20,000 Hz

Polar Pattern

Cardioid

Output Impedance

Preamp engaged	27 Ω
Bypass mode	150 Ω

Recommended Load

>1k Ω

Sensitivity

Flat response bypass mode	-59 dBV/Pa[1] (1.12 mV)
Flat response +18 preamp engaged	-41 dBV/Pa[1] (8.91 mV)
Flat response +28 preamp engaged	-31 dBV/Pa[1] (28.2 mV)

Hum Pickup

(typical, at 60 Hz, equivalent SPL/mOe)

11 dB

Preamplifier Equivalent Input Noise

(A-weighted, typical)

-130 dBV

Polarity

Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3

Power Requirements

(with preamp engaged)

48 V DC [2] phantom power (IEC-61938) 4.5 mA, maximum

Weight

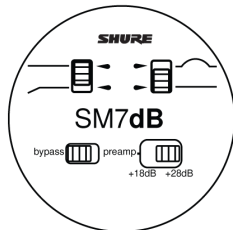
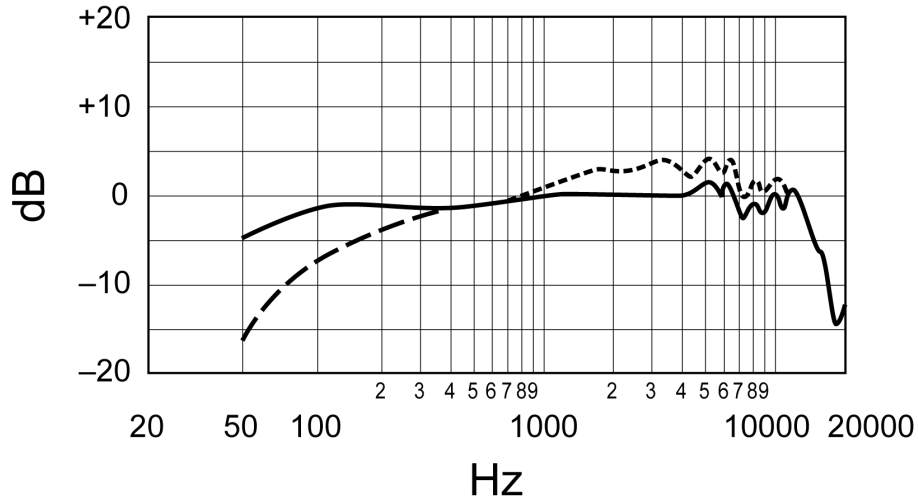
0.837 kg (1.875 lbs)

Housing

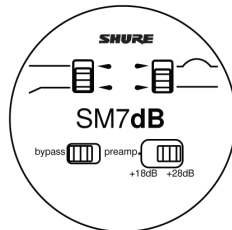
Black enamel aluminum and steel case with black foam windscreen

[1] 1 Pa=94 dB SPL

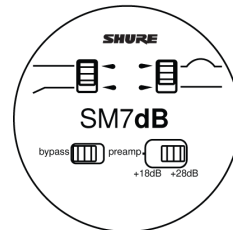
[2]All specifications measured with a 48 Vdc phantom power supply. The microphone operates at lower voltages, but with slightly decreased headroom and sensitivity.



Flat Response

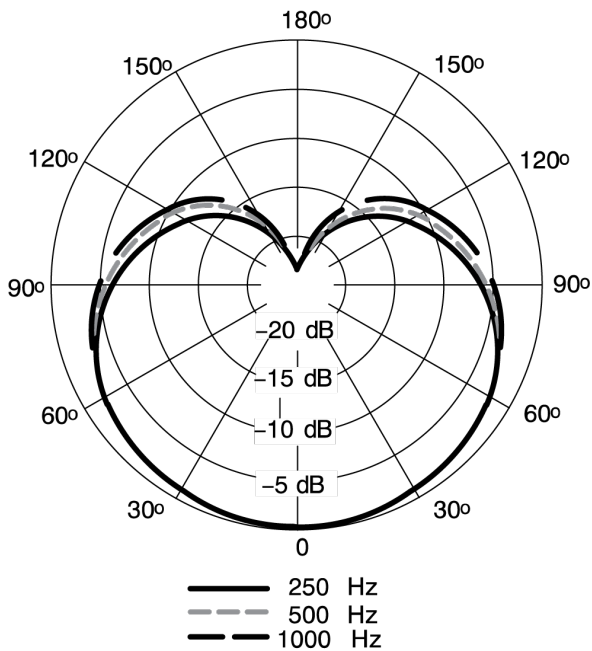


Bass Rolloff

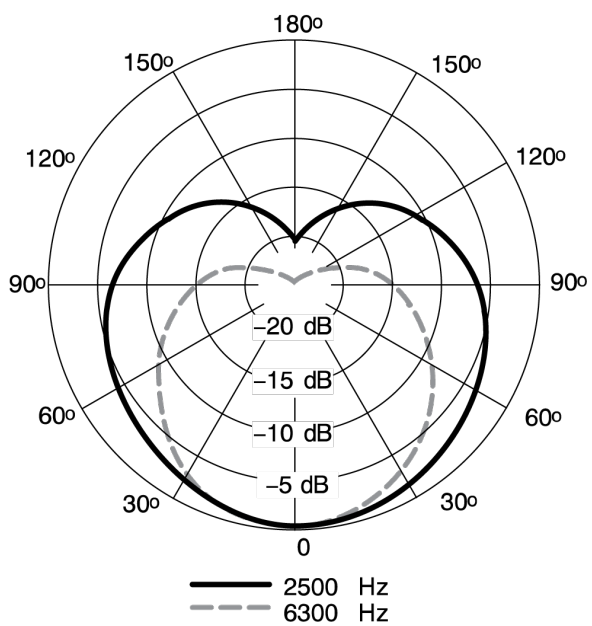


Presence Boost

Typical Frequency Response

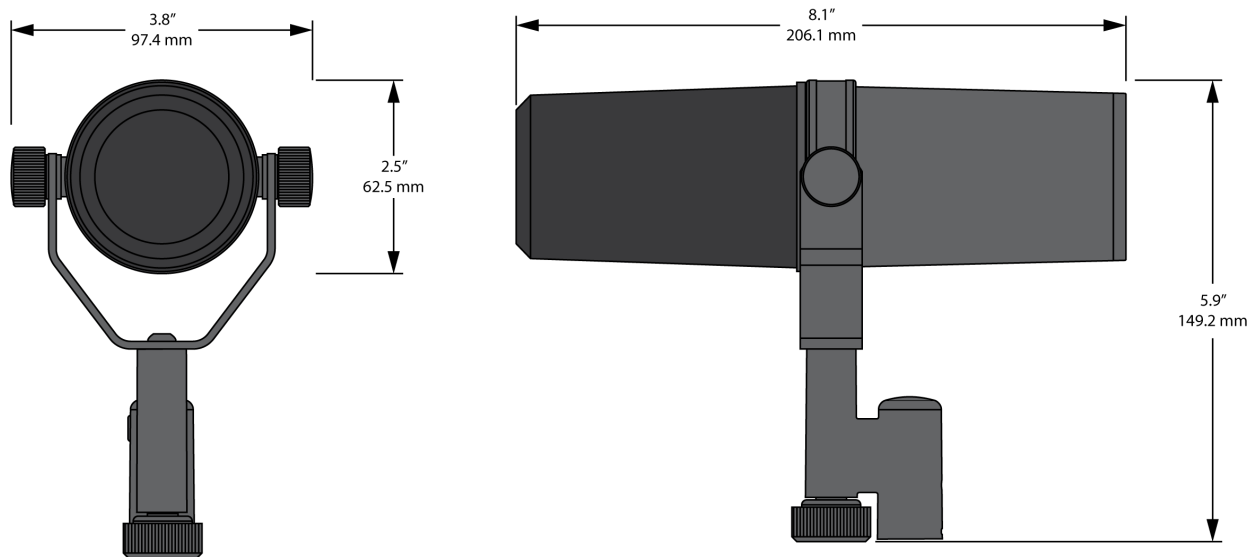


- 250 Hz
- - - 500 Hz
- · - 1000 Hz



- 2500 Hz
- - - 6300 Hz

Typical Polar Pattern



Overall Dimensions

Accessories

Furnished Accessories

Black Foam Windscreen	RK345B
Large Black Foam Windscreen for SM7, also see RK345	A7WS
5/8" to 3/8" Thread Adapter	31A1856

Replacement Parts

Black Windscreen for SM7dB	RK345B
Nut and Washers for SM7dB Yoke Mount	RPM604B

Certifications

CE Notice

Hereby, Shure Incorporated declares that this product with CE Marking has been determined to be in compliance with European Union requirements.

The full text of the EU declaration of conformity is available at the following site: <https://www.shure.com/en-EU/support/declarations-of-conformity>.

UKCA Notice

Hereby, Shure Incorporated declares that this product with UKCA Marking has been determined to be in compliance with UK-CA requirements.

The full text of the UK declaration of conformity is available at the following site: <https://www.shure.com/en-GB/support/declarations-of-conformity>.

Waste Electrical and Electronic Equipment (WEEE) Directive



In the European Union and the United Kingdom, this label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

Please consider the environment, electric products and packaging are part of regional recycling schemes and do not belong to regular household waste.

Registration, Evaluation, Authorization of Chemicals (REACH) Directive

REACH (Registration, Evaluation, Authorization of Chemicals) is the European Union (EU) and the United Kingdom (UK) chemical substances regulatory framework. Information on substances of very high concern contained in Shure products in a concentration above 0.1% weight over weight (w/w) is available upon request.