

PRM1

RTA Measurement Microphone

Owner's Manual



Introduction

Thank you for purchasing the PreSonus® PRM1 RTA Microphone. This omnidirectional microphone has been designed to provide an accurate reproduction of a room's sound characteristics for use with audio-analysis tools, such as real-time analyzers and spectrographs. Delivering a flat frequency response from 20 Hz to 20 kHz and featuring a ¼", pre-polarized, electret condenser capsule, the PRM1 is an excellent companion to the Virtual StudioLive™ Smaart® System Check Wizards and other analysis systems.

We appreciate the support you have shown us through the purchase of this product.

Features

- ¼", pre-polarized, electret condenser capsule
- Flat frequency response from 20 Hz to 20 kHz
- Low noise, low distortion
- Ideally suited for system analysis and measurement
- All-metal chassis

Precautions

- Mute audio system output prior to connecting or disconnecting the PRM1 or engaging/disengaging phantom power.
- When operating in outdoor environments, cover capsule with foam windscreen to reduce wind noise.
- Attach to a mic stand when analyzing sound systems to ensure accurate measurements.

What's in the Box

- PRM1 RTA Microphone
- PRM1 Hard Case
- PRM1 Shock Mount
- PRM1 Foam Windscreen

About This Microphone

The PRM1 is a condenser microphone with a flat frequency response and an omnidirectional polar pattern. Let's briefly define these terms.

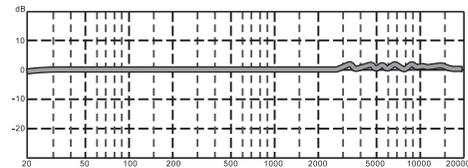
Condenser Microphones

Condenser microphones such as the PRM1 require a power source, which can be provided by an external power supply or using phantom power, which is usually provided by a mixer, preamplifier, or direct box. Phantom power is sent over the same mic cable that carries the audio signal; the term derives from the fact that there is no visible power cable, and the voltage is not perceptible in the audio path.

PreSonus StudioLive-series mixers provide phantom power to every mic input, including the talkback input utilized by the Smaart System Check Wizards in VSL.

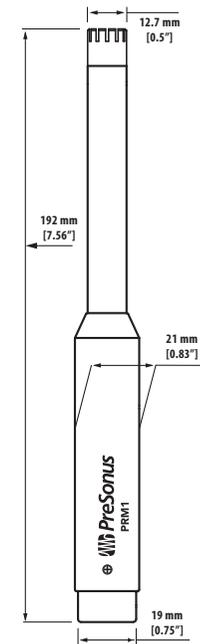
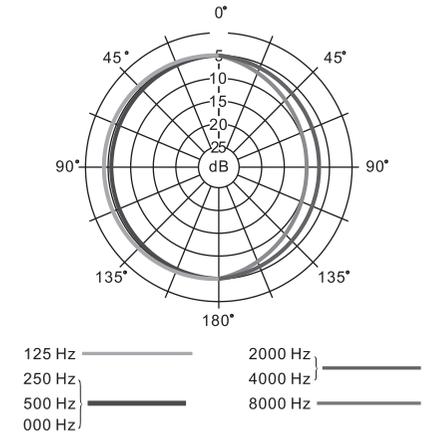
Flat Frequency Response

A microphone with a flat frequency response captures all frequencies equally within its specified response range, neither boosting nor cutting frequencies, so it accurately reproduces the incoming signal. While this makes it ideal for measuring what a room or speaker is doing to the outgoing signal in a sound system, it is not necessarily the best choice for recording specific instruments.



Omnidirectional

The PRM1 has an omnidirectional polar pattern, meaning it is equally sensitive in all directions. This allows the microphone to measure reflections, as well as direct signals, providing an accurate depiction of the room.



Dimensions



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Part# 820-PRM0022-B

Mic Position and Room Analysis

Improper mic placement when analyzing a sound system can result in the system appearing to have problems that don't actually exist. Below is a quick reference for proper mic placement.

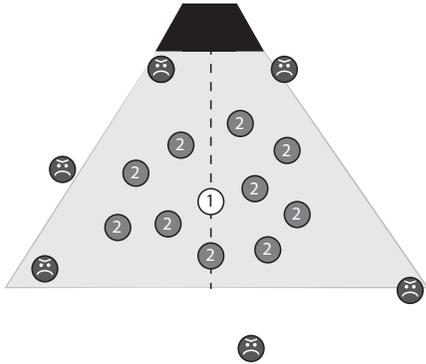
Primary Mic Position

This is the main reference point for a speaker and can be used as a single, "representative" position. Your goal in setting the primary mic position is to find a point that puts the microphone in the center (on axis) of a speaker's throw, within the listening area. In other words, you want to put the microphone smack dab in the middle of where your speaker sounds its best.

Secondary Mic Position

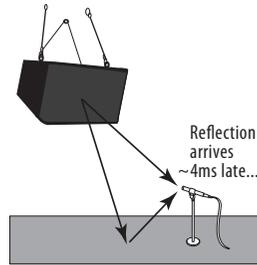
Secondary mic positions provide your system analysis with more information to get a more "three-dimensional" view of your system. These can be on- or off-axis measurements of a speaker within the listening area. Avoid using locations outside the core coverage area of your system, or on the edges.

With any mic position, avoid creating position-dependent anomalies.



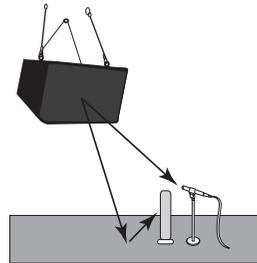
Ground Bounce

Ground reflections, or "ground bounce," become an issue when a speaker is flown and angled down. The proper mic position, in this case, will also catch the reflection of the signal off the floor.

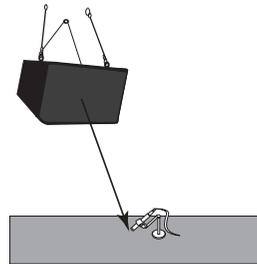


In this case, you can choose from three options:

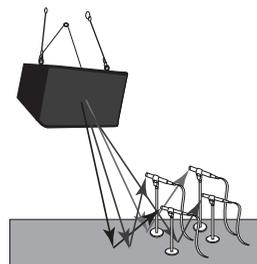
- Block the reflection with a baffle.



- Do a ground-plane measurement.



- Do a multi-point measurement to randomize the effect of the floor bounce.



Technical Specifications

Type	Black electret condenser
Element	Pressure, FET preamplifier
Polar Pattern	Omnidirectional
Frequency Response	20 Hz to 20 kHz
Sensitivity (@ 1 kHz open-circuit voltage)	-37 dB/Pa (14 mV/Pa) 1 Pa=94 dB SPL
Rated Impedance	200Ω
Minimum Load Impedance	1,000Ω
EIN (A-weighted)	26 dB
Max. SPL (1 kΩ load)	132 dB SPL (THD ≤ 1%, 1 kHz)
Dynamic Range (1 kΩ load)	106 dB
S/N Ratio	70 dB
Power	9-52V Phantom
Current Consumption	2 mA
Polarity	Pin 2 output positive voltage (relative to Pin 3) when diaphragm receives positive pressure (moves inward)
Connector	3 pin XLR Male
Finish	Metal, matte black
Environmental Conditions	10-50° C, humidity 0-95%
Weight	150g (5.3 oz)
Dimensions (LxW)	7.56" x 0.83" (192 mm x 21 mm)

EU Directives on the Protection of the Environment

RoHS This product is compliant with the EU Directive 2011/65/EU for the Restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment. No lead (Pb), cadmium (Cd), mercury (Hg), hexavalent chromium (Cr+6), PBB or PBDE is intentionally added to this device. Any traces of impurities of these substances contained in the parts are below the RoHS specified threshold levels.

REACH This product is compliant with the European Union Directive EC1907/2006 for the Registration, Evaluation, Authorization, and Restriction of chemicals (REACH) and contains none or less than 0.1% of the chemicals listed as hazardous chemicals in the REACH regulation.

WEEE This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city recycling office or the dealer from whom you purchased the product.



PreSonus Limited Warranty

1. PreSonus Audio Electronics Inc. warrants this product to be free of defects in material and workmanship for a period of one year from the date of original retail purchase.
2. This warranty is enforceable only by the original retail purchaser. To be protected by this warranty, the purchaser should register the product on line at www.presonus.com within 14 days of purchase.
3. For warranty information in all other countries except the USA, please refer to your local distributor.
4. During the warranty period PreSonus shall, at its sole and absolute option, either repair or replace, free of charge, PRM1 headphones that prove to be defective on inspection by PreSonus or its authorized service representative.
5. A warranty claim is deemed valid if:
 - a. Purchase of the product took place within the last 12 months (or extended period if required by law) and purchased legitimately through a dealer.
 - b. The failure description and/or the visual appearance do not indicate physical abuse by the customer and the factory-applied serial number has not been altered or removed or tampered with in any way.
6. The Limited Warranty does not cover :
 - a. Improper handling or neglect
 - b. Products returned without proof of purchase
 - c. Products where serial number, ID numbers or logos have been tampered with
 - d. Products that have been modified from original design.
 - e. Damages incurred in transit, where the carrier needs to be notified to handle the claim
 - f. Damages incurred by unauthorized repairs
 - g. Physical abuse
 - h. Natural disasters such as fire, flood, lightning, earthquake
 - i. Liquid contamination
 - j. Excessive high or low temperature or humidity
 - k. Inappropriate storage
 - l. Physically damaged connectors
 - m. Connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used
 - n. Damages/defects caused by force majeure or any other condition that is beyond the control of PreSonus Audio Electronics
7. To obtain warranty service, the purchaser must first call or write PreSonus at the address and telephone number printed **ON THE FRONT OF THIS MANUAL** to obtain a Return Authorization Number and instructions of where to return the unit for service. All inquiries must be accompanied by a description of the problem.
8. All authorized returns must be sent to the PreSonus repair facility postage prepaid, insured and properly packaged. PreSonus reserves the right to update any unit returned for repair.
9. PreSonus reserves the right to change or improve the design of the product at any time without prior notice. This warranty does not cover claims for damage due to abuse, neglect, alteration, or attempted repair by unauthorized personnel and is limited to failures arising during normal use that are due to defects in material or workmanship in the product. Any implied warranties, including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this limited warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. In no event will PreSonus be liable for incidental, consequential, or other damages resulting from the breach of any express or implied warranty, including, among other things, damage to property, damage based on inconvenience or on loss of use of the product, and, to the extent permitted by law, damages for personal injury. Some states do not allow the exclusion of limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. This warranty only applies to products sold and used in the United States of America. For warranty information in all other countries except the USA, please refer to your local distributor.