

M 643+A 811 自由场测量传声器套件

产品规格书

M 643+A 811 Free-field Measurement Microphone Kit

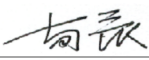
Product Specification

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从此文件发布日期起，在此发表的是当前或者拟定的信息。由于我们会不断对产品进行改进和增加特征此出版物中的信息如有变动恕不另行通知。

From the date of this document's release, the information published here is current or proposed. As we will continuously improve and add features to our products, the information in this publication is subject to change without further notice.

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日期：2026-05-27	日期：2026-05-28	日期：2026-05-29	日期：2026-06-04

我们生产的测量用传声器，属于精密传感器，生产相关的各个方面都进行着严格管控，包括材料选择，生产工艺，测试管控，以及生产环境。



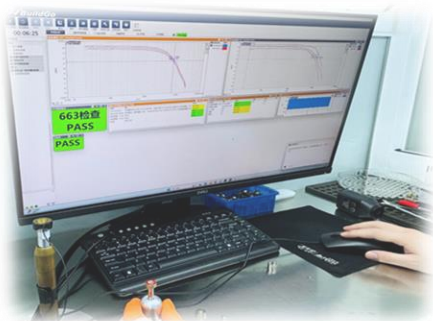
材料选择

经过多年持续改善，我们现采用特种镍合金材料作为膜片核心材料，相比其它合金材料有着更高灵敏度，更低失真率，以及更为稳定的长期使用表现；麦克风前置主体采用不锈钢材料使整支麦克风在各种装配场合下仍能拥有极为强壮的结构特性。



生产工艺

我们采用先进生产工艺，全自动化精密加工设备，最大程度减少了传统加工设备在进行二次装夹时带来的精度误差，从而显著提升了产品的尺寸一致性、几何精度及整体品质稳定性，为高要求的应用场景提供了可靠的技术保障。



测试管控

同时我们采用极其严苛的测试管控手段，对任何可能导致产品品质问题的环节都进行量化测试，并且进行测试顺序管控，防止跳站情况发生，完善的 MES 管控使得所有数据可追踪，确保传感器品质的高度一致性。



生产环境

所有我们的麦克风其整个生产流程均严格在无尘车间内完成，能最大程度降低空气中的灰尘数量，从而为传感器营造一个稳定、纯净的工作环境，以确保传感器长期稳定的寿命和并且在日常使用中始终展现出卓越的性能表现。

产品简介

M 643+A 811 自由场测量传声器套件



M 643+A 811是1/4英寸预极化自由场测量传声器套件，用于测量传声器放入声场前的无畸变的真实声压。

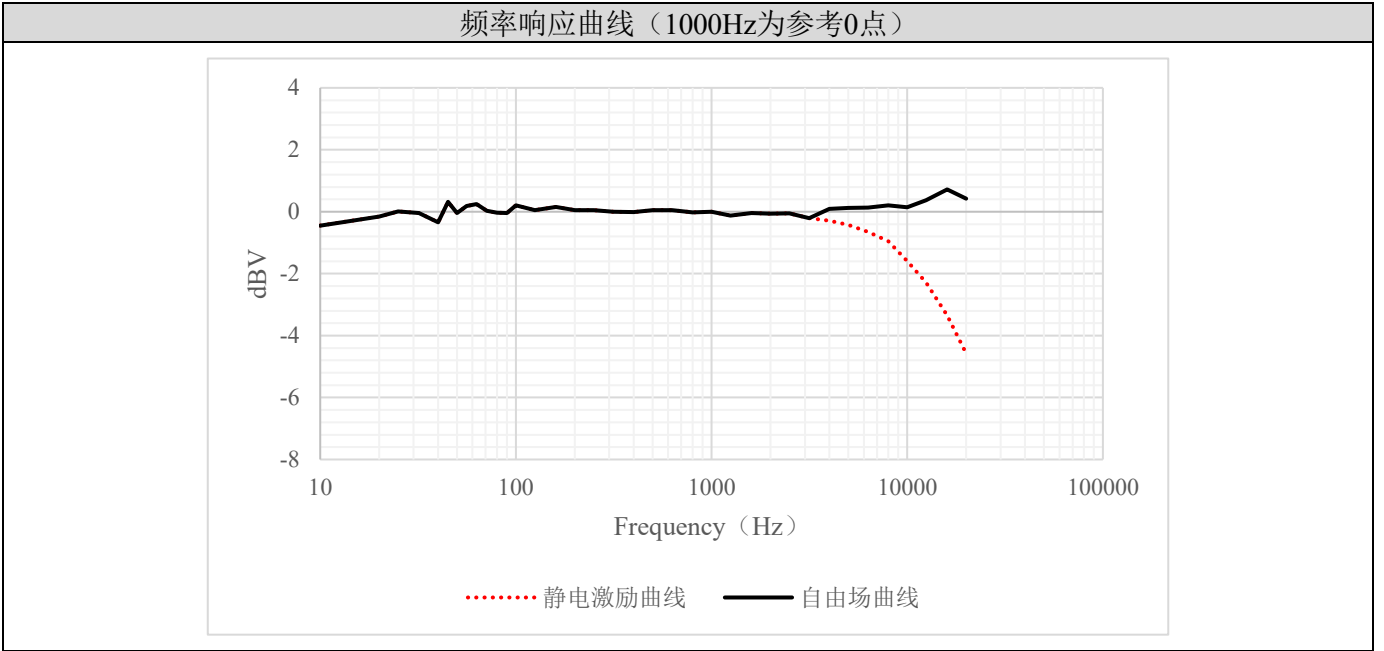
功能特点

- 符合 IEC 61094-4 对于 WS3F 型测量传声器要求
- 宽动态范围，宽频率范围
- 适用于超声测量、爆炸声测量

规格参数

整体参数	
声场类型	自由场型
极化电压	0V（预极化）
频率响应	10-20kHz ± 2 dB
动态范围	37.5dB (A) -154dB (1000 Hz 失真<3%)
本底噪声	<37.5dB (A)
灵敏度 mV/Pa(dBV/Pa)	5 ± 1 mV/Pa (-46 ± 2) dB re 1V/Pa
最大输出电压	5.6V
输出阻抗	<50 Ω
供电电源	典型 4mA
均压方式	后均压
接口类型	Microdot(M5)
工作温度范围	-30°C至 85°C
温度系数	-0.012dB/°C
相对湿度	0%-90%（无凝结）
相对湿度系数	<0.1dB（0%-90% 无凝结）
静压系数	-0.01dB/kPa
存储条件	温度：25°C ± 5 °C，湿度：50% ± 15 %RH（保证传感器的长期稳定性）

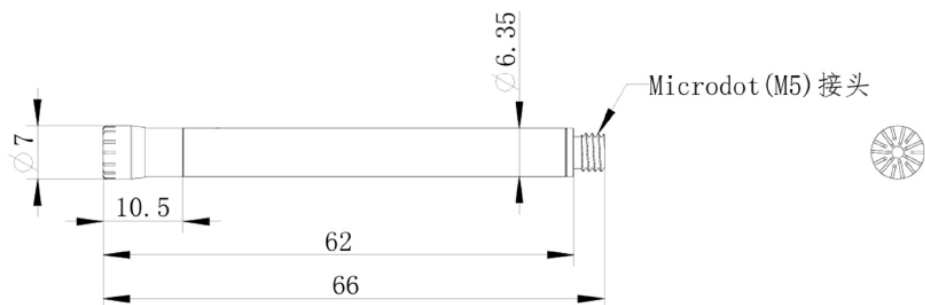
频响曲线



结构尺寸

unit: mm

尺寸参数	
整体长度（含保护栅）	66mm
直径（含保护栅）	7mm
直径（不含保护栅）	6.35mm



订购信息

PN号	型号	说明
900011-05	M 643+A 811	自由场测量传声器套件
900001-08	M 643	自由场测量传声器
900010-11	A 811	前置放大器
730008-000	102C	定制长度_M5_BNC低噪声线缆

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The measuring microphones we produce are precision sensors, and all aspects related to production are strictly controlled, including material selection, production processes, testing control, and production environment.



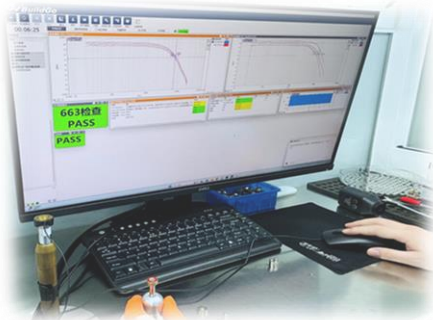
Material selection

After years of continuous improvement, we now use special nickel alloy materials as the core material for the diaphragm. Compared to other alloy materials, it exhibits higher sensitivity, lower distortion rate, and more stable long-term performance. The front body of the microphone is made of stainless steel, ensuring that the entire microphone maintains extremely robust structural characteristics even under various assembly conditions.



Production process

We adopt advanced production processes and fully automated precision machining equipment, which significantly reduces the accuracy errors caused by secondary clamping in traditional machining equipment. This greatly enhances the dimensional consistency, geometric accuracy, and overall quality stability of the products, providing reliable technical support for demanding application scenarios.



Testing control

At the same time, we employ extremely rigorous testing and control measures, conducting quantitative testing on any links that may lead to product quality issues, and implementing test sequence control to prevent skip-station situations. The comprehensive MES control enables all data to be traceable, ensuring a high degree of consistency in sensor quality.



Production environment

The entire production process of all our microphones is strictly carried out in a dust-free workshop, which can minimize the amount of dust in the air, thus creating a stable and pure working environment for the sensors. This ensures a long and stable lifespan for the sensors and maintains their excellent performance throughout daily use.

Product introduction



Free-field measurement microphone kit

M 643 + A 811 is a 1/4-inch pre-polarized free-field measurement microphone kit, designed to capture distortion-free true sound pressure levels prior to microphone placement in the sound field.

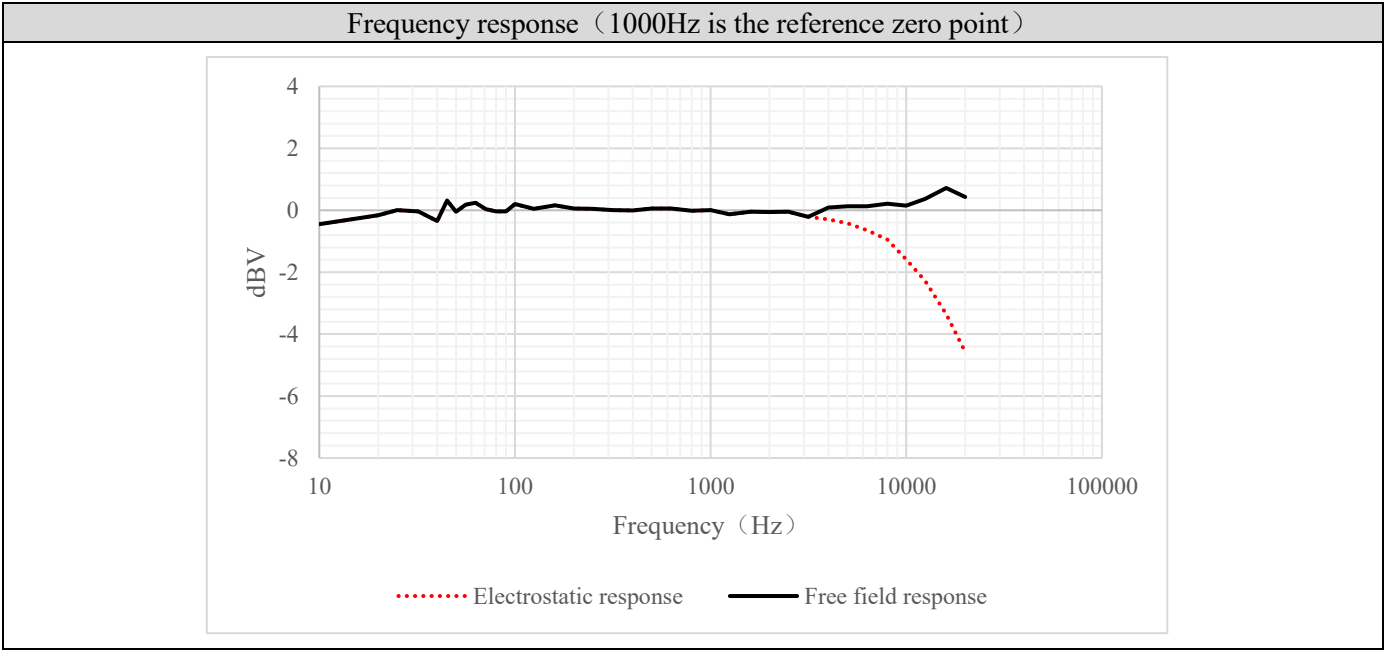
Features

- Compliance with IEC 61094-4 WS3F Specifications for working standard microphones
- Wide dynamic range, wide frequency range
- Suitable for ultrasonic measurement and explosion sound measurement

Specification parameters

Parameters	
Sound field type	Free-field
Polarization	0V (Pre polarized)
Frequency range	10 - 20kHz $\pm$ 2dB
Dynamic range	37.5dB (A) - 154dB (1000 Hz THD < 3%)
Inherent noise	<37.5dB (A)
Sensitivity mV/Pa(dBV/Pa)	(5 ± 1) mV/Pa (-46 $\pm$ 2) dB re 1V/Pa
Maximum output voltage	5.6V
Output impedance	<50 Ω
Power supply	Typical 4mA
Equalization method	Back-equalized
Interface type	Microdot (M5)
Temperature range	-30°C - 85°C
Temperature coefficient	-0.012dB/°C
RH	0% - 90% (no condensation)
Relative humidity coefficient	<0.1dB (0% - 90% no condensation)
Storage condition	Temperature: 25°C $\pm$ 5°C, humidity: 50% $\pm$ 15%RH (to ensure the long-term stability of the sensor)

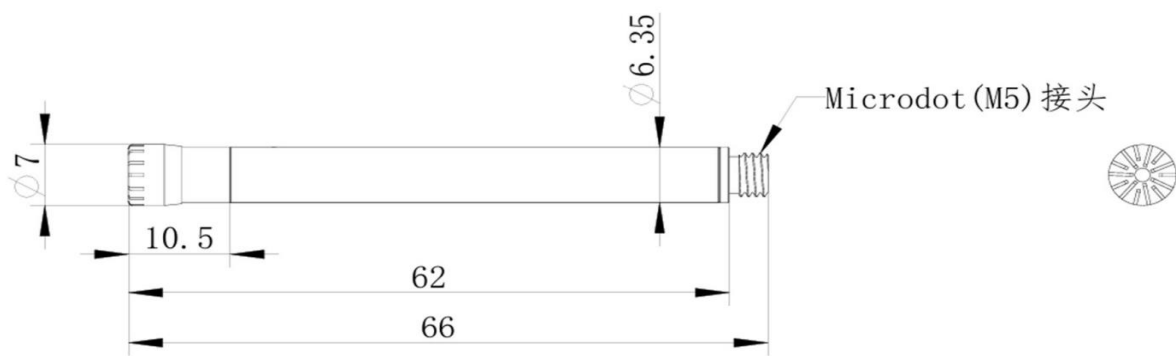
Frequency response



Mechanical dimensions

unit: mm

Dimension parameters	
Overall length (with protective grid)	66mm
Diameter (with protective grid)	7mm
Diameter (without protective grid)	6.35mm



Ordering Information

PN	Model	Description
900011-05	M 643+A 811	Free-field measurement microphone kit
900001-08	M 643	Free-field measurement microphone
900010-11	A 811	Preamplifier
730008-000	102C	Customized length_M5_BNC low-noise cable

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