

AB 04 自动声频射频屏蔽箱

产品规格书

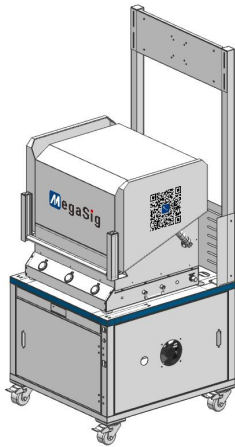
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产品简介



(AB 04柜子为选配件)

自动声频射频屏蔽箱

AB 04 是一款专门针对消费类电子生产线音频和射频测试而设计的中号尺寸屏蔽箱，目标在于为产品的音频测试提供一个稳定可靠的声学环境，同时外腔全钣金制造，保证了良好的电磁屏蔽。

该产品应用于要求优秀的射频隔离的同时，保证要比纯射频屏蔽箱要好的声学环境的场合，在有限的壁厚上实现 2 层复杂隔音层，并采用隔音绒布作为表面层，解决了使过程中尖劈老化破损而带来的不稳定的问题。

箱内设计有 3 组（6 路）气路，能满足产线应用中，要求箱内做自动化驱动动作的需求。

规格参数

整体参数	
屏蔽箱外尺寸 (不算柜子，气缸)	(W)550×(L)670×(H)580mm±5mm
屏蔽箱内尺寸	(W)410×(L)470×(H)395mm±5mm
整体尺寸 (屏蔽箱+柜子)	(W)730×(L)670×(H)1700mm±5mm
隔离度	声频：外界 85dBA，内部≤ 48dBA 射频：100M~6G，隔离≥ 55dB
工作电压	220V
BNC 接线端子数目	默认1 个端子(带6个BNC通道) 可定制增加
USB 接线端子数目	默认1 个端子(带4个USB通道) 可定制增加
3.5mm 接线端子数目	1个(可定制)
DC 接口	1个(可定制)
射频接口	6个(可定制)
开关类型	双气缸
程控	支持

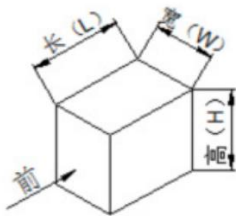
功能特点

- 音频射频双隔离
- 支持手动、程控双模式操作
- 双按钮设计，防夹手安全机制
- 丰富的接入接出端子，支持可定制
- 箱内内置3组气路
- 内表面采用耐用微孔棉，避免传统海绵易破损问题

隔层结构

由外至内：

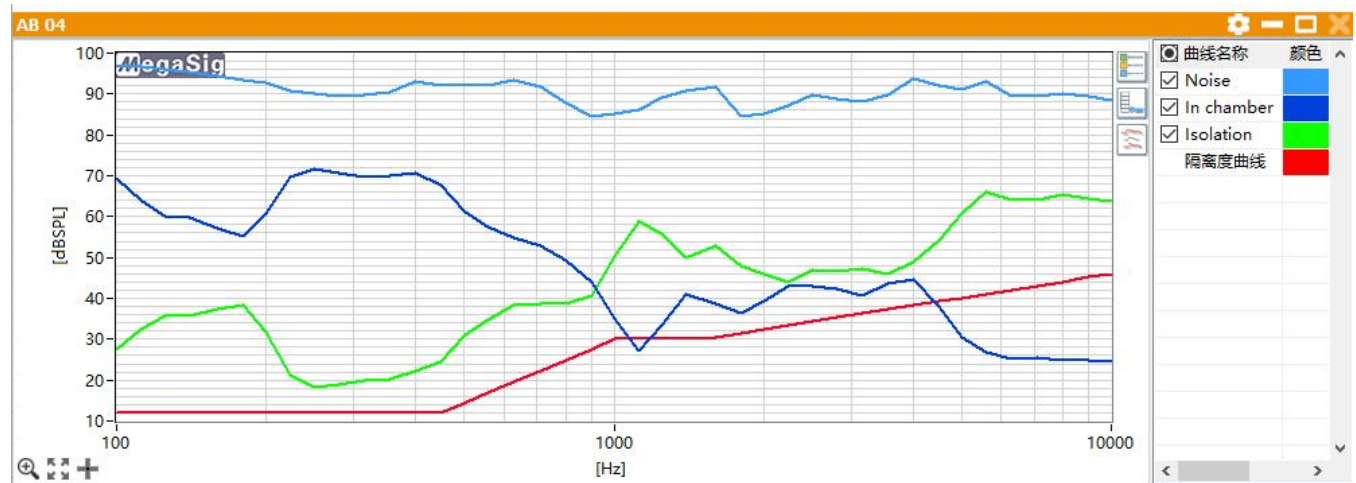
- 3mm 钢板喷塑
- 1 层 10mm 射频吸波棉
- 1 层 20mm 玻璃纤维棉
- 1mm 微孔棉表面



典型应用场景

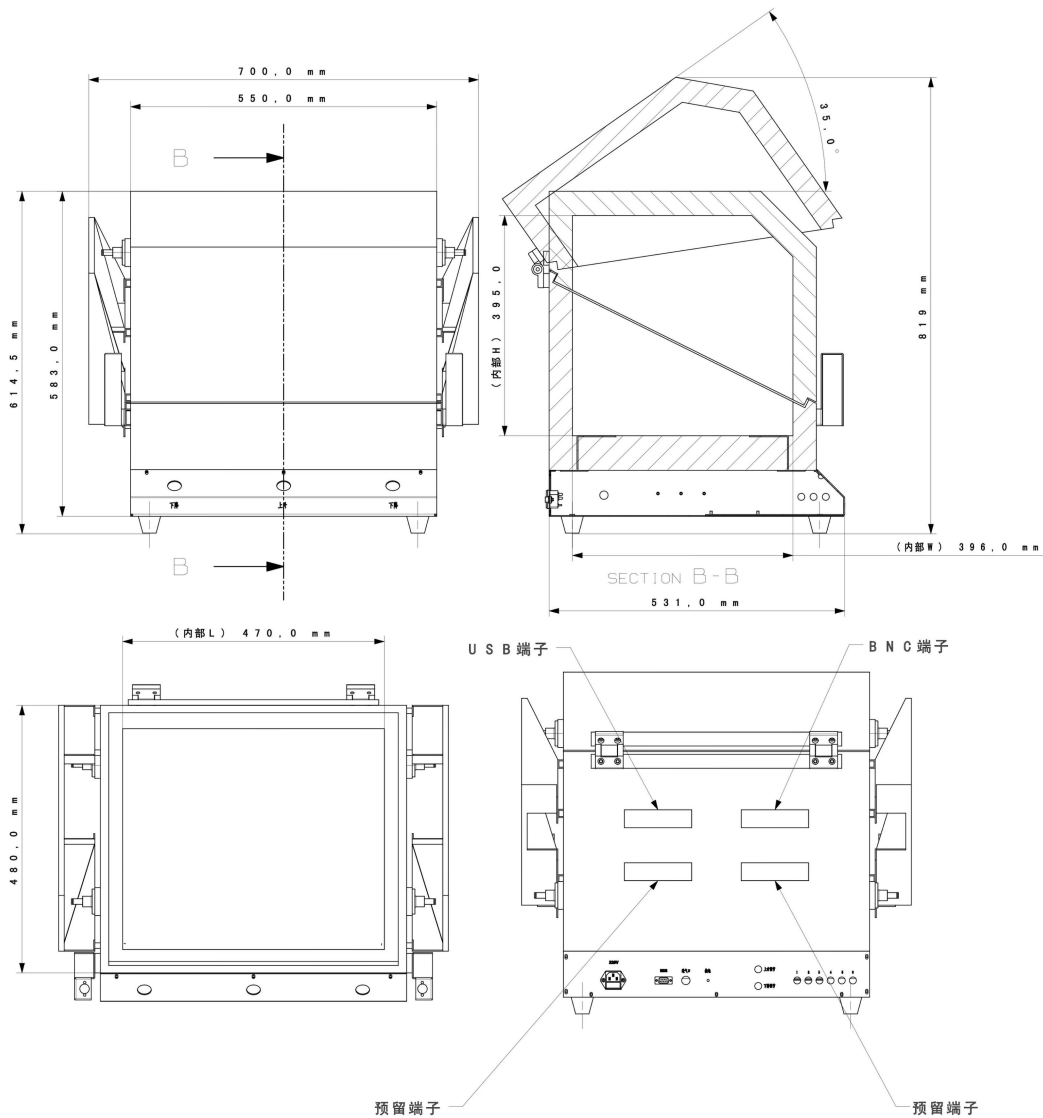
应用场景		
消费类电子	• 蓝牙耳机音频测试	• ANC耳机音频测试
	• 手机音频综测	• 单体电声音频测试
电机	• 基于电机产品的声品质测试	• 基于电机产品的阶次分析测试
汽车电子	• A2B车载音频总线功放测试	• A2B车载音频总线车机测试

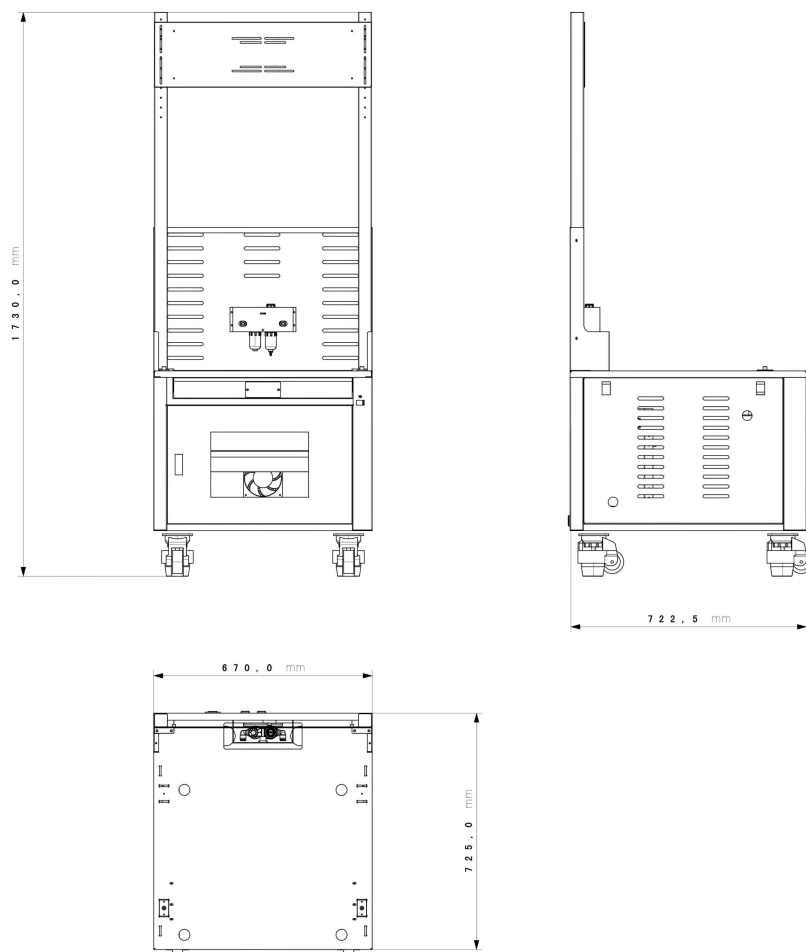
声频隔离度曲线



尺寸与结构

单位: mm





D 04机柜

屏蔽性能测试

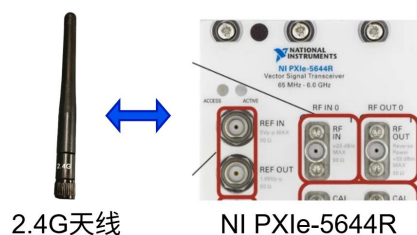
射频隔离度测试配置

测试设备:

- NI PXIe-5644R
- 2.4G 全向天线

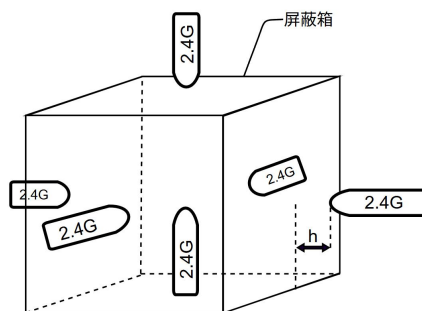
测试步骤

- 连接设备，将发射天线和接收天线通过RF电缆与NI设备对应的输入输出接口相连接。
- 通过固定器将接收天线垂直放置于屏蔽箱内部设定位置。
- 封闭屏蔽箱，设置NI仪器输出2.441Ghz, -10dBm信号，测量发射天线位于图中五个位置的信号幅值A。
- 根据测得信号幅值A与输出信号-10dBm的差值，得出该屏蔽箱的隔离度 $SE=A+10$ 。



2.4G天线

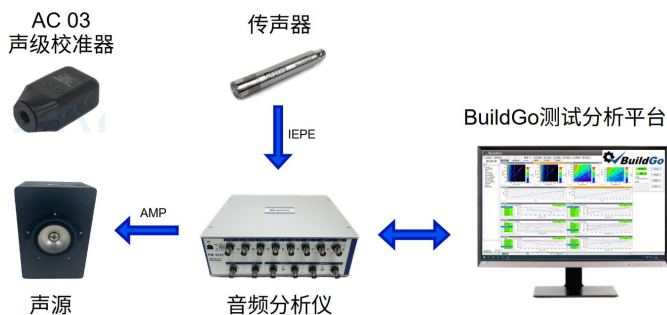
NI PXIe-5644R



声频隔离度测试配置

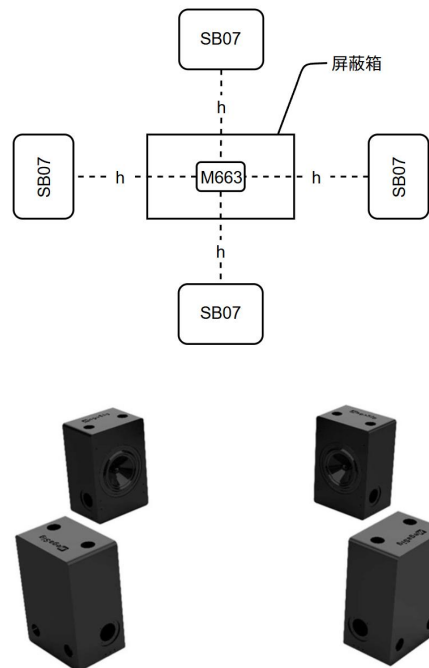
测试设备:

- 音频分析仪: PM6181
- A声源: SB07
- 传声器: M663+A802



测试步骤

- AC 03声级校准器对传声器进行软件系数校准。
- 在未放置屏蔽箱的条件下，将传声器放置到测试的中心位置，测试声源围绕传声器布置，并连接相应设备。
- 打开测试声源，音频分析仪输出具有连续频谱的噪声信号，同时获取传声器采集的第一噪声样本数据。
- 将屏蔽箱放置中心位置，传声器放置屏蔽箱内设定位置，并封闭屏蔽箱；输出相同噪声信号，获取传声器采集屏蔽箱内的第二噪声样本数据。
- 根据第一噪声样本数据和第二噪声样本数据的差值，得到屏蔽箱的隔声量随频率变化曲线。



若产品指标更新，恕不另行通知。

MegaSig

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AB 04 Automated audio and RF shielding box

Product Datasheet

V1.3_20250714_EN

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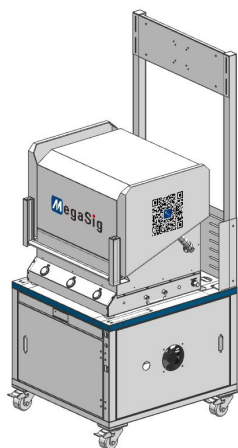
Product Introduction

Automated audio and RF shielding box

AB 04 is a medium-sized shielding box designed specifically for audio and RF testing in consumer electronics production lines. The goal is to provide a stable and reliable acoustic environment for product audio testing, while the outer cavity is made entirely of sheet metal to ensure good electromagnetic shielding.

This product is applied in situations where excellent RF isolation is required while ensuring a better acoustic environment than pure RF shielding boxes. It achieves two complex sound insulation layers on a limited wall thickness and uses sound insulation velvet as the surface layer, solving the problem of instability caused by aging and damage of sharp edges during the process.

There are 3 sets (6 channels) of air circuits designed inside the box, which can meet the requirements of automated driving actions in production line applications.



(Cabinets are optional accessories)

Specification parameters

Overall parameters	
Outer Dimensions of shielding box(Excluding cabinets and cylinders)	(W)550×(L)670×(H)580mm±5mm
Dimensions inside the shielding box	(W)410×(L)470×(H)395mm±5mm
Overall size (Shielding box+cabinet)	(W)730×(L)670×(H)1700mm±5mm
Isolation	Audio: Outside 85dBA, Internal≤ 48dBA RF: 100M ~ 6G , Isolation≥ 55dB
Working Voltage	220V
Number of BNC wiring terminals	Default 1 terminal (with 4 BNC channels) Customization to increase
Number of USB wiring terminals	Default 1 terminal (with 2 USB channels) Customization to increase
Number of 3.5mm wiring terminals	One(Support customization)
DC interface	One(Support customization)
RF interface	Six(Support customization)
Switch type	Dual Cylinder
Programmed control	Support

Features

- Audio RF dual isolation
- Support manual and programmable dual-mode operation
- Dual button design, anti pinch safety mechanism
- Rich access and output terminals, supporting customization
- Inside the box, there are three sets of air circuits
- The inner surface is made of durable microporous cotton to avoid the problem of traditional sponges being easily damaged

Structure

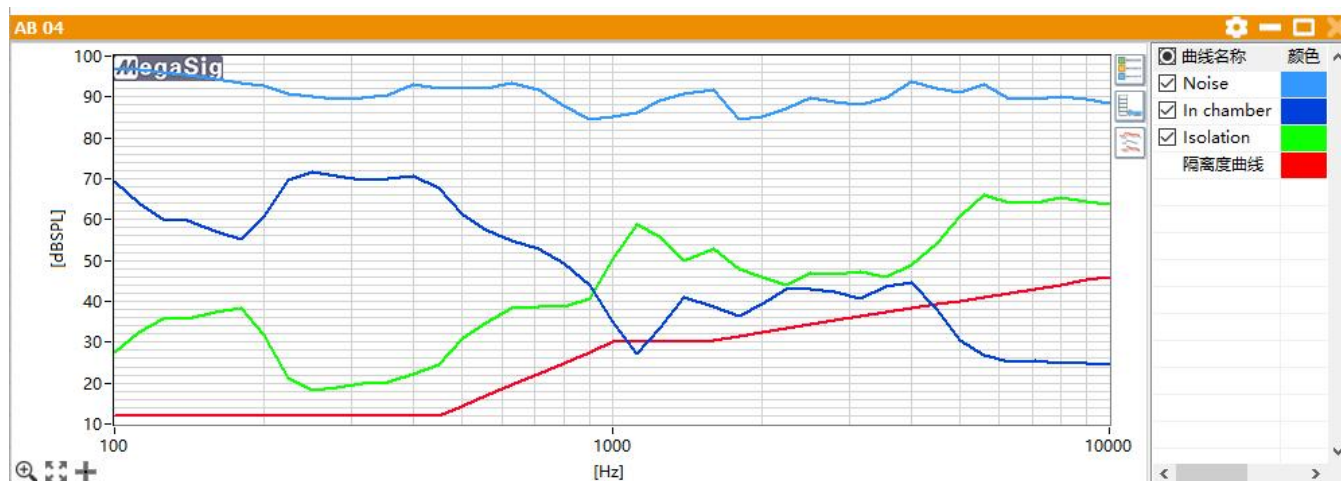
From outside to inside:

- 3mm Steel plate spray coating
- 1 layer of 10mm RF absorbing cotton
- 1 layer of 10mm Glass fiber cotton
- 1mm Micro porous cotton surface

Typical application scenarios

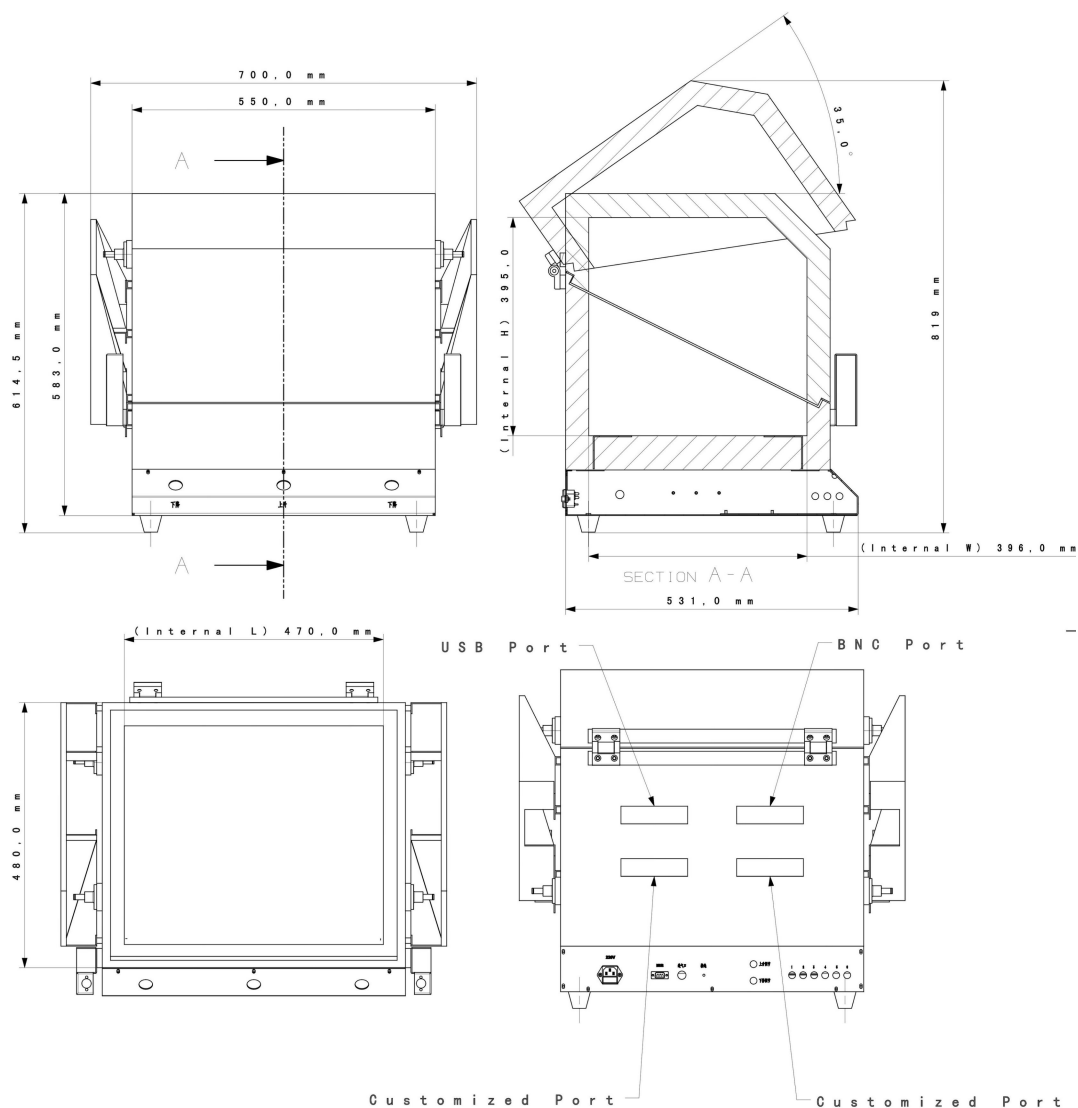
Application scenarios		
consumer electronic	• Bluetooth Earphone Audio Test	• ANC headphone audio test
	• Mobile audio comprehensive testing	• Single unit electroacoustic audio testing
electrical machinery	• Sound quality testing based on motor	• Order analysis testing based on motor
Automotive Electronics	• A2B Car Audio Bus Amplifier Test	• A2B Car Audio Bus Car Machine Test

Audio isolation curve

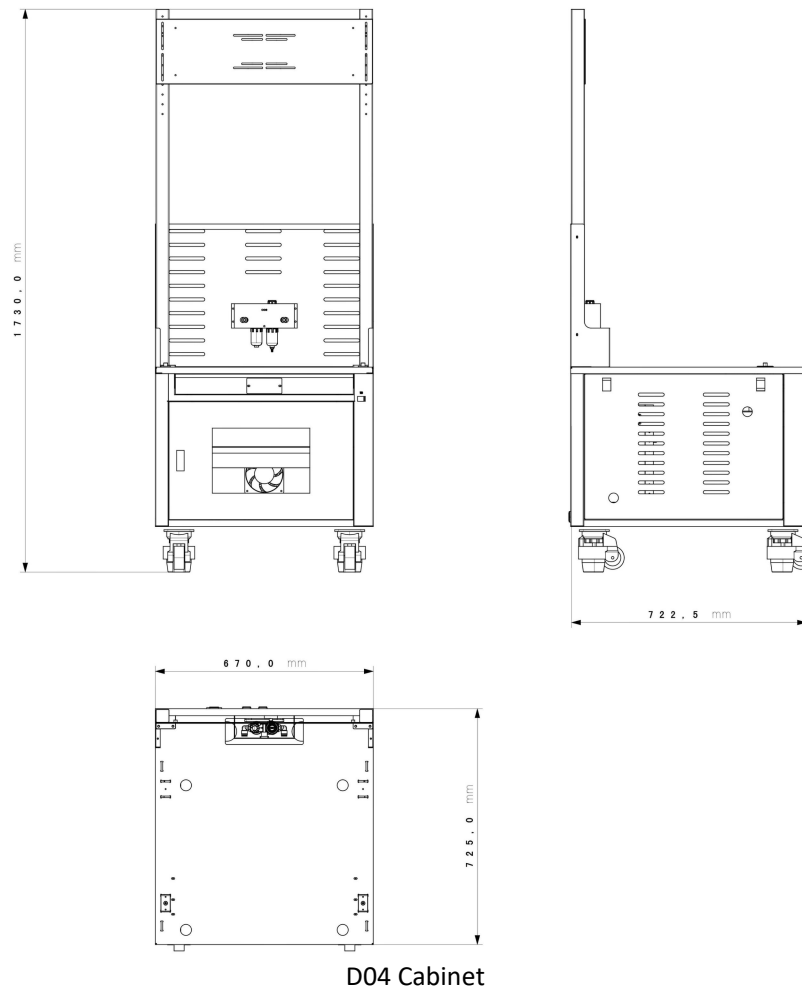


Size and Structure

Unit: mm



AB04 Box body



Shielding performance test

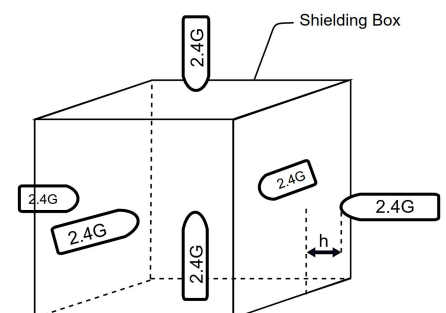
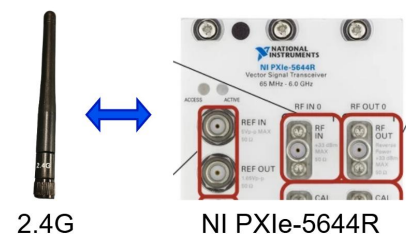
RF isolation test configuration

Testing equipment:

- NI PXIe-5644R
- 2.4G Omnidirectional antenna

testing procedure

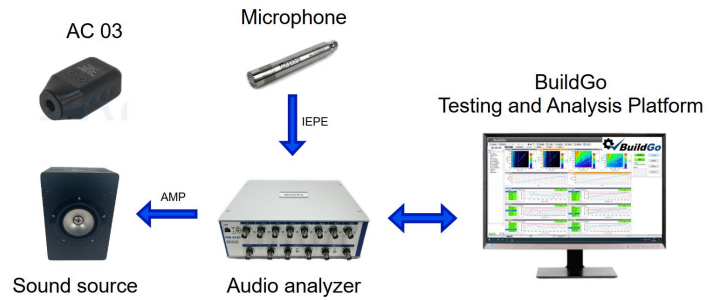
- Connect the device and connect the transmitting antenna and receiving antenna to the NI device via RF cable Connect the input and output interfaces.
- Place the receiving antenna vertically in the designated position inside the shielding box using a fixator.
- Enclosed shielding box, set up NI instrument to output 2.441GHz, -10dBm signal, and measure the signal amplitude A of the transmitting antenna located at five positions in the figure.
- Based on the difference between the measured signal amplitude A and the output signal of -10dBm, the screen is determined
The isolation degree of the shielding box is $SE=A+10$.



Audio isolation test configuration

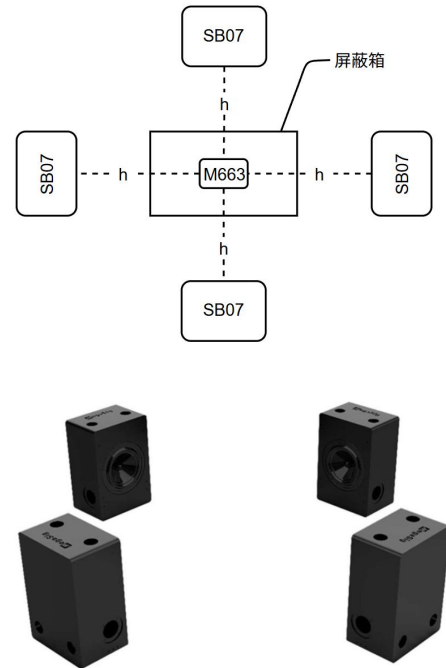
Test equipment:

- Audio analyzer: PM6181
- Sound source: SB07
- Microphone: M663+A802



Testing procedure

- The AC 03 sound level calibrator performs software coefficient calibration on the microphone.
- Without placing a shielding box, place the microphone at the center of the test, arrange the test sound source around the microphone, and connect the corresponding equipment.
- Open the test sound source, and the audio analyzer outputs a noise signal with a continuous spectrum, while obtaining the first noise sample data collected by the microphone.
- Place the shielding box in the center position, place the microphone in the set position inside the shielding box, and seal the shielding box. Output the same noise signal and obtain the second noise sample data collected by the microphone in the shielding box.
- Based on the difference between the first noise sample data and the second noise sample data, obtain the frequency dependent curve of the sound insulation of the shielding box.



If the product specifications are updated, no further notice will be given.


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