

Instruction Manual for Model AWA6161A Artificial Ear

I. Introduction

The AWA6161A simulated ear is an acoustic coupler that mimics the acoustic characteristics of the human ear. It can be used with a $\phi 12.7\text{mm}$ (1/2 inch) sound pressure level (SPL) capacitive testing microphone (AWA14422 type) and preamplifier (AWA14601B or AWA14604 type), or with a $\phi 23.77\text{mm}$ (1 inch) SPL capacitive testing microphone. It is used with accompanying audio measurement and analysis instruments to measure the electroacoustic characteristics of in-ear headphones. The AWA6161A simulated ear is designed and manufactured according to SJ/Z9144-1987 "Measurement of Couplers for Hearing Aids with In-Ear Headphones and In-Ear Headphones," which is equivalent to IEC60318-5 (IEC60126) standard. Therefore, this simulated ear is also known as the IEC60126 simulated ear or IEC126 ear. The photo shown in Figure 1 shows the assembly of the AWA6161A simulator ear, AWA14601B preamplifier, AWA14422 test microphone, and 1-inch to 1/2-inch adapter.



Figure 1 Photograph of the simulated ear

II. Artificial Ear Installation:

The simulated ear should be used with a sound pressure level (SPL) test microphone and a preamplifier. The installation sequence for these three components, corresponding to a 1/2-inch microphone, is as follows:

1. Screw the AWA14422 test microphone onto the simulated ear mount.
2. Screw the 1/2-inch to 1-inch adapter onto the threads of the AWA6161 simulated ear.
3. Using the 1/2-inch to 1-inch adapter, tightly insert the AWA6161A simulated ear into the AWA14422 microphone.

III. Artificial Ear Usage:

1. Insert the earphone to be tested into the AWA6161A simulated ear without any sound leakage.
2. All connecting threads should be precisely connected without any sound leakage.

Note: The test microphone in the simulated ear is a precision testing device. Handle it with care during use. Do not touch the diaphragm to avoid damage.

IV. Main Technical Specifications:

1. Frequency range: 125~8000Hz。
2. Frequency response accuracy: $\leq \pm 0.5\text{dB}$ (200Hz~5000Hz), $\leq \pm 1\text{dB}$ (<125Hz~8000Hz)。

3. Standard: IEC60318-5(IEC60126)。