

# AECM206 HEADPHONE TEST FIXTURE

for Acoustic and Electro-Acoustic Test



## Audio Precision and APx Series analyzers

Audio Precision is the recognized standard in audio test. For over thirty years, AP has offered high-performance audio analyzers, accessories and software to help engineers worldwide design, validate, characterize and manufacture a vast range of audio-related products and systems.

Our APx Series audio analyzers represent the state of the art in audio test, with models and options to suit every need from R&D to high-speed production test. Industry-leading performance, versatile software with a multi-mode UI, and a wide range of digital I/O and software options make APx a powerful solution for analog, digital and electro-acoustic test applications.

Headphone testing is complicated. The acoustic transmission paths involved in the close coupling of headphones, earphones and insert earphones (earbuds) to the ears must be considered; further, for measurements in noisy environments or testing ANC (active noise canceling) headphones, isolation is important.

## The AECM206 Headphone Test Fixture

The AECM206 complements Audio Precision's APx electro-acoustic testing solutions by providing a standards-compliant test accessory that simplifies headphone testing, at a substantial cost savings compared to a HATS (head and torso simulator).

The AECM206 is a massive, robust fixture mounted on a resilient base to aid in isolation. It is shipped as a complete system, ready to use, with the occluded ear simulators (microphones with acoustic couplers) and preamplifiers already installed in the fixture and connected to BNC-terminated coaxial cables. Two sets of pinnae are provided, along with disassembly tools, an adapter for the optional CAL250 calibrator, and product documentation.

The AECM206 is shipped in a foam-lined cardboard carton. It can optionally be ordered in a foam-lined hard travel case.

## APPLICATIONS

- R&D and production test
- Circum-aural, supra-aural and intra-concha headphone and insert earphone (earbud) test
- Noise-canceling performance test of ANC headphones
- Isolation test of hearing-protection ear muffs

## HIGHLIGHTS

- Shipped pre-assembled, ready to use
- Built-in IEC 60318-4 occluded ear simulators/microphones, with TEDS-enabled preamplifiers
- Includes two sets of symmetrical pinnae (hard and soft)

# AUDIO PRECISION AECM206 HEADPHONE TEST FIXTURE



AECM206 shown testing circum-aural and supra-aural headphones, and intra-concha earbuds.

## KEY SPECIFICATIONS

Height	37.8 cm [14.9 in]
Width	20 cm [7.9 in]
Cable length	1.5 m [5 ft]
Electrical connector	BNC
Weight, test fixture only	9.5 kg [21 lb]
Weight, as shipped in cardboard carton (-C)	12.8 kg [28.3 lb]
Weight, as shipped in optional hard case (-H)	14 kg [31 lb]
Operating temperature (electronics)	-40° C to 70° C [-40° F to 158° F]
Operating humidity	0 % to 90 % relative humidity, non-condensing
Excitation voltage	20 Vdc to 32 Vdc
Constant current excitation	2 mA to 20 mA
Output bias voltage	10 Vdc to 14 Vdc
Output impedance	< 50 $\Omega$
Output Voltage	$\pm 8$ V
TEDS compliant	Yes
Symmetrical pinnae, 2 sets	1 set hardness Shore OO-35, 1 set hardness Shore A-25

## ORDERING OPTIONS

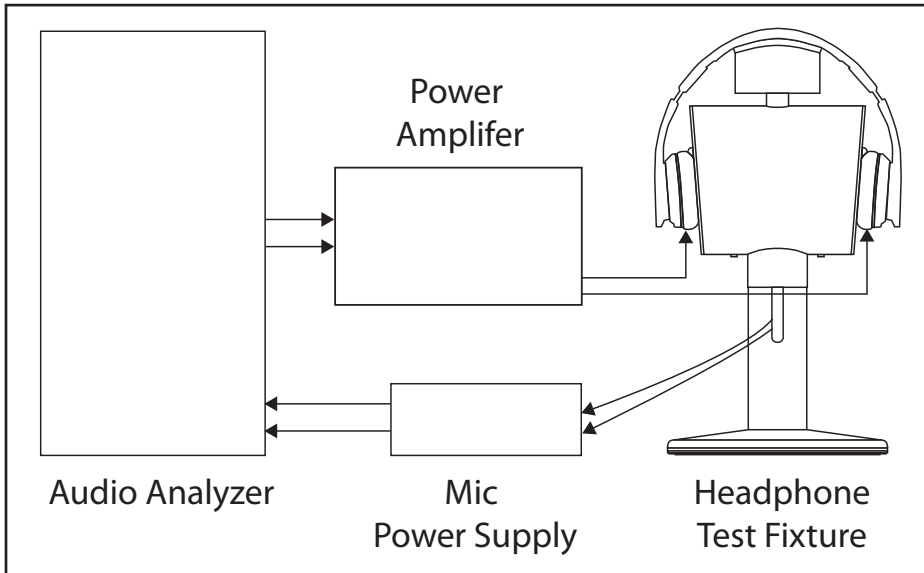
AECM206-C	AECM206 protected by contoured foam, shipped in a cardboard carton.
AECM206-H	AECM206 protected by contoured foam, shipped in a hard case.

## ACCESSORIES

APx1701	Transducer Test Interface
CAL250	Sound level calibrator, 250 Hz, 114 dB SPL
480B21	ICP® power supply/signal conditioner, 3 channels, x1, x10, x100 gain, battery powered
488B10	AC mains adapter for 480B21

## COMPLIANCE

IEC 60318-4:2010	AECM304 occluded ear simulators
ISO 4869-3:2007	For measurement of insertion loss
CE	Preamplifiers are CE compliant



Simplified diagram of a headphone testing application, with an audio power amplifier, an audio analyzer and a microphone power supply.

When testing with an Audio Precision analyzer, the power amplifier and microphone power supply can be replaced by an APx1701 (see below).

## CALIBRATION AND WARRANTY

The Audio Precision AECM206 Headphone Test Fixture is made in the United States. The fixture and its internal microphones are manufactured to the highest standards, using a combination of systematic quality control, the finest materials, and clean-room assembly. Each unit is qualified and comes with a traceable calibration certification, and is backed by a two-year warranty.

## APx1701 TRANSDUCER TEST INTERFACE



If you are making acoustic measurements with your AECM206 and an APx analyzer, consider adding an APx1701 Transducer Test Interface to your setup. The APx1701 provides the correct power to the preamplifiers and will read the TEDS data and pass it on to the APx500 measurement software. The APx1701 also features a high-performance two-channel power amplifier optimized for acoustic test, switchable hardware for loudspeaker impedance measurements, and complete control and automation integration with the APx500 measurement software.

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