



ACQUA hardware setup with a BEQ filter block (highlighted) for a HMS artificial head

## Description

The software extension coreBEQ enables labCORE to equalize the binaural ear simulators of HEAD acoustics artificial head measurement systems. coreBEQ consists of a software license key for one user-selected labCORE unit as well as a filter parameter set for one user-selected artificial head. After adding both to a labCORE unit, equalization can be applied by integrating the BEQ filter block into the measurement chain in ACQUA (see screenshot above).

For adequate equalization results, a filter parameter set is produced individually for each HMS system. The system's set of parameters for equalization is determined during production at HEAD acoustics. When coreBEQ(-Add) is requested, HEAD acoustics generates an individual filter parameter file based on this HMS system's parameter set. coreBEQ can be commissioned directly with the initial purchase or at a later stage.

A valid calibration of the artificial head is mandatory for precise equalization results. For older HMS systems and systems with expired calibration, a new calibration at HEAD acoustics has to be considered. The same applies to compatible third-party HATS, also depending on the exact model.

With coreBEQ, the following types of equalization become available in ACQUA for the ear simulators:

- Linear
- Free field (FF) with/without torso
- Independent of direction (ID)
- Diffuse field (DF)

With the optional software extension coreBEQ-Add, HEAD acoustics produces the equalization filter parameter file for one additional user-selected artificial head. The file can be used on any labCORE unit with enabled coreBEQ. labCORE allows to store a virtually unlimited amount of filter parameter files.

## Key Features

- Individual per-unit equalization of the binaural ear simulators in HEAD acoustics HMS systems
- Permanent storage of license key and filter parameter file(s) on labCORE for convenient use and full portability
- Full integration in ACQUA as easy-to-use real-time digital filtering

## Applications

- Performing measurements in receiving direction with HMS II.3, HMS II.4 or HMS II.6 and labCORE



ACQUA selection dialogue for the type of equalization

## DATA SHEET

### coreBEQ (Code 7740) coreBEQ-Add (Code 7741)

**Binaural equalization software extension, additional binaural equalization filter set**

## Overview

coreBEQ is a labCORE software extension for binaural digital equalization of an artificial head's ear simulators in ACQUA. The extension consists of a coreBEQ license key for one labCORE unit as well as equalization filters for one artificial head. The filter set is produced individually for each artificial head to ensure adequate digital real-time equalization.

For each additional coreBEQ-Add extension, HEAD acoustics generates an equalization filter set for another user-selected artificial head. Any labCORE with a coreBEQ license allows to permanently store a virtually unlimited amount of equalization filter sets.

## General Requirements

### Hardware

- **labCORE (Code 7700)**, Modular multi-channel hardware platform
- **Artificial head measurement system**
  - HMS II.3-3x (Code 1230.x) or
  - HMS II.4-3x (Code 1240.x) or
  - HMS II.6 (Code 1389) or
  - Compatible third-party HATS

### Software

- **ACQUA (Code 6810)**, ACQUA Standard: Basic analysis software, full-license version

## Delivery

- **coreBEQ (Code 7740)**, labCORE software extension for binaural equalization
  - **Initial equipping:** coreBEQ software license key and filter parameter set are stored on labCORE during production
  - **Retrofitting:** HEAD acoustics supplies the customer with the software license key and the filter parameter set

## Extensions

### Software

- **coreBEQ-Add (Code 7741)**, coreBEQ software extension for binaural equalization of one additional artificial head measurement system