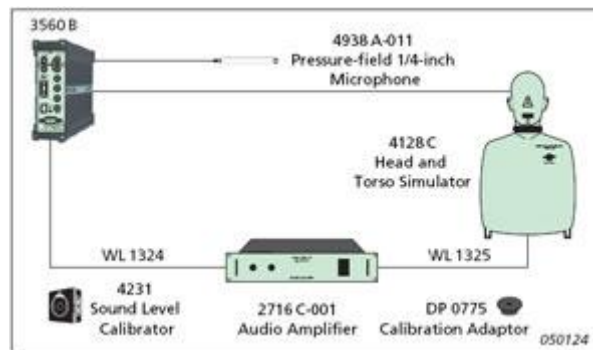


Audio Analyzer Options

For electroacoustic measurements three dedicated PULSE Audio Analyzer configurations have been designed. These configurations all include the PULSE Basic Electroacoustics Type 7797 software combined with dedicated PULSE hardware optimised for electroacoustic measurements:

- **PULSE Audio Analyzer - Type 3560-B-T63** with 25 kHz analysis frequency range, five input channels and one generator with 25 kHz frequency range
- **PULSE Audio Analyzer Dyn-X - Type 3560-B-X63** with 25 kHz analysis frequency range, five input channels and one generator with 25 kHz frequency range as well as an extended dynamic range of 120 dB
- **PULSE Professional Audio Analyzer - Type 3560-C-T60** with 25 kHz analysis frequency range, five input channels and two generators with 25 kHz frequency range.
- **PULSE Wide Range Audio Analyzer - Type 3560-C-T61** with 200 kHz analysis frequency range, two input channels and one generator with 100 kHz frequency range



Example of an Audio Analyzer configuration – Headphone and Headset Testing using Head and Torso Simulator

PULSE Basic Electroacoustics Type 7797:

This software enables measurements of basic output response and frequency response using the PULSE SSR Analyzer. The SSR Analyzer is unique in the way that a required accuracy for the measurement can be set by the user prior to starting the measurement. The SSR Analyzer will then produce a measurement with the requested accuracy as long as this is possible within the time limits specified by the user. Another unique feature of the SSR Analyzer is that it allows accurate measurements even in a noisy environment. By default the SSR Analyzer measures the frequency response as one analyzer input divided by the generator output. However, PULSE also supports frequency response measured between two different inputs. Frequency step range, frequency step size, step direction up/down, user-defined step frequencies as well as level step can be setup by the user. This software is a prerequisite for any of the following software options.

Type 7797 also enables simulated free-field measurements of basic output response and frequency response using the **TSR Analyzer**. The TSR method measures a time selective frequency response using a swept sine technique. The main advantage of this technique is its ability to reject noise and reflections. The TSR method allows evaluation of loudspeakers in a normal reverberant environment, thus avoiding the use of an expensive anechoic chamber.

PULSE SSR Analysis, Harmonic Distortion BZ-5548:

This software enables measurements of harmonic distortion using the SSR Analyzer. Up to 60 harmonic distortion products can be measured in parallel during a single frequency scan.

PULSE SSR Analysis, Intermodulation Distortion BZ-5549:

This software enables measurements of Intermodulation Distortion using the SSR Analyzer. Up to 10 intermodulation distortion products can be measured in parallel during a single frequency scan. The level ratio for the two frequencies can be set by the user.

PULSE SSR Analysis, Difference Frequency Distortion BZ-5550:

This software enables measurements of Difference Frequency Distortion using the SSR Analyzer. Up to 10

difference frequency distortion products can be measured in parallel during a single frequency scan. The level ratio between the two frequencies can be set by the user.

PULSE Directivity and Polar Plot BZ-5551:

This software controls Brüel & Kjær Turntable System Type 9640 and displays the directional response produced by the SSR Analyzer. The software also supports manual measurements at different angles.

PULSE Sequencer BZ-5600:

This software will automate measurement tasks that can be performed in PULSE using manual operations. The PULSE sequencer is based on PULSE concepts such as measurement templates, task layouts, macros, etc. With this software very complex and time consuming measurement tasks can be automated using the edit sequence and execute sequence controls of the PULSE Sequencer. The software should be considered as a non-programmer's alternative to the very extensive Visual Basic[®] for Applications programming environment that is also supported by PULSE.

PULSE Data Manager for Electroacoustic Applications BZ-5601:

This software allows measurement data to be stored and retrieved from a database. Data produced by PULSE SSR Analyzer, Brüel & Kjær Audio Analyzer Type 2012 and the Brüel & Kjær product family SoundCheck BZ-5320 can easily be stored in the database. A vast number of calculations and comparisons can be performed on data retrieved from the database, regardless of where the data originate. Furthermore, this software allows easy reporting of measurements.

PULSE Thiele Small Parameters Calculation BZ-5604:

This software calculates relevant Thiele Small parameters based on measured impedance of a loudspeaker or a receiver. The calculation supports the simple impedance method, the added volume method, the added mass method and the laser method.

PULSE TSR Analysis - Harmonic Distortion - BZ-5742:

This software enables measurements of harmonic distortion using the TSR Analyzer. Harmonic distortion products can be measured in parallel during a single frequency sweep.