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Getting Started with Verifit2 Binaural Real Ear Measurements: Flexible Setup to Binaural Sound Field Assist

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Audioscan

Advertorial

Audioscan is committed to providing clinicians solutions to assist with their day-to-day workflow for hearing aid verification. Our mission is to provide tools for clinicians to improve the patient experience by creating a more flexible verification setup and a more streamlined hearing aid verification process.

The flexibility of the physical setup of the Verifit2 allows for various configurations to adapt to your clinical space and workflow. Once the Verifit2 is set up, binaural real ear measurements can be conducted to expedite the clinical process of fitting and verifying hearing aids, resulting in additional clinical time for counselling and hearing aid demonstrations.

Physical Setup of Verifit2

For maximum utility, we recommend networking the Verifit2. The Verifit2 has both wired and built-in wireless networking capability. A network connection allows for the use of the Audioscan Noah module, *VerifitLINK*, remote console, printing and other functions.

The Verifit2 is a hybrid system, providing the benefits of both stand-alone and PC-based equipment. For all office layouts described the Verifit2 can either be operated stand-alone, or in “on-top” mode via our remote console.

The display/REM unit for the Verifit2 has a standard 100mm VESA mount. Any swingarm equipped with 100mm spacing (flush mount designs are incompatible) designed for a TV monitor can be used to mount to the wall. This frees up valuable desk space and allows the clinician to turn and position the display easily.

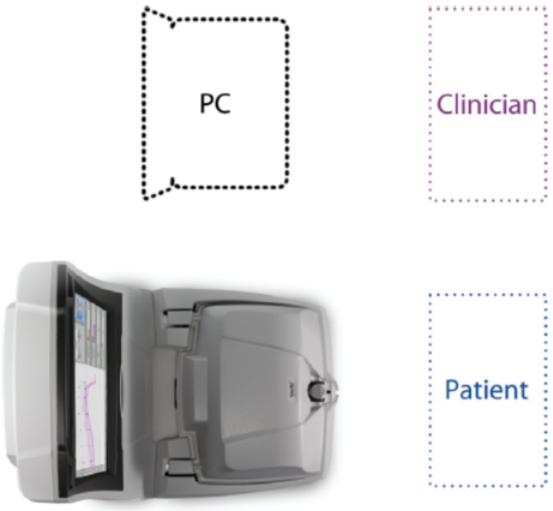
In all cases, an optional external speaker can be used for sound-field directional testing.

The Verifit2 includes an HDMI monitor output so an additional screen may be added.

Outlined below are four potential clinical setups with the Verifit2 allowing clinicians the opportunity to select the setup that best suits their clinical needs and workflow.

#1 Traditional

Benefits	Small footprint, centralized location, simple setup
Implementation Requirements	■ None ■ Wireless or wired networking (Optional)



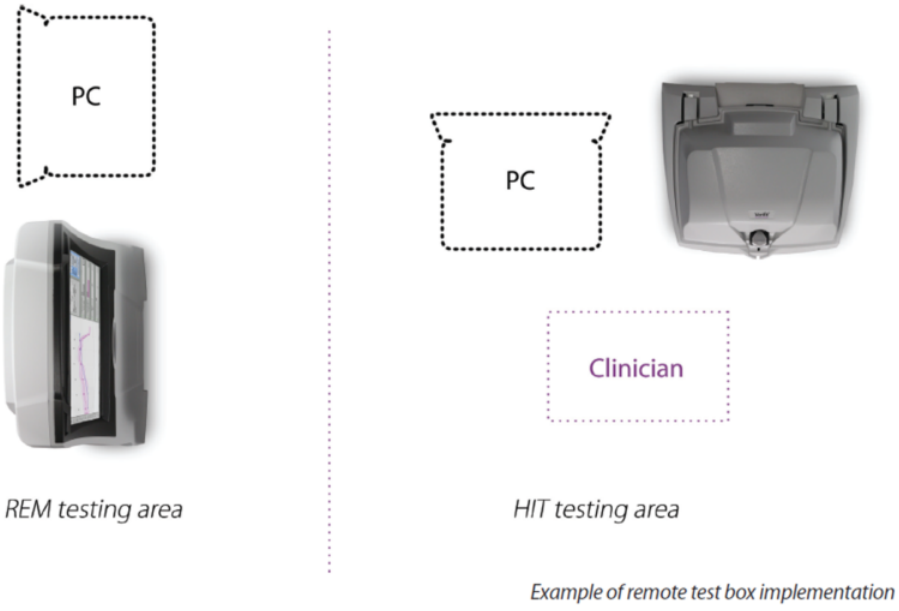
#2 Offset

Benefits	Moves the test box out of the patient's space, allows distinct REM and HIT areas within the space. Screen and REM speakers are close to the patient.
Implementation Requirements	■ Long test box cable if over 3' of separation ■ Wireless or wired networking (Optional)

#3 External REM	
Benefits	Impressive display for the patient. Allows clinician better access to the Verifit's built-in monitor. More flexibility in positioning the patient. Screen and REM speaker are close to the patient. External monitor can be used for patient counselling.
Implementation Requirements	■ Probe dock extension cable ■ External speaker ■ External monitor (Optional) ■ Wireless or wired networking (Optional)

#4 Remote Operation	
Benefits	Increased flexibility in clinical setup, where users can operate the Verifit 2 anywhere, so long as the Verifit2 and PC are connected to the same network.

Implementation Requirements	■	Wireless or wired networking between PC and Verifit 2
	■	Audioscan Noah Module
	■	Test Box extension cable (Optional)



Example of remote test box implementation

Binaural Real Ear Measurements with Verifit2

Now that the Verifit2 has been setup in an appropriate configuration, a clinician can begin conducting real ear measurements. Binaural real ear measurements (REM) run simultaneously can provide several clinical advantages including verification time savings, the ability to verify paired/streaming features, and quick identification of hearing instrument issues.

However, for the full potential of simultaneous binaural REM to be realized, it is important to ensure that the input signal received at each hearing aid is equivalent and as requested so accurate conclusions can be made. Unfortunately, the non-uniform acoustics of real-world fitting rooms mean that there can be significant variability in the input signal received at each hearing aid from a single loudspeaker during simultaneous measurements. While reference microphones can be used to measure and adjust the sound source to deliver the requested input at the measurement point, in a non-symmetrical environment, it is impossible to equalize a single sound source at two different locations (i.e., either side of the patient's head). This sound field variability, if not properly accounted for, can lead to measurement variability and inaccurate conclusions.

Current software updates for the Verifit2 include—Binaural Sound Field Assist (BSFA)—that delivers both measurement accuracy and time savings during simultaneous binaural REM.

Binaural Sound Field Assist (BSFA)

When using BSFA, the system analyzes the acoustic space before the test begins and compares the input signal received at each reference microphone.

- If the signal level at each reference microphone is within 2dB across frequencies, the simultaneous binaural test will begin.
- If the signal level at each reference microphone is significantly different across frequencies (>2dB), the system presents an interactive on-screen tool to guide repositioning of the patient until the sound field is equivalent between left and right ears.

BSFA will only appear when needed. Once the patient is positioned optimally, the requested REM will begin automatically.

1. Adjustment needed

2. Ready to complete test

Simultaneous Binaural in On-ear Speechmap

The BSFA tool is on by default in Verifit2 software versions 4.4 and later. To run tests simultaneously, select the L-R Link button on the Speechmap screen.

Upon signal activation, tests will first loop binaurally based on the averaged calibration values for the two reference microphones and live measurement curves will be displayed for both the left and right ears. When the record button is selected to complete the measurement, the BSFA tool will be shown if an adjustment to the patient's position is required.

Tips

- The BSFA tool will work best if the patient-to-speaker distance is no greater than 60cm (2 ft.).

- As with all real ear measurements, environmental sound can affect the measurement. Please keep the room quiet during the positioning assist step.
- BSFA can be turned off in *Setup/Speechmap.* When the tool is deactivated, and the link button is selected in Speechmap, a simultaneous binaural test will still be attempted. If the sound field is unbalanced, then the system will seamlessly switch into a sequential binaural mode and run two passages consecutively (left ear then right ear) using an ear-specific sound field calibration adjustment to ensure measurement accuracy.

Save Time with the Verifit2

Audioscan is committed to providing continual upgrades to the Verifit2. These upgrades to its fitting software are designed to improve the efficiency of the clinician verifying hearing aids. In addition to the binaural probe dock and BSFA, ProbeGuide™ was introduced by Audioscan as a tool to improve the ease-of-use and accuracy of probe tube placement. *VerifitLINK* was also released to speed up and automate the process of verifying hearing devices to target without sacrificing measurement accuracy. Binaural REM, ProbeGuide™ and *VerifitLINK* are useful tools for clinicians looking to adopt an efficient clinical workflow, allowing them more time to spend with their patients counselling, or demonstrating how to use their hearing aids.

If you have any questions please contact us!

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