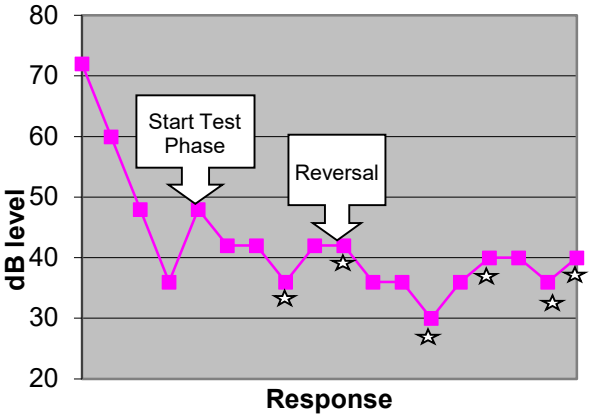
Phoenix3

The Phoenix3 Speech Discrimination Tester

Phoenix3	Phoenix3FM
The Phoenix3 is a simple-to-use upgrade to our original Phoenix system developed with the Institute of Hearing Research/Childrens Hearing Assessment Centre, Nottingham (IHR/CHAC). The new system is much smaller than the original device and has separate speakers for speech and noise. It is easy to use with its touch screen interface. The Phoenix3 system includes a battery-powered handset and speaker which are wirelessly connected for adaptive speech output. Using the algorithm developed by the IHR, the system will quickly produce a hearing threshold score. Also included is a Noisecube, which allows for continuous output of background noise at a level chosen by the user. This should normally be set to 60dB. This is a modern, portable replacement for the original Phoenix.	In addition, the Phoenix3FM includes a pair of floor stands for the speakers and a microphone holder for the FM system under test. These are carried in a separate case.

Introduction

The Phoenix3 Speech Discrimination Tester is the latest version of the popular Phoenix device originally released in 1998 by Soundbyte Solutions. It uses an algorithm developed by the by the Institute of Hearing Research (IHR) to adapt the presentation level of speech and noise (so the user does not manually score or change the levels). The algorithm will determine the level at which 71% of the presentations are correctly identified.



Institute of Hearing Research Algorithm

Evaluation of the algorithm and IHR/CHAC Automated McCormick Toy Test can be found in the British Journal of Audiology 1989, 23 245-429, and further evaluation in the British Journal of Audiology 1994, 28, 165-179.

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The original device was limited by having only the McCormick Toy Test (McTT) in one female voice. The Phoenix3 includes the McCormick Toy Test, the Arthur Boothroyd Short Word List (ABSWL) and the Bamford-Kowal-Bench (BKB) test in male and female voices. Both speech tests utilise the same algorithm.

Other improvements are:

- Smaller and lighter making it much easier to use in remote locations
- Separation between the Speech and Noise sources
- Wireless connection between handset and speaker
- Battery powered
- Continuous noise rather than gated noise
- Improved navigation interface and a full colour touch screen.
- Selection of background noise types
- Warble tone generator

Description

The system is extremely easy to set up and use. Simply position the speech and noise sources as required. They are calibrated at 75cm and 100cm so the user can select either distance for setup. The handset will automatically connect to the speaker when switched on. Select which test to perform then activate the Noisecube. There are 4 types of background noise available and the noise will be continuous for the duration of the test. The noises are wideband, narrowband, adult babble and class babble.

Begin the test.

After each speech presentation, you select if the subject identified the test word correctly or not and the algorithm will adjust the output for the next presentation. The hearing threshold is calculated and displayed at each step, and the test will end when 6 reversals.

Both the handset and speaker are battery powered and wirelessly connected to make it extremely easy for the user to move around.

The entire system including Noisecube, associated test materials and cables are housed in a convenient carry case.

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Specification

Handset	
Size	110mm x 70mm x 26mm
Weight	200 g
Battery	Li-Polymer Battery 3.7V 2000mAh
Range	Maximum output level 72 dBa Minimum output level 12 dBa
Calibration noise	Wideband noise (60dBa)
Display	LCD 320 x 240 pixels with LED backlight
User interface	60mm x 45mm full colour touchscreen display. The touchscreen is used to provide all user interface options making the device very intuitive and simple to use.

Speaker	
Dimensions	127mm x 120mm x 130 mm (WxDxH)
Power source	Li-Polymer Battery 3.7V 2000mAh
Driver units	1 x 10cm dual cone driver
Frequency response	95 - 22000 Hz (-10dB)

Battery Charger	
Charging voltage	5v dual output USB
Charging current	2.4 A max

Carry Case	
Overall dimensions	415cm x 290cm x 170cm
Overall weight	3Kg not including test materials
Contents	Custom made nylon carry case with zipped main compartment and external pocket for booklets and score cards. Main compartment contains machined high-density foam with cut-out for handset, with dividers for the speaker and toy box.