

# Starkey Press Release

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F O R I M M E D I A T E R E L E A S E

Starkey's new Precision Directional Imaging technology offers the highest directivity levels and is the first directional system available for true in-the-canal instruments.

MINNEAPOLIS – Hearing instrument wearers are often exposed to an enormous range of noise from various sources and directions that can overpower important sounds and conversations – many times leading to a less than satisfying hearing aid experience.



Although current digital technology offers unsurpassed sound quality and nearly distortion-free hearing, research shows that directionality remains the only proven method for improving speech recognition in noise.

Because hearing and more importantly understanding in noise is vital for amplification success, Starkey Laboratories developed Precision Directional Imaging (PDI). Working in conjunction with Precision Audio Imaging's high fidelity operating system, PDI improves speech understanding in difficult listening situations found in restaurants, parties and other loud environments.

Unlike manual systems, Axent II instruments equipped with PDI's dynamic algorithm continuously monitor signal strength in both the omni and directional modes. When the system senses that directional processing will provide noise reduction benefit, it automatically activates a pre-programmed directional pattern. Arista, Sequel and Endeavour feature user-activated PDI technology.

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## What Are The Advantages Of Using PDI?

PDI addresses the limitations of other directional systems with a variety of industry-first patient benefits. Intelligent features include:

- Dynamic switching based on environmental sound sourcing
- Starkey's highest directivity index (DI) levels for custom instruments
- Availability in true in-the-canal instruments
- Elimination of microphone drift issues
- Low noise performance
- Increased battery life

## Automatically Recognizes And Switches

Research indicates that hearing aid wearers using traditional, manually activated systems typically don't know or realize the appropriate situation to use the directional feature. PDI's dynamic system continuously monitors and senses signal strength and automatically activates a pre-programmed directional pattern when environmentally needed. Patients no longer need to recognize the situation and switch the instrument to a directional setting – offering more convenient and effective hearing in noisy situations.

## Superior Directivity Index Levels

Laboratory and clinical testing validated that PDI provides higher average DI values than other currently available custom instruments with directional systems. This is especially significant as research has indicated that every decibel of increase in DI can yield as much as a 14 percent improvement in speech understanding.

## Smaller, Smaller And Smaller

Because cosmetics play an important role in patient satisfaction, PDI was developed using a single microphone system. The reduced size allows for implementation in true in-the-canal instruments.

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## **One Equals More And Better**

The single microphone design also eliminates drift and yields significantly quieter directional performance. Multi-microphone systems can encounter variable and degraded performance due to a shift in the alignment caused by factors such as temperature and humidity changes. As little as one-tenth of a dB in drift is enough to significantly deteriorate multi-microphone performance.

## **Directional Candidacy**

While directional fittings are the only proven strategy to improve speech understanding in noise, only 30 percent of all hearing instruments sold in 2003 incorporated directional technology. There are a variety of factors and obstacles contributing to the low volume of directional sales. Cosmetics, size, directional performance, manual switching, noise performance, and microphone drift have all played a part in the industry's and more significantly, patients' non-acceptance of the technology.

The introduction of PDI addresses these challenges by offering the industry's most advanced digital directional signal processing with the smallest microphone package available. All parameters of PDI's intelligent directional performance were determined and verified through in-depth clinical testing and validation.

To learn more about the many benefits of PDI visit [www.starkey.com](http://www.starkey.com). Starkey encourages hearing professionals to learn how to better identify patients who may benefit from directional technology by reviewing "Candidacy For Directional Hearing Instruments." The white paper, written by Timothy D. Trine, Ph.D., Starkey Vice President of Hearing Research and Technology, outlines important strategies and approaches regarding the efficacy to make more confident directional recommendations. The white paper is also available online or by contacting Starkey at 800.328.8602.