

## Audio Loop Systems in Public Places

Installation and use of Loops in public places can greatly assist people who wear hearing aids with an activated telecoil

Many hearing impaired people, although they may be using hearing aids, have difficulty understanding speech in some situations. Theatres, cinemas, churches, transport passenger terminals, ticket offices and service counters may all present problems.

General background noise including nearby conversations, the effects of reverberation and distance from the speaker are the main causes of the problem. People with normal hearing are usually less affected by these conditions because they can focus to a greater extent on the sounds they want to hear.

There are several assistive listening devices that can significantly improve the situation for many people. One of the most effective is an audio induction loop system-known simply as a 'Loop'.

- A loop can be small enough to be used on a one to one basis or large enough to encompass a whole room or public hall.
- A loop can be used by a hearing aid wearer with an aid fitted with a T switch, simply by changing a switch position on the aid.
- Others can benefit from a loop by using a special device-a loop receiver.

### What Is a Loop System?

It is basically a loop of wire installed around the perimeter of an area where hearing impaired people may need listening assistance. The loop of wire is connected to the output of an audio amplifier. The amplifier may be connected to an existing public address system, microphone or other audio source such as a tape recorder, television receiver or radio.

The amplifier causes an electric current to flow in the loop. This produces a magnetic field that varies in the same way as the speech or music signals being amplified. This magnetic field can be picked up on a tiny coil that is installed inside a hearing aid or other special receiver. All the listener has to do to receive the amplified sound is to switch to the T or telecoil position on the hearing aid, press T on a remote control unit or use a special loop receiver with headphones.

### Are All Sites Suitable?

In an ideal situation the strength of the magnetic field is fairly consistent over most of the area inside the loop

A preliminary survey of the site is highly desirable before proceeding with loop design and installation. The performance of a temporary loop placed approximately in its final position would enable an investigation of possible interference. Any effects of the loop on other nearby equipment, such as an audiovisual system or computer terminals should also be monitored.

Metal used in the construction of a building or in fixtures, may cause changes in the loop's magnetic field and reduce its effectiveness. In addition the operation a loop system can be

adversely affected my magnetic interference from electrical powerlines and equipment. Spill over from nearby loops can sometimes superimpose signals into the looped area.

### **How Is A Loop Installed?**

Effective loops can be simply installed where the installation is remote from other loop systems. The loop can be placed around the room under the floor, along the skirting board or the picture rail, under the edge of the carpet or in the ceiling space if less than about 4 metres above the floor. The loop wire should not be coiled. Suitable amplifiers, microphones and accessories are available from a number of suppliers, some loop systems are in kit form with instructions for easy installation.

Large installations, eg those required in theatres or cinemas, or where more than system is to be installed in the same building need careful design. In these circumstances, it is recommended that advice be obtained from skilled technical people or consulting engineers. Acoustic consultants are recommended for advice on more complex acoustical situations, eg when stage shows are involved.

Installers of loop systems should use a magnetic field strength meter or other suitable device to ensure the performance complies with Australian Standard AS 1088.4-1987 over the area in which it will be used. They should also supply a customer with a method of checking correct operation.

More information? Contact [info@hearinglink.com.au](mailto:info@hearinglink.com.au)

Useful links: [www.wom.com.au](http://www.wom.com.au)  
[www.hearing.com.au](http://www.hearing.com.au)  
[www.shhhaust.org](http://www.shhhaust.org)