

Loop and infrared systems for people managing public venues

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on deafness, hearing loss
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Three facts

RNID 

Changing the world for deaf
and hard of hearing people

Loop and infrared systems – for people managing public venues

This factsheet is part of our **equipment** range. You should read it if you manage a public venue to find out how to make it more accessible to people who are deaf. We use the term ‘deaf’ throughout to refer to all kinds of hearing loss.

Read this factsheet to find out:

- How can induction loop and infrared systems help people who are deaf?
- What is an induction loop?
- Where can I put my induction loop?
- What problems can affect loop systems?
- What do I need to remember when I install a loop system?
- How do I maintain my loop system?
- What is an infrared system?
- What sort of public places are suitable for a loop or infrared system?
- How much do induction loop and infrared systems cost?
- How can I help people get the most from the system?
- Where can I get further information?

If you are deaf or hard of hearing, read our factsheet **Loops and infrared systems – for people who are deaf**.

How can induction loop and infrared systems help people who are deaf?

People who are deaf can find it difficult to hear in larger venues because of poor room acoustics. The problem is made worse by:

- the distance that sound has to travel to reach the audience
- background noise
- competing sounds.

Induction loops and infrared systems help overcome these problems.

What is an induction loop?

An induction loop is a cable that encloses the audience area. It transmits sound in the form of a magnetic field that can be picked up within the coverage area by hearing aids switched to the loop (T) setting. Users may need to adjust their hearing aids for volume. You can supply loop listening receivers to people who do not have suitable hearing aids. Loop systems cannot normally be used to convey stereo sound.

Where can I put my induction loop?

The loop cable is often run around the edges of a room to serve the entire audience area. Sometimes, however, it only encloses a particular seating area. It can also be routed over doors and arches. This doesn't affect how the loop works.

What problems can affect loop systems?

External factors may affect how well a loop works. You can ask the installer to fit a temporary loop first as a test. If this works correctly, you can then install the permanent loop with confidence.

Overspill

Loop systems are designed for users close to or within the area of the loop, but there is nearly always some overspill, as walls, ceilings and floors do not block magnetic fields. This means hearing aid users outside the looped room area may be able to overhear conversations if their hearing aids are switched to the loop (T) setting. You should think carefully about this if you want to fit more than one loop or want to use an induction loop for confidential meetings. This is especially important if you provide advice on sensitive personal issues such as medical or legal consultations, or in court and tribunal rooms. If this is a potential problem, you could consider an infrared system instead (see page 4, *What is an infrared system?*).

Interference to other circuits

In some circumstances, an induction loop may cause interference in other parts of a sound system. This can happen if the loop cable runs close to other audio cables and microphone cables are especially vulnerable to this kind of interference. Carefully routing the cables normally prevents this problem.

Metal in buildings

This can have an unpredictable effect on loop systems. The loop may produce a weaker inductive signal than expected if the metalwork in the area of the loop is substantial, and the signal strength may vary from seat to seat in the listening area. A qualified loop installer may be able to predict this and suggest solutions, but installation is likely to involve trial and error.

What do I need to remember when I install a loop system?

British Standard Code of Practice

Loop systems in public buildings should be installed to the British Standard Code of Practice for Audio Frequency Induction Loop Systems BS 7594. If your installer confirms that the work is to this standard, it should mean that your induction loop system is designed and installed to professional standards, works properly, and meets regulations. The loop itself should also conform to BS EN 60118-4:2006.

Monitoring

Once it has been installed, the induction loop system should be set up in accordance with the code so that it generates the correct level of inductive signals for hearing aid users. You should ask the installer to demonstrate this to you. Once the system has been set up, its controls should be 'locked' to stop unauthorised people from changing them. It is a good idea to note the settings.

How do I maintain my loop system?

Regular checks

Test the loop regularly, preferably weekly, but how often will depend on your venue. In practice, many building managers rely on a listening test using a hearing aid or loop listener for routine checking of the system. If you are testing your buildings fire alarm system it might be worth checking the loop system at the same time.

Portable loops

Portable loops are typically designed to cover a small area and can be packed away after use. They are useful if you do not need a permanent system or if you need to use the loop in different rooms. Make sure they are switched off after use and fully charged.

What is an infrared system?

Infrared systems transmit sound as invisible infrared light to wearable receivers. They are fairly easy to install, can provide high-quality sound and are available in stereo versions. You may need one or more infrared transmitters, depending on the size of the venue.

Using receivers

You are responsible for buying and providing the receivers. Anyone using the receiver can sit anywhere in the area covered by the transmitters. The infrared light produced by the transmitters usually reflects off walls and surfaces in and around the coverage area. So sound should be received anywhere in the covered area, but some wall coverings absorb infrared light, meaning that the receivers will only work when they are pointed towards the transmitters. This can be a problem, as users may lose sound if they turn away from the direction of the radiator. Your installer should be able to advise you how to make sure coverage is adequate in these circumstances.

The most widely used kind of infrared receiver is used without a hearing aid but you can get a different kind of receiver for use with hearing aids. You will need to stock both types of receiver and keep the batteries in the receivers fully charged.

Interference

Infrared systems are not usually prone to interference unless the receivers are in direct sunlight. The transmitters do not transmit outside the room they are used in, so several systems can be used at the

same time in rooms next to each other. For this reason, they are also suitable for confidential meetings.

What sort of public places are suitable for a loop or infrared system?

These systems are most often used in places like theatres, cinemas, places of worship, meeting rooms, conference halls and lecture rooms. You will also find loop systems in places you pass through, such as airports, shopping centres and bus and train stations.

The size and purpose of your venue may influence the type of system you install. Small counter loops, for example, are useful for bank or ticket office windows with a glass screen between staff and customers. But make sure that the glass is non-reflective so that your deaf customers can also lipread the person who is serving them.

How do I know what is suitable?

Contact an installer for advice about the sort of system that would be best for your building.

How much do induction loop and infrared systems cost?

A loop in a small meeting room may cost a few hundred pounds. A professionally installed loop in a big venue can cost several thousand pounds. Infrared systems tend to be more expensive than loops because you need a stock of receivers see 'Using receivers' on page 4.

Some organisations install cheaper systems designed for domestic use in their smaller rooms, but check first that this sort of system is suitable and that it meets health and safety requirements.

How can I help people get the most from the system?

Let customers and staff know you have a system in place

Equipment suppliers and installers usually provide signs that you can place in your marketing material and at the entrance to your building to show you have a system in place. Suitable signs and symbols for induction loops are given in British Standard Code of Practice BS 7594.

Or, you can download a loop sign from our website. Visit rnid.org.uk/loops and download a sign from the 'Loop signs' section.



Make sure your staff know how to use the system

Tell your staff what the loop system does and how to maintain it.

- Check the loop system is always turned on during opening hours.
- Test that the volume of your loop is set correctly.
- Make sure your loop is regularly inspected.

If customers cannot use the system because your staff have not been trained to use it, then you could be in breach of the *Disability Discrimination Act 1995*. Read the information on our webpage www.rnid.org.uk/loops and read our factsheet **The DDA for service providers**.

Find out what your customers think of your system

Ask your customers to tell you how useful they find your system. A short questionnaire is a good way to get feedback from a large number of people. You could also set up a small panel of people to give more detailed, regular feedback.

Microphone technique

The quality of the signal your system produces can only be as good as the signal it receives. Loop and infrared systems do not improve signal quality – they simply reproduce what is fed into them. It is easy to get a clear signal when someone speaks directly into a microphone. The further the sound has to travel to reach the microphone, however, the poorer the sound quality, particularly if you have poor room acoustics or background noise. Place the microphone as close as possible to the person speaking. This is fairly easy if speakers remain in the same spot. It becomes more difficult when speakers sit in different positions or move around. If this is the case, you will need to carefully choose the correct type and location of microphone(s).

Operating the system

You can leave some infrared or induction loop systems on all the time. Otherwise you will need to turn your system on before each performance. Even with lots of microphones, or other audio sources such as tape or CD players, the controls on the mixing console are usually set up and fixed. You will need someone to operate the mixing console during the performance if the system is part of a larger sound system.

Keeping the system running and customer care

Make sure that at least one named person is responsible for keeping the system up and running in your building. With an infrared system, designated staff should be responsible for looking after the receivers and giving them out to users. In major venues, it is good practice for users to be able to contact at least one member of staff if there is a problem during performances. All staff who have contact with customers should also know about the system. Both infrared and induction loop systems should be serviced regularly.

Does my organisation need a licence?

No. You do not need a licence to operate a loop or infrared system. However, induction loops do have to conform to the standard BS EN 60118-4:2006. Also, loop systems in public buildings should be installed to the British Standard Code of Practice for Audio Frequency Induction Loop Systems BS 7594.

Where can I get further information?

British Standards Institution (BSI)

The BSI produces the *British Standard Code of Practice for Audio Frequency Induction Loop Systems*, the essential reference for anyone installing or operating an induction loop system in a public place.

BSI, Customer Services, 389 Chiswick High Road, London W4 4AL

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Information from RNID

Our Information Line offers a wide range of information on many aspects of deafness and hearing loss. Contact us for further copies of this factsheet and our full range of information factsheets and leaflets. You can also contact us if you would like information in Braille, on audiotape or large print.

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Equipment from RNID

Visit www.rnid.org.uk/shop for up-to-date information about products covered in this factsheet, or contact the RNID Information Line for a copy of our *Solutions* catalogue, featuring a wide range of equipment for people who are deaf.

Advice from RNID

Contact RNID Products for surveys and installations of: induction loops, infrared systems, installed and portable counter loop systems.

RNID Products

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