



AMPETRONIC

Listen to the difference

Ampetronic audio induction loop systems bring intelligible sound back to the lives of millions of people throughout the world whatever they choose to do.

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The British Museum
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GLA building



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Derby County
Football Stadium

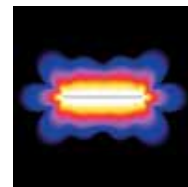
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Who we are

We are recognised world leaders in the design and manufacture of Audio Induction Loop Systems - the most widely adopted assistive listening technology for the hearing impaired.

'One in seven people have a hearing disability'

Since 1987, we have been providing complete solutions for almost any assistive hearing application. We have a genuine desire to make a real difference to the quality of life of hearing aid users and are committed to delivering the very best systems for installers, facilities managers and specifiers.

'Simply increasing the volume does not help - its all about separating the signal from the noise'

Adopting a 'tick box' approach to legislative compliance gives no guarantee of performance, reliability and most importantly, end user experience.

The right products are only part of the solution. By choosing Ampetronic you are assured of a professional and integrated approach to determining the very best solution with ongoing support from our unique and dedicated design and consultancy team.

'Customers remember the experience - not that you were first to tick the compliance box'

Our innovative and patented technology delivers sound clarity unrivalled by other systems.

Our vision, quite simply, is to bring intelligible sound to life for the hearing impaired.

What are Induction Loops?

Ampetronic Induction Loop Systems are solutions for assistive listening, providing access to high quality intelligible sound for the hard of hearing. Assistive listening benefits a large and ever growing section of society. Hearing impairment affects one in seven of us, a number that is increasing as the population ages. The deaf community are increasingly aware of the solutions available to assist them, increasing end-user demand for assistive listening solutions. Legislation is also accelerating across the world to encourage or mandate the use of Induction Loop Systems.



What do Ampetronic Induction Loops do?

A loop system transmits an audio signal directly into a hearing aid, greatly reducing background noise, competing sounds, reverberation and other acoustic distortions that reduce clarity of sound. The diagram to the right illustrates how they work.

Induction Loops can be beneficial in many environments, from large venues such as theatres and conference facilities, to one-to-one communications such as ticket counters and meeting rooms. They are the only effective solution for transport environments, in vehicles, terminals and stations.

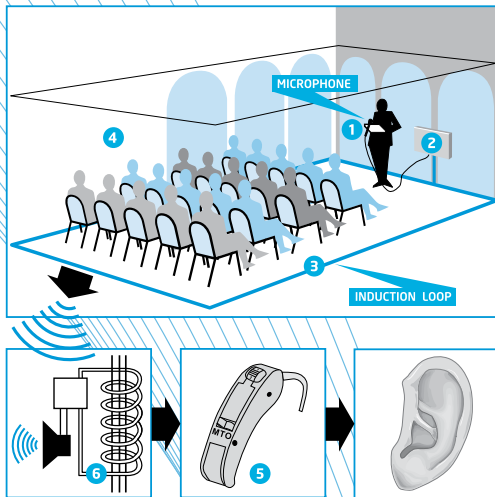
What are the unique benefits of Induction Loops?

Highly cost effective. The only technology that requires no receivers to be bought managed or maintained.

Use in 'transient' environments. The only possible solution where a user is passing through, such as at counters, or in transport networks.

Invisible, but always there. Individuals do not have to ask anyone to receive help, they need only switch their hearing aids to the 'T' position to hear clearly. The service provider has, no receivers to manage or maintain.

The most versatile technology. Ampetronic provide tailored solutions for any environment, from a minibus to an airport, from a ticket booth to a conference hall. No other system comes close to this flexibility.



How do our Induction Loop Systems work?

Audio Inputs 1, either from an existing audio source such as a P.A. system or from dedicated microphone inputs feed an audio signal into an **Induction Loop Amplifier 2**. The amplifier drives a current into a **Loop 3** or series of loops. As the current flows through the cable it creates a **Magnetic Field 4** in the required area – careful loop and amplifier design ensures that the vertical component of the field is even and free of drop-outs and dead zones wherever the user might be. Inside most **Hearing Aids 5**, a small coil known as a **Telecoil 6** picks up the magnetic field signal, which is amplified into a high quality audio signal delivered directly to the ear of the Hearing Aid user.

Case Study

Wales Millennium Centre

The architecturally stunning Wales Millennium Centre is an exciting cultural initiative and host to international musicals, opera and dance.

Ampetronic equipment is installed throughout the Centre, meeting the demanding requirements for multiple theatres, bleacher seating, balconies, rehearsal rooms, studios, public galleries, 5000 tonnes of structural steel and many separate systems in close proximity.

Using our unique Loops™ design tool and Ultra-low Spill™ systems we were able to design systems to satisfy all of these requirements.



Wales Millennium Centre.

Why Ampetronic?

Our Core Principles

From delivering support services to designing product solutions, all of our work is built upon our core principles. Principles that ensure excellence in all that we do, and keep our customers coming back time and time again.



Experience

Since 1987 we have been working with organisations, communities and governments across the globe. We combine our many years of experience with a commitment to provide the very best solutions for all assistive hearing requirements. The Ampetronic vision, values and integrity are as strong today as at its foundation by Leon Pieters, a world renowned audio induction loop system expert.



Innovation

We continually push the boundaries of induction loop technology, bringing assistive listening into new environments. We were the first to recognise and compensate for the effects of metal structures, with low-loss systems and frequency compensation. Our Ultra-low Spill™ technology is the only effective way to eliminate overspill for adjacent areas or confidential applications. Our novel solutions for harsh environments and extreme reliability performance are ideally suited for transport environments.



Intellectual Leadership

We are on the forefront of development of both technologies and applications. We continually strive to improve standards and raise awareness and are represented on international committees and professional associations for legislation and standard development. We regularly contribute to education through journals, seminars, and conferences, together with training and education programmes. Our leadership ensures that our customers receive advice based on the most up to date thinking, and a solid understanding of the latest technologies.

Quality

Quality underpins our business, from our relationship with our customers to the performance of our products. All systems are CE compliant, developed and manufactured to the requirements of ISO 9001. We are the first and only company to gain US / Canada approvals for mains powered amplifiers. Our systems meet safety and reliability standards for the toughest environments. We are also members of PLASA, the association for the lighting and sound industry, abiding by their standards and codes of practice.

Case Study

British Museum

The 3D IMAG Virtual Mummy experience at the British Museum truly captivates the audience as it takes them back to ancient Egypt through the eyes of the Mummy.

To enhance the experience for the hearing impaired a high fidelity assistive listening system was required for this transient environment capable of handling separate programmes without cross-talk. Ampetronic's Ultra-low spill™ technology was the obvious solution.

This proprietary technology limits the magnetic radiation to within one metre of the loop perimeter, equivalent to an acoustic barrier. Ampetronic's professional loop drives and custom loop design provided excellent performance for this challenging application.



Why Ampetronic?

Our Products and Services

Building on our core principles, our comprehensive range of Products and Services combine to form a complete solution for your needs, whatever your application.

PRODUCTS

Reliability

Our reputation is built on extreme reliability providing the lowest lifetime cost in the industry. Every product comes with a 5 year warranty, though it is rarely used - our first amplifier, shipped in 1987 still works today, without any maintenance. Ampetronic products are truly fit and forget, needing no ongoing service and maintenance.

Comprehensive Solutions

We provide complete equipment solutions for your application. We have solutions to meet the most simple to the most extreme environmental, EMC and safety requirements. 'Stackable' amplifiers cover the largest conceivable arena. Ultra-low Spill™ systems can be used for confidential or adjacent environments. Installation accessories include cables, copper tape and adhesive warning tape, for all installation requirements. Audio input systems including microphones, mixers and adapters to accept any signal. Proprietary test and measurement equipment allows monitoring and measuring of your system performance.

Bespoke Products

We can tailor products to your requirements. Equipment can be custom designed for your specific needs including integration into other systems, for example our OEM systems found in help points in the London Underground. Custom layouts or self contained loop units can also be tailored to any installation environment.

Performance

Our products provide excellent performance, through innovation and a commitment to provide real benefit to the end user. Proprietary compression technology gives natural and clear sound for both music and speech - the only systems free of distortion and clipping. High voltage outputs, unique to Ampetronic, preserve vital intelligibility in high frequencies. Our systems are also uniquely able to drive rooms with high aspect ratios, or with multi-loop arrays.

SERVICES

Comprehensive Support

Our dedicated Support Team provides an unrivalled level and quality of service, free of charge to our customers. We provide advice and guidance on any aspect of system design, installation, maintenance and problem solving. Extensive support is offered through our website or telephone service, backed up with design guides and technical literature to help you to get it right first time.

Design and Consultancy

Our design and consultancy service is unique within the industry. We can work in partnership with you through every stage. We can assist with initial discussions, system specification, site surveys and feasibility studies. Our design service provides validated designs for loop layouts for your installation. We can also give you on-site support, from survey to commissioning.

Training

To raise and maintain the standard of induction loop systems we promote best practice through our training programmes. Our training aims to provide a foundation for the professional installer leading to Ampetronic preferred installer status. Courses provide all of the knowledge required to deliver a perfect design and installation.

Independence

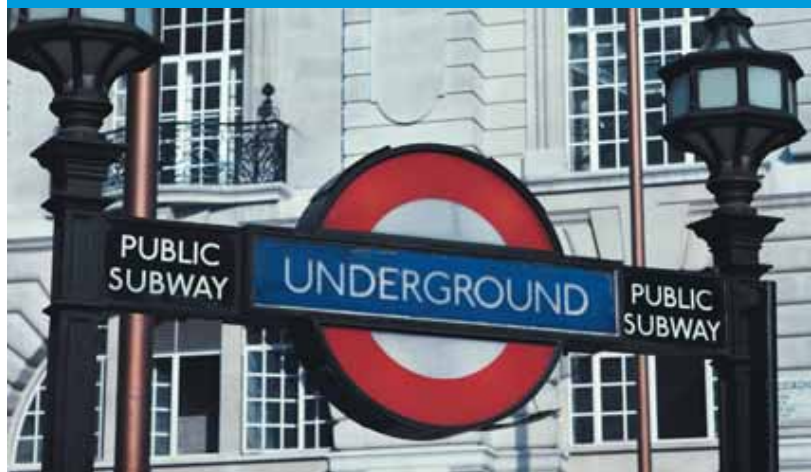
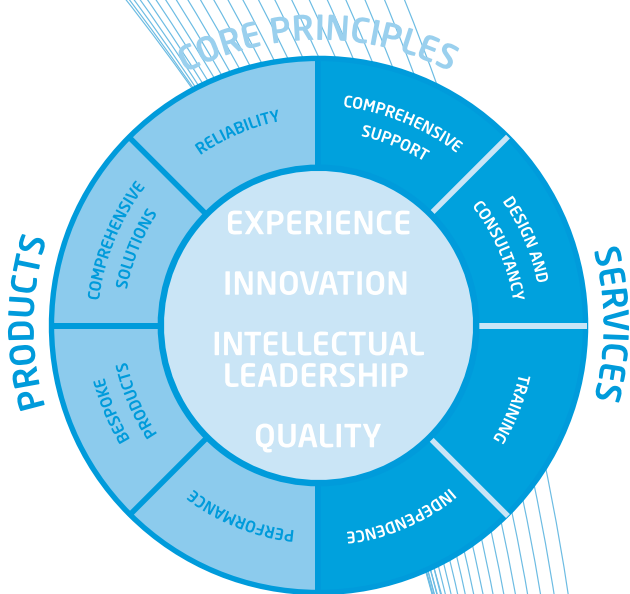
Ampetronic can arrange installation through our extensive global network of independent installation partners. We can give independent advice to end customers, not tied to any one installer or contractor. As our installers are not tied to us, they will use and recommend our equipment because they have faith in our systems and in Ampetronic to support them.



Case Study

The London Underground

The London Underground has taken a positive approach to DDA legislation in the UK for the hearing impaired. Rather than wasting money in merely attaining compliance they are committed to making a difference and improving the life of the hearing impaired traveller and those that interface with them. They will provide assistive listening systems at ticket halls, help points, platforms, walkways and lifts. With safety and reliability of equal importance to performance, Ampetronic's equipment is being installed across the Underground system. Where necessary we have custom designed our equipment suitable for this safety critical environment.



Our Products

Our products are designed and built to achieve unrivalled standards of performance and reliability. Our broad range of equipment will meet your requirement whatever your environment.



Our products can be found all over the world, serving the hearing impaired, whatever they choose to do.

Transport Systems

Airports, stations and transport networks, Elevators, Help points, Car park access points

Vehicles

Taxis and private cars, Minibuses, Coaches and trains

Venues

Theatres, cinemas and concert halls, Stadia and sports venues, Places of Worship, Conference and lecture halls

Point-of-Service

Counters, Intercoms and entry-phones, Drive-throughs, Help points

Work

Meeting rooms, Video conference facilities, Desks and offices

Home

TV rooms, Phones, Individual car systems

Education

Lecture halls, Classrooms

Safety

Public address systems, Voice alarm systems, Help points

Adjacent Rooms

Classrooms, lecture halls, conference facilities, cinemas

Confidential Environments

Courtrooms, Interview rooms

Test and Measurements

Surveying installation sites, Commissioning / monitoring installed systems

Case Study

Americas Cup

The prestigious America's cup takes place every 4 years. The teams know that the difference between winning and losing is a matter of seconds. In their two years of preparation, they constantly push themselves and their equipment. Communication plays a big part in their success. Radio transmitters are banned and shouting commands over the noise of the wind and waves is futile. Ampetronic, sponsors of the GBR Challenge provided an innovative solution. Based on induction loop technology and featuring the ILD122 loop driver, Ampetronic developed a custom belt pack microphone system based on advanced loop technology to allow the skipper and crew to communicate on board the yacht.



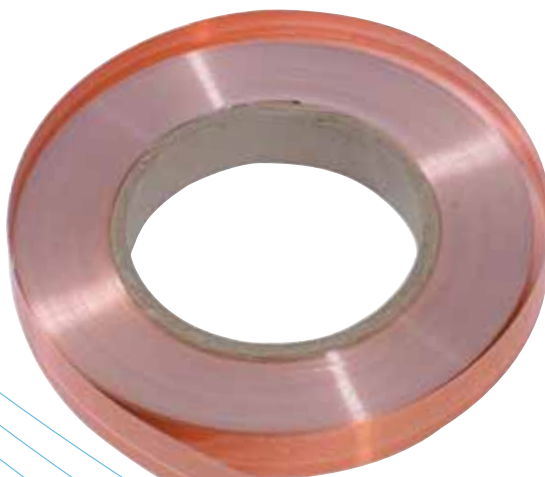
Designing Induction Loop Systems

Assistive listening systems should only be used if they improve the quality of the sound that the hearing aid user experiences. To achieve this, a holistic approach to the design of the system is essential, considering the audio inputs, the loop layout and selection of an appropriate amplifier.

Audio Inputs

The design of the audio inputs is fundamental to the performance of the system.

The input to the system must increase the separation between the background noise and the wanted signal and remove any acoustic distortion such as reverberation caused by room geometry. Ideally, the induction loop system will connect directly to an existing audio system, but even here, care must be taken that any microphones used are correctly positioned and of appropriate design. Omni-directional or boundary microphones will rarely give adequate performance.



Loop Design

The loop layout can be as simple as a basic perimeter loop but it will depend on the environment and what you are trying to achieve. There are four loop configurations only one will be right for any particular application. The configurations are as follows:

- Perimeter loop.
- Array for high metal loss or large area coverage.
- Array for Ultra-Low Spill™.
- Small area loop for local or one to one coverage.

In designing the loop, it is only the vertical component of the magnetic field that is of interest. By considering the following points, it will become apparent as to which configuration is appropriate for the application:

Physical size and shape of the area – the resultant field strength must be uniform. This can not always be achieved using a Perimeter loop.

Overspill – confidential or separate programming in adjacent rooms is only viable with our unique Ultra-low Spill™ technology.

Metal structures – modern buildings often contain metal infrastructure. This will attenuate and distort the magnetic field. Loop design must account for metal effects to work correctly.

Amplifier Selection

Amplifiers can only be selected once the loop layout is completed. To select an amplifier, we consider the following parameters:

Power Requirements - Never select an amplifier based solely on the area of your room.

Applications will have very different power requirements for the same physical areas.

Power is affected by:

The presence of metal structures.

Aspect ratio of the room.

Relative height of the loops.

Type of loop layout (perimeter, low loss, low spill).

Audio Quality - Different applications have different performance requirements.

Transient environments with speech can occasionally accept distortion on the output, while music or mixed programmes will require very high audio quality.

Approvals and Standards - Electronic compatibility, safety and reliability standards can vary dramatically in different applications. Ampetronic have products to match even the toughest of environments.

Metal Loss Correction - In the presence of metal structures, make sure that your amplifier is supplied with metal loss correction. This is a frequency dependent gain control not to be confused with one control.

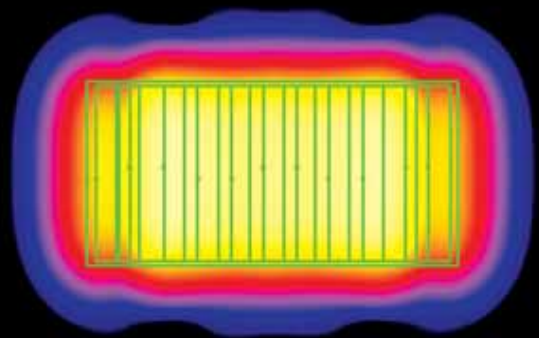
Case Study

Loops™

Loops™, a proprietary induction loop design tool can map the magnetic field in three dimensions for any given and drive conditions.

Using this unique design tool in conjunction with our Ultra-low Spill™ and Metal Loss Compensation technology, our support engineers provide an enviable design service enabling the benefits of superior induction loop technology to be realised in the most demanding environments.

Ampetronic have a range of software tools for customers to facilitate analysis, design and correct specification of loop systems.



Output from Loops™

The Legislative Environment

Legislation and standards encourage the provision of loop systems around the world, a trend that is increasing year on year around the world



Legislation

Many countries now have established equal access legislation that ensures provision of suitable facilities and services for the disabled, including for those with hearing loss. In Europe, directives require each member country to enact their own equal access legislation, including requirement for hearing assistance. In the UK, the Disability Discrimination Act (2004) requires provision of hearing assistance wherever reasonable to do so. In the USA, the Americans with Disabilities Act references induction loop systems for transient environments, and explicitly requires hearing assistance in public venues.

In many countries the requirement for hearing assistance is also contained within building codes, for example in Section M of the Building Regulations in the UK, and in the Building Code of Australia.

Ampetronic plays a leading role in development of legislation around the world. Contact us or your local distributor for more details of legislation in your country, and how it affects provision of loop systems.



Performance Standards

Nearly all countries have adopted the international performance standard for loop systems, IEC 60118-4 (2006). This standard is increasingly called up by legislation, building codes, or by specifications.

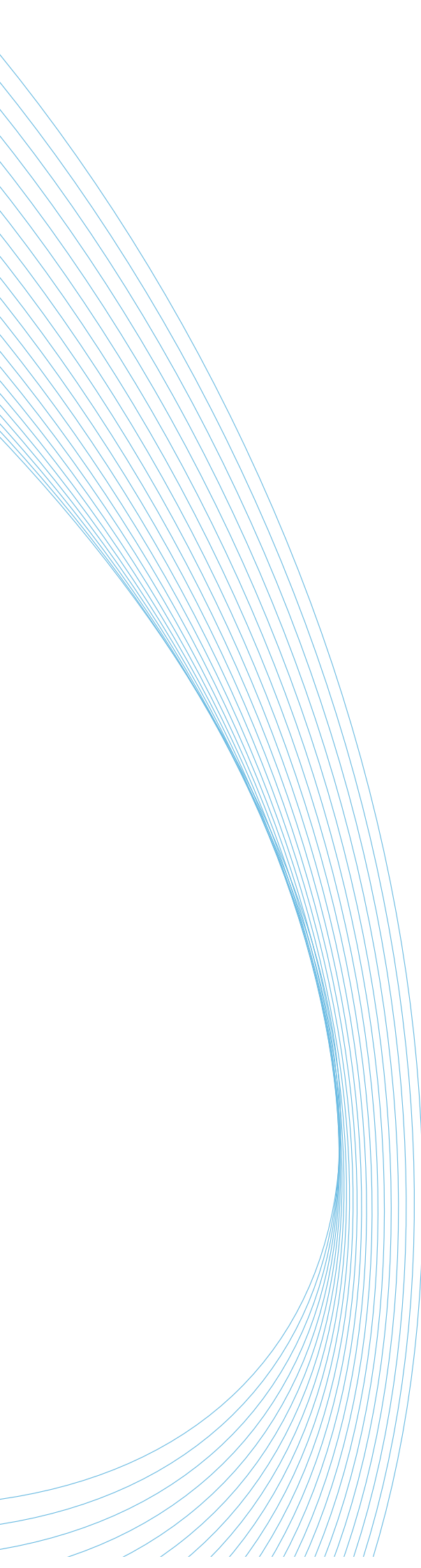
The standard specifies signal levels, frequency response and background noise requirements, and sets a benchmark for a good loop system that will provide a benefit to the hearing aid user. Only an installed system can meet this standard, equipment on its own can not.

Complying with the standard requires loop systems to be designed with knowledge of the building structure and proposed use, and requires testing and documenting results using suitable test equipment such as the Ampetronic Field Strength Meter (FSM).

Deaf Logos

The internationally recognised symbol to show the presence of a loop system is a deaf logo depicting an ear with the letter 'T'.

It is used to publicise that a loop system is available. To take advantage of the clean, clear signal from the induction loop, a user must switch their hearing aid to the 'T' or 'telecoil' setting.



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induction loop systems
bring intelligible sound
back to the lives of
millions of people
throughout the
world whatever
they choose to do.



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