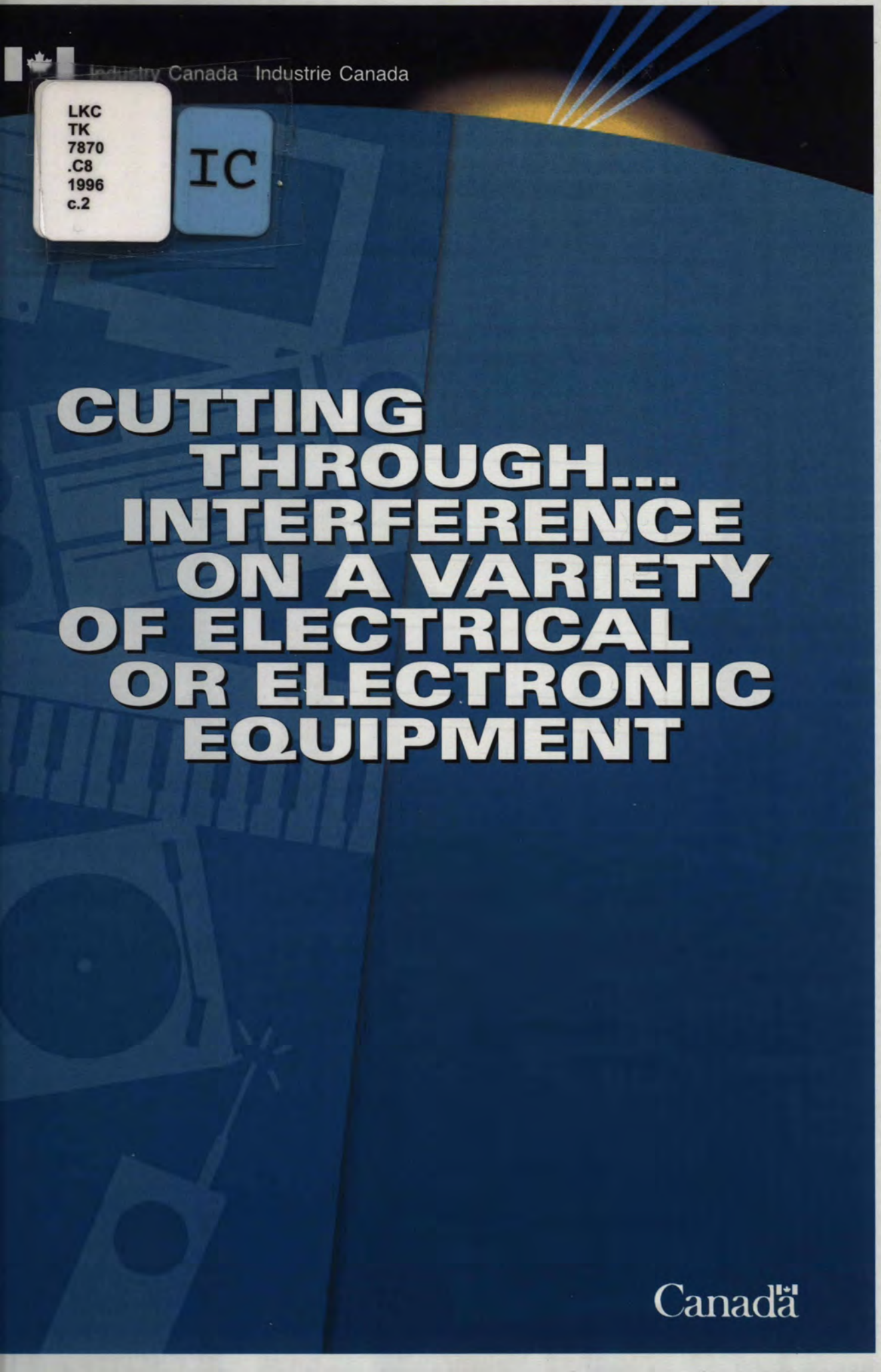
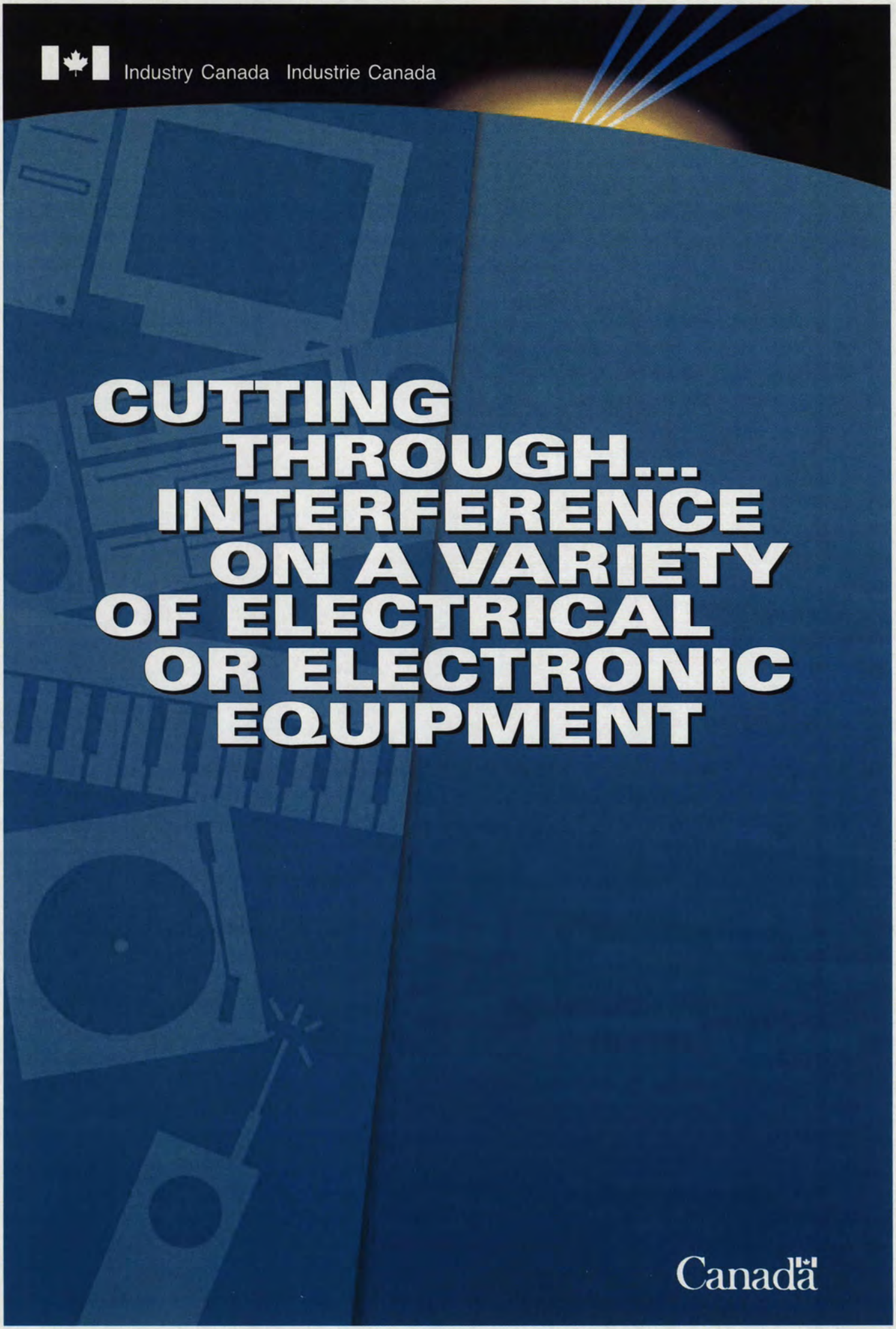



Industry Canada Industrie Canada
CUTTING THROUGH... INTERFERENCE ON A VARIETY OF ELECTRICAL OR ELECTRONIC EQUIPMENT
Canada

This information is available in a series of brochures, a videocassette and a CD-ROM. The Industry Canada Internet site http://strategis.ic.gc.ca, under the heading *Marketplace Services* includes useful information and advice for solving interference problems.

Aussi disponible en français.

32-EN-95539W-01

CUTTING THROUGH... INTERFERENCE ON A VARIETY OF ELECTRICAL OR ELECTRONIC EQUIPMENT

Many commonly used devices are subject, in one way or another, to interference problems. These devices, some of which operate with radio frequencies, can easily pick up unwanted signals. The interference may appear as a variety of sounds – voices, crackling, buzzing, humming and clicking. In some cases, it may affect the operation of certain pieces of equipment.

The effects of interference may be apparent on:

- **stereo systems;**
- **tape decks;**
- **compact disc players;**
- **turntables;**
- **computers;**
- **electronic organs;**
- **wall intercoms;**
- **portable baby monitors;**
- **microphones or cordless microphones;**
- **microwave ovens;**
- **clock radios; and**
- **alarm systems.**

If possible, separate the affected equipment from the potential source of interference. You can also try using the affected equipment outside the home to check that it is not the problem. For some wireless devices, such as an alarm system, ask the manufacturer about the possibility of using another radio frequency.

■ Interference caused by a radio station

If equipment is picking up unwanted signals or sounds, or is experiencing intermittent operating problems, the onset of this problem may coincide with the erection of a radio station antenna in the neighbourhood.

With this phenomenon, an electronic circuit, usually an amplifier, is suddenly affected by strong unwanted outside radio signals. If the equipment is surrounded by an intense electromagnetic field, the circuit wiring or the system components may act as antennas and pick up an unwanted signal. This in not necessarily due to a technical fault in the transmitter. The entry point of the unwanted signal must be located.

Check your neighbourhood for transmitter antennas in order to identify the potential source of the interference, then try to find a solution with the operator of the radio transmitter. Filters, shielding or grounding may be required.

HOW TO LOCATE THE ENTRY POINT OF AN UNWANTED SIGNAL

A. Disconnect all accessories connected to the equipment, such as auxiliary speakers, interconnecting stereo system cables, a tape deck or a compact disc player. Reconnect each cable, one at a time, to identify the accessory that is receiving the interference. Proper grounding and good connections between the accessories and the equipment sometimes eliminate the interference. If necessary, ask a technician to do the installation or modifications.

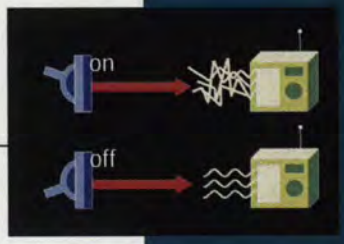
B. In the case of a stereo system, if the interference persists after all accessories have been disconnected, the problem may lie between the volume control circuit and the speakers. If varying the volume control has no effect on the offending radio signal, the entry is likely the speaker wiring. To verify this potential entry point, disconnect the speaker wires from the amplifier and listen for the interference with headphones. If the problem disappears, unshielded speaker wires should be replaced with shielded audio cable.

For more information on shielding, refer to the brochure:

CUTTING THROUGH...VARIOUS SOLUTIONS TO INTERFERENCE.

■ Interference from electrical devices

In extreme cases, the interference may also be caused by electrical devices. Many electrical devices, such as thermostats on many types of heating equipment, dimmer switches, as well as fluorescent and neon lights and electric heating pads and blankets, can cause interference. Electric motors, tools and electrical appliances also belong in this category. The type of interference differs greatly from one electrical device to the next. Repairing or replacing the equipment that is causing the interference may solve the problem.



How to find the source of the interference

The breaker test makes it fairly easy to locate the source of interference inside the home. This test is explained in Cutting Through...Radio Interference.

IF THE PROBLEM PERSISTS...

It probably means that the source of the interference is outside the home.

Check with your immediate neighbours. If one of your neighbours is also experiencing a similar problem, ask the neighbour to conduct the breaker test in his/her home to try to locate the faulty equipment. An electrical appliance or device rarely causes interference that extends beyond a few houses.

IF THE PROBLEM PERSISTS...

The interference may be coming from electrical power lines. The power grid that supplies your neighbourhood may prove to be the source of the interference. Contact your electrical utility to resolve the problem.

NOTES

Canada