

Spectrum Management

Radiocommunication Information Circular

Electromagnetic Immunity (Radio Sensitive Equipment)

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Comments and suggestions may be directed to the following address:

Industry Canada
Radiocommunications and
Broadcasting Regulatory Branch
300 Slater Street
Ottawa, Ontario
K1A 0C8

Attention: DOSP

Purpose

This Radiocommunication Information Circular explains, in general terms, the responsibilities of Industry Canada, the consumer, the manufacturer and the radio licensee, with respect to resolving electromagnetic immunity problems. It also provides service information on specific companies for consumers experiencing difficulties.

Background

During the last few years there has been immense growth in the number and variety of consumer electronic products. This is largely a result of the increasing use of microcircuits (chips) in control devices for more and more consumer electric appliances and electronic home entertainment equipment.

Combined with the proliferation of radio transmitters (CB, cellular and cordless telephones, wireless security systems, garage door openers, etc.) the number of cases where radio transmitters affect electronically controlled consumer products (telephones, phonographs and compact disk players, amplifiers, televisions and radio receivers, etc.) have increased.

When consumer electronic products malfunction in the presence of radio (electromagnetic) signals, the problem is often assumed to be entirely the fault of the radio transmitting source. In fact, it is often found that the consumer product lacks the circuitry required to ensure that it will operate properly in the presence of radio signals, or it may be defective in some way that will make it susceptible to interference from radio signals. An electronic product that is affected by radio signals is described as being "radio sensitive".

Radio transmitters are required to meet government standards that ensure that they perform their intended function without causing interference. There are few potential defects in a radio transmitter that would cause problems for consumer equipment. Most transmitter defects affect only commercial radio receivers or television receivers using indoor antennas.

The number of transmitters and consumer devices will increase. As radio transmitters are already effectively controlled by government standards, the emphasis in future will be on ensuring that consumer electronic equipment is designed and manufactured to standards that will ensure satisfactory functioning in the presence of radio signals of normal field strength.

In the meantime, problems will occur and will have to be resolved on a case-by-case basis. In many instances, the problem can be overcome only by repairing defective consumer equipment or by installing additional components in equipment not originally designed to operate in the presence of radio signals.

What Is Being Done Now

Industry Canada has published an Electromagnetic Compatibility Advisory Bulletin (*EMCAB-1*) that indicates the levels of radio signals normally encountered in today's radio environment. Intended to define the radio environment for manufacturers of consumer electronic products, *EMCAB-1* emphasizes the importance of designing products to achieve electromagnetic immunity.

In cooperation with the Canadian Standards Association (CSA), the Department is developing a voluntary standard that sets acceptable immunity levels. Also, Canada is participating in the International Special Committee for Radio Interference (CISPIR), which is responsible for the development of immunity standards for radio receivers and electronic equipment such as video recorders and audio amplifiers.

Voluntary standards, however, may not be sufficient. Therefore, the *Radiocommunication Act* provides for the possibility of enforcing standards by regulation.

Who Does What?

To be effective, voluntary standards require the cooperation of both the manufacturer and the consumer when dealing with electromagnetic immunity problems.

Industry Canada

Industry Canada provides technical information and advice to consumers who have electronic equipment that is affected by radio signals.

The Owner of a Radio Transmitter

Users and licensees of radio station transmitters should be aware that even when they comply fully with the *Radiocommunication Act*, the *General Radio Regulations* and the licensing conditions, they should take all practical steps to minimize potential interference problems.

The Manufacturer/Importer/Dealer

Manufacturers take a great interest in the field performance of their products and customer satisfaction.

When notified of a problem with their product, most manufacturers, importers or dealers will repair, replace or modify the equipment, or refund the purchase price.

The Service Department

When service personnel are called in, they may recognize that there is an immunity problem, but not know how to correct it.

Service personnel should have a basic understanding of the principles of electromagnetic immunity and the techniques for applying external or internal interference-suppression devices.

The Consumer

The consumer should be aware that electronic equipment can malfunction because of the presence of strong radio signals. When problems occur, they should report them to the customer service department of the equipment dealer, importer or manufacturer.

Who Do You Call?

The following list summarizes the service policies of major manufacturers and distributors of home entertainment equipment as of the date of publication of this circular.

COMPANY	ADDRESS	CONTACT	1. REPAIR 2. REPLACE 3. REFUND			COMMENTS
			1	2	3	
Toshiba of Canada Ltd.	191 McNabb St. Markham, Ont. L3R 8H2 Phone: (905) 470-5400 Fax: (905) 470-5431	Service Department	X	X		No service charge for equipment under warranty
	3870 Jacombs Rd. Richmond, B.C. V6V 1Y6 Phone: (604) 270-8481 Fax: (604) 270-2007	Service Department	X	X		No service charge for equipment under warranty
	1643 North Service Road Dorval, Quebec H9P 1J1 Phone: (514) 332-6860 1-800-361-3332 Fax: (514) 685-4705	Service Department	X	X		No service charge for equipment under warranty

COMPANY	ADDRESS	CONTACT	1. REPAIR 2 REPLACE 3. REFUND			COMMENTS
			1	2	3	
Matsushita	Vancouver FSC 13131 Bathgate Place Richmond, B.C. V6V 1Z3 (604) 278-4211	Steve Juneson Manager	X	X		
	Calgary FSC 6835-8th St. N.E. Calgary, Alberta T2E 7H7 (403) 295-3955	Tim Hudson Manager Parts & Service	X	X		
	Winnipeg FSC 1555 Dublin Ave. Unit 4 Winnipeg, Man. R3E 3M8 (204) 783-7419	Allen Fehr Manager Parts & Service	X	X		
	Toronto FSC 5770 Ambler Dr. Mississauga, Ont. L4W 2T3 (905) 624-8447	Tony Eustis Manager Service	X	X		
	Dartmouth FSC 250 Brownlow Ave. Unit 6 Dartmouth, N.S. B3B 1W9 (902) 468-1047	William Yorston Manager Service	X	X		
	Montreal FSC 3075 Louis-A. Amos St. Lachine, Quebec H8T 1C4 (514) 633-8684	Daniel Laforte A/Manager Parts & Service	X	X		

To have your company service policy included in this publication, please contact Industry Canada at the address shown on page 5.

Additional Information

If you need more information about interference or immunity problems, contact the nearest district office of Industry Canada. Telephone numbers are listed in the blue pages of the local telephone directory.

The Department's publication *Addresses and Telephone Numbers of Regional and District Offices* (RIC-66) may be obtained by calling (613) 990-4761 or writing to:

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