RIO PMP300

User's Guide

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	INTRODUCTION

INTRODUCTION

Welcome to the world of Rio! The Rio PMP300 plays your favorite audio soundtracks formatted with the popular MP3 standard. This chapter introduces you to the MP3 audio technology, and provides a general overview on how to use Rio.

- WHAT IS MP3?
- ♦ THE RIO PMP300 PLAYER
- How To Use Rio
- MP3 INTERNET SITES

WHAT IS MP3?

MP3 stands for MPEG 1 layer 3. It is an efficient way to store high-quality music or other audio content on your computer. MP3 files can be 1/4 to 1/20 the size of a commercial CD audio file—yet retain a high sound quality. MP3 files usually have the extension .mp3, and can be downloaded from the Internet, or can be legally made for personal use from your favorite CDs that you purchased.



Warning!—It is illegal to encode MP3 files for trade or sale unless you have the expressed and explicit permission of the copyright holder(s).

THE RIO PMP300 PLAYER

The Rio PMP300 player stores your favorite MP3 files in its flash memory so that they can be played anywhere you want to go. Rio's solid-state design makes it impervious to the skipping and jitter experienced with portable CD players. Rio is lightweight, and about the size of a pager. It is perfect for activities like jogging or walking, hiking–just about any activity you like to do.

HOW DOES RIO WORK?

The Rio PMP300 player is easy to use. It takes only three steps to start playing your favorite music titles using Rio:

- 1. Obtain legal MP3 files from many MP3 Internet sites, or create them from CD disks you purchased using the MusicMatch JukeBox software provided on the installation CD.
- 2. Use the Rio Manger to download your MP3 files into Rio's flash memory.
- 3. Put your headphones on and press the **Play** button on the Rio PMP300 player to listen to great digital sound!

The following chapters go into greater detail on how to work with Rio. Soon you can start taking your favorite personal, and legally-obtained MP3 files anywhere you go.

MP3 INTERNET SITES

You can obtain legal MP3 files and the latest information on MP3 technology from a growing number of Internet sites. Some sites you might want to explore:

- ♦ www.mp3.com
- www.mpeg.org
- www.goodnoise.com
- www.musicmatch.com
- ♦ www.mp3bench.com
- www.nordicdms.com
- www.diamondmm.com

MP3 files are also available on the MP3 sampler and the installation CD.

Installing Rio

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This chapter provides an overview of the Rio components and instructions on the Rio hardware and software installation.

- ♦ GENERAL SYSTEM REQUIREMENTS
- ♦ RIO KIT OVERVIEW
- ♦ RIO HARDWARE INSTALLATION
- ♦ RIO SOFTWARE INSTALLATION

General System Requirements

The following system is recommended:

- Pentium 90MHz or faster
- ♦ Windows 98/95
- 20 MB free hard disk space
- 1 available parallel port
- CD-ROM drive (some drives may not accept encoding of MP3 files, see www.mp3.com for more information)
- 1 installed sound card

You may have acceptable performance with older or slower systems. Be aware that certain operations, like creating MP3 files, may take several minutes or longer.

RIO KIT OVERVIEW

Take a moment to examine the components provided with your Rio PMP300 kit in the following photo:



Rio is designed to connect easily to your PC for downloading MP3 files. Before you can enjoy high-quality audio with your Rio Player, you must first connect the parallel port adapter (see following section) and install the Rio software (see Chapter 2). Chapter 3 instructs you on how to download MP3 files into Rio's flash memory using the Rio Manager.

RIO HARDWARE INSTALLATION

Rio takes advantage of the parallel port on your computer for MP3 data transfer. To set up Rio for MP3 file transfers, you need

to attach the parallel port adapter to the parallel port. Leave the adapter permanently connected to your PC–a pass-through connector allows a printer, or other device, to remain coupled to your computer.

- 1. With your computer turned off, remove the printer cable or other device from your parallel port.
- Take the parallel port adapter (item D from the table on page 4) and attach it to your parallel port. (see figure below)

Note—The parallel port adapter includes a pass-through connector to allow shared operation of both Rio and your printer (or other device). Reattach the printer or other device cable to the parallel port using the pass-through connector.



Printer/device passthrough connector

Figure - Rio parallel port adapter

When you want to load files into Rio, simply attach one end of the 15-pin data transfer cable (item C, page 4) to the Rio PMP300 player, and the other end to the parallel port adapter. You then run the **Rio Manager**. See Chapter 3 for information on using the Rio software and hardware to download MP3 files.

RIO SOFTWARE INSTALLATION

Installing the Rio software is a quick and simple procedure. To install the Rio PMP300 software:

1. Turn on your computer. After it has booted, insert the Rio Installation CD disk. The Rio installation program should automatically launch if your computer is set to "auto-play" the CD-ROM drive. After you see the Welcome screen, click Next. If the installation program does not start automatically, then from My Computer, double-click the letter of your CD-ROM drive (usually labeled D), then double-click Setup.exe.

- 2. You are requested to select a destination directory. We recommend you use the default directory paths. Click Next.
- 3. In the **Select Components** screen, click the check boxes to install the software you want. We recommend you install all pre-checked options. Click Next. The **Ready to Install** screen appears.
- 4. Click Next to proceed with the installation.
- 5. Click Finish when the Install Complete screen appears.

After the Rio software has been installed, the MusicMatch Jukebox installation program should automatically begin—if you selected MusicMatch in the installation options in step 3 above. Follow the on-screen directions to complete the MusicMatch installation.

You are now ready to enjoy the wonderful world of Rio!

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Using the Rio Player

The Rio PMP300 player uses both software and hardware together to bring portability to your favorite MP3 music titles. To use the Rio player, you must first have MP3 files to play.

This chapter describes how to create MP3 files, and load them into the Rio PMP300.

- CONNECTING RIO TO YOUR PC
- Using the RioPMP300 Player
- MAKING MP3 FILES

CONNECTING RIO TO YOUR PC

Before you can load legal MP3 files into the Rio PMP300 player, you must connect Rio to your PC through the parallel port adapter you installed in the previous chapter. The following sections describe how to connect Rio to your PC so you can load your personal-use MP3 files.

Before Using Rio...

Before you can use the Rio player, you must first insert a 1.5v AA battery (provided with your Rio kit).

1. Hold the Rio PMP300 player carefully in your hand, and use your thumb to slide open the battery compartment lid.



- 2. Insert the 1.5v AA battery into the battery compartment.
- 3. Close the battery compartment lid.

Attach Data Transfer Cable

- 1. Align one end of the 15pin data transfer cable (item C, page 4) with its connector slot on the parallel port adapter .
- Insert the data transfer cable into the connector on the parallel port adapter until it locks into place as shown.

Note-DO NOT FORCE the

data transfer cable into the parallel port adapter or the Rio player. It is a one-way fit only. Flip the connector and reinsert if it does not fit easily.

3. Connect the opposite end of the data transfer cable to the data cable connector slot located on the side of the Rio Player.

You are now ready to use the Rio player.











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USING THE RIOPMP300 PLAYER

The following sections describe the Rio player control buttons, and how to download MP3 files into the Rio flash memory.

Rio Control Buttons

Your Rio player has buttons that control playback modes, and an LED display to indicate the current mode and status.

Before downloading your first MP3 files into Rio, familiarize yourself with how the various Rio control buttons are organized, and what functions these buttons control.

The Rio MP3 playback control buttons are located on the front face and top of the Rio player (see Figures A and B). The playback buttons are arranged in a circular dial, and are familiar to cassette or VCR controls.

There is no On-Off switch. Rio is turned on by pressing the Play button once. Total memory, in Megabytes (MB) is always displayed when Rio is turned on. If there are any MP3 files loaded, PRODUCT DIGITAL





Figure B - Top end view MENU-EQ-INTRO buttons plus headphone jack

the first track begins to play automatically.

Rio Playback Dial Control Buttons

Basic playback functions are controlled using the playback dial buttons. The playback dial is the nerve center of the Rio player: you control On-Off in addition to basic Play/Pause/Stop—and other functions. Refer to the following figure.



Reference	Command	Function	
1	Volume	Press + or - to increase/decrease volume.	
2	Rewind	Rewind . Press and hold to move backward within the current track; press and release to skip to the start of the previous track.	
3	Random	Begin Random Play mode. Press again to cancel.	
4	Repeat	Begin Repeat Play mode. Press once to repeat current track; press again to repeat all tracks in memory; press again to cancel.	
5	Play/Pause	Play/Pause/ Power On. Press once to turn on Rio and begin Play; press again to pause current track.	
6	Fast Fwd.	Fast Forward. Press and hold to move forward within the current track; press and release to skip to next track.	
7	Stop	Stop playback/Power Off. Press once to stop playback; press again to turn Rio off.	
8	А-В	Select Excerpt. Marks selection for repeated playback. Press once to start (letter A appears); press again to complete selection (letter B appears); press again to cancel.	

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Note—To preserve battery power, Rio will automatically shut itself off after 15-20 seconds of no activity.

MENU-EQ-INTRO Buttons

The top of the Rio player contains three additional buttons: Menu, EQ, and INTRO (see Figure B, page 9). These buttons provide additional features to view the Rio player status, change the audio levels (EQ), and preview your tracks. Following is a quick description of the buttons and their functions:

Button Name	Function
Menu	 Monitor internal/external flash memory. Click the Forward button on the Rio playback dial to scroll and check the following: total internal memory (Ti) total external memory (Te) remaining internal memory (Ri) remaining external memory (Re) firmware version number Rio must be in Stop mode to view this information.
EQ	 Change equalization (EQ) settings. There are four available EQ settings: Normal-no EQ applied Classic (displayed as "Clasic") Jazz Rock
INTRO	Plays first 5-10 seconds of each track; moves on to next track immediately, if any.

External Memory Card Eject

If you have an external flash memory card inserted into the Rio

player, eject it by first releasing the lock and then pushing the eject slide with your thumb.



Rio LED Display

Rio's LED display indicates its current mode–Play, Pause, Stop– and status. Rio also displays additional information, such as on volume level, track number, and battery charge status.

Following is a description of the LED display functions.

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Note—The modes shown in the following illustration are not always visible. The information shown by the LED depends upon the current mode, or command you execute.



- Play/Pause: Play arrow or vertical Pause displays depending on mode
- Track number/time counter: displays track number and time count of current track
- **Repeat 1/All:** repeats either current or loops through all tracks
- A−B select excerpt: indicates select excerpt is On (see Figure C on page 10 and accompanying table for details on how to use this function)
- INTRO: when displayed, a preview of the first 10 seconds of each track are played. See MENU—EQ—INTRO, page 11.
- ♦ Battery charge: indicates current battery status. Illustration shows ½ battery life remaining. All black indicates fully-charged battery. Always visible.

- Mp3 encoding rate: indicates at which rate the MP3 file was encoded. Higher number equals higher quality audio output (measured in kilobits per second (Kbps).
- HOLD: indicates that the Hold switch has been turned on. Prevents all buttons from operating from accidental or unintended contact.



• VOL: indicates volume level.

Note—The LED will display Play, Pause, Stop, and so forth, for several seconds after you press a playback control button.

Downloading Files Into Rio

Your Rio PMP300 player comes with 32 megabytes (MB) of internal flash memory to store your audio tracks—about 60 minutes of playing time at an MP3 bitrate of 64Kbps.

For an additional cost, you can purchase external flash memory cards that can increase your total playing time. Contact Diamond Customer Service to purchase external flash memory upgrades. (see page 19)

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Note—Actual playback time may vary according to the amount of flash memory and the quality level used to create the MP3 files. Quality level is controlled by the software used to make MP3 files. See Making MP3 Files, page 16.

To download legal MP3 music files into Rio:

 Start the Rio software by clicking Start > Programs > RioPMP300 > Rio Manager. The Rio PMP manager appears:



Figure - Rio PMP Manager player window.

2. Click Memory (Mem). The Memory screen appears:



Figure - Rio PMP Internal/External Memory window.

If there is any music already loaded into Rio, it will be displayed in the Memory window play list. Click External to view contents of the external flash memory card—if one is installed. See the online Help for more information on flash memory management.

- 3. Click Open.
- 4. Browse your system for the location of your MP3 files. Select the files you want to load and click **Open**. The Rio software starts downloading the selected file(s) into the Rio PMP300 player.

The Rio LED indicates that a file download is in process:



5. When the file download is complete, the LED display returns to either Off or Stop mode. You can disconnect the data transfer cable at this time, and take Rio with you.

Downloading Files Using Drag-n-Drop

You can also use Rio's Drag-n-Drop feature to load files from your desktop to the Rio memory window.

To use the Drag-n-Drop feature:

- 1. Follow steps 1-2 in the previous section.
- 2. Open a folder on your computer that contains MP3 files.
- 3. Select the files you want using your mouse, and drag the files over to the Rio memory window. The MP3 files are now loaded into the Rio memory.
- 4. When the file download is complete, the LED display returns to either **Off** or **Stop** mode. You can disconnect the data transfer cable at this time, and take Rio with you.

Notes-(1) Files will not load into Rio if you exceed the available memory (see Chapter 4, **Troubleshooting**). (2) Files always load into the currently displayed (Internal or External) Memory window only. (3) Drag-n-Drop functions will not work with the MusicMatch software.

If you need additional help using the Rio PMP Manager, click ? located in the upper-right side of the Rio Manager. You can also access general online Help for Rio. Click Start > Programs > Rio PMP300 > Online Help.

Playing MP3 Files with Rio

To begin music playback, insert headphones (see Figure B, page 9) into the headphone jack and turn Rio on by pressing the Play button. The first track begins to play. Use the playback buttons to move to other tracks, or perform other commands. Refer to the table on page 10 for a quick reference of the playback commands.

After Rio plays the last track, it shuts off automatically–unless you pressed the **Repeat** button.

Playing MP3 Files Using the Rio Manager

You can also drag MP3 files into, and play them directly from the Rio Manager using your PC sound system. After you open the Rio

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Manager, drag an MP3 file into the player window. (see figure of the Rio Manager player window on page 13)

MAKING MP3 FILES



Warning!—It is illegal to encode MP3 files for trade or sale unless you have the expressed and explicit permission of the copyright holder(s).

Not only can you download legal MP3 files from the Internet for personal use, you can also make MP3 files from CD recordings you have already purchased. The following section gives an overview of MusicMatch—the software used to make MP3 files.

MusicMatch JukeBox Software

Brava Software, Inc., in partnership with Diamond Multimedia Systems, Inc., provides the easy-to-use software to make and play MP3 files on your PC.

MusicMatch is an optional component of the Rio installation program. If you need to install—or reinstall—the MusicMatch software, follow the software installation procedures on page 5. Make sure you select the **MusicMatch Jukebox** component in the **Select Components** dialog of the Rio installation program.

With the MusicMatch software, you can convert your favorite CD music tracks to **.mp3** files for personal use. Brava Software provides detailed online Help to aid you in using and configuring the software.

To learn more about using the MusicMatch JukeBox software, go to Start > Programs > MusicMatch > MusicMatch JukeBox. Once you have started the program, click Help for assistance.

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Note—The time to make—and quality of—an MP3 from a CD will vary depending upon your system speed, CD-ROM capabilities, general system resources.

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TROUBLESHOOTING

This section provides some useful information regarding setup and operation of your Rio PMP300.

The computer displays a message that "no communications port" was found, or that it "cannot find the Rio player.". First, check the following:

- make sure the parallel port adapter and cables are properly connected
- check the battery charge using the charge indicator on the Rio LED
- verify that the parallel port is enabled and working using the Windows 98/95 Device Manager
- try removing other parallel port devices
- check and see if the parallel port is enabled in your system BIOS

Important-Before making any changes to your system BIOS, consult your motherboard manufacturer's user guide.

The AA battery inside Rio drains even if I haven't used the Rio player some time. What causes this?

The Rio player always uses some battery power. When Rio is turned "off," it actually is in a low-power mode. If you know you will not use Rio for a while, remove the AA battery to preserve its charge.

Can I use any flash memory card to increase my Rio player's memory? No. The Rio PMP300 uses a 3.3 volt (v) flash ROM memory card only. **Do not use 5v cards**. You can purchase the correct memory upgrade for your Rio PMP300 player from Diamond Customer Service (1-800-4-MULTIMEDIA), or the Diamond Online Store at www.diamomdmm.com/rio for convenient online shopping. Flash memory cards may also be purchased from retail electronic stores.

Why can't I play the tracks I have loaded on an external flash memory card before tracks already loaded on Rio's internal memory?

Rio always plays tracks that are loaded into its internal memory first; then it plays any tracks loaded on an external flash memory card.

Why don't the buttons on Rio respond when pressed? Check the Hold switch (see description, page 13). Check battery charge.

When downloading an MP3 file to Rio, I get a message that says I cannot download a first generation, copyrighted file. Why do I receive this message? The file you attempted to download is a duplication of a copyrighted file. Copyright laws prohibit serial copying of such files. Rio will not allow you to download files that have been duplicated in this manner. Obtain a legal copy of the MP3 file you want to load into Rio to avoid this message in the future.

General Troubleshooting Tips

- Make sure your battery has adequate charge
- If you try to load more than 32MB of songs into the Rio memory, it will automatically drop the entire last song. For example, if you attempt to load a 34MB song into Rio's internal memory, it will not load; if you load 4 10MB (40MB total) songs only the first 3 will load.
- There is no way to change the song play order from the Rio player itself; but you can set to **Random** play—this mode will play until you shut Rio off. To change the play order, use the Rio Manager software to place tracks in the order you want.
- You cannot download first generation, copyrighted files.

Note—Troubleshooting information on the Rio software is found inside the online Help, Troubleshooting section. To get help on the Rio software, click **Start > Programs > Rio PMP300 > Online Help.**

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Contacting Diamond

USA CUSTOMER SERVICE

For updates and news on Diamond Multimedia products, please fill out the product registration card and mail it in. For questions or information in the United States regarding Diamond Multimedia Systems products, please use any of the following:

U.S. mail:	Diamond Multimedia Systems, Inc. 7101 Supra Drive SW Albany OR 97321
Sales Info:	1-800-4-MULTIMEDIA sales4u@diamondmm.com
Customer Service Phone:	800-468-5846
Customer Service FAX:	408-325-7408
Web Site:	www.diamondmm.com

TECHNICAL SUPPORT

If you need assistance, contact us by phone at 541-967-2450. You can also FAX, e-mail or use the following information below for additional information.

FTP Site:	ftp.diamondmm.com
FAX on-demand:	800-380-0030
World Wide Web:	www.diamondmm.com
Product Support Email:	techsupt@diamondmm.com
Developer Relations:	developer@diamondmm.com

Visit the Diamond Multimedia web site for the latest software updates and technical information.

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Technical Support	UK	+44-1189-4444-44
	Germany	+49-8151-266-330
	France	+33-1-55 38 16 16
	Japan	+81-(0)3-5695-8405
Email support	UK, Ger., France	techsupt.euro@diamondmm.com
RMA	All	+44-1189-4444-30
Electronic Bulletin	UK	+44-1189-4444-15 (to 33.6 Kbps)
Board Service (BBS)		+44-1189-4413-12 (K56flex/V.90)
	Germany	+49-8151-266-333 (to 28.8 Kbps)
		+49-8151-266-356 (K56flex/V.90)
		+49-8151-266-334 (ISDN)
World Wide Web	UK	www.diamondmm.co.uk
	Germany	www.diamondmm.de
	Japan	www.diamondmm.co.jp
Fax on Demand	UK	+44-1189-4444-60
	Germany	+49-8151-266-332

Diamond Worldwide Support and Information Services

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Technical Specifications

Rio Specifications

Weight: 70grams (2.4 ounces)
Battery: single 1.5V AA (alkaline type recommended)
Parallel port Transfer rate: 100Kbps (about 6 MB/minute)
Signal-to-noise ratio: >90dB
Accessories: Headphones; 15- pin data transfer cable; parallel port adapter

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TRADEMARK, WARRANTY AND CERTIFICATION INFORMATION

Trademarks

XingMP3 is a trademark of Xing Technology. RealAudio is a trademark of RealNetworks

All other trade names referenced in this manual are the service mark, trademark, or registered trademarks of their respective manufacturers. Diamond reserves the right to change specifications without notice. Copyright © 1998 Diamond Multimedia Systems, Inc. Printed in USA.

Diamond Rio PMP300 Warranty

Your Rio PMP300 kit comes with a one-year hardware warranty. Diamond Multimedia Systems, Inc., (Diamond) warrants Rio PMP300 against defects in material and workmanship for a period of one year from the date of purchase from Diamond or an authorized Diamond agent. This warranty applies only to the original purchaser of the Rio PMP300 kit and is not transferable. This warranty does not cover any incompatibilities due to the user's computer, hardware, software or any other related system configuration in which Rio PMP300 interfaces. Proof of purchase will be required before any warranty consideration by Diamond occurs.

This warranty does not cover any damage caused by negligence, non-authorized modifications, or parts installed without prior written permission from Diamond.

This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication, nor as a result of service to the product by anyone other than by Diamond.

DIAMOND IS NOT RESPONSIBLE FOR ANY LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF, OR INABILITY TO USE, THIS PRODUCT. THIS INCLUDES DAMAGE TO PROPERTY AND, TO THE EXTENT PERMITTED BY LAW, DAMAGES FOR PERSONAL INJURY. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Some states do not allow limitation of implied warranties, or exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights. You may have other rights which may vary from state to state.

This warranty applies only to this product, and is governed by the laws of the State of California.

Certification Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide

reasonable protection against harmful interference in a residential installation. This equipment generates, uses and radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1. Reorient or relocate the receiving antenna (television, radio, etc.).
- 2. Increase the separation between the equipment and receiver.
- 3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- 4. Consult the dealer or an experienced radio/TV technician for additional help.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Contact Diamond Multimedia Systems, Inc., 7101 Supra Drive SW, Albany OR 97321. Technical Support tel: 541-967-2450. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Warning: Using this product in any way other than as described in this manual or altering the antenna in any way way violate FCC rules. FCC ID JJ4-GP9450-H (Handset)FCC ID JJ4-GP9450-R (Receiver)

Canadian Radio Interference Regulations

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Cet appareil numérique de la classe B respecte toutes les exigences du Règelement sur le matériel brouilleur du Canada.