

# External Radio Modules for SRH

**ERM-2400 / ERM-900** SUP2.5

## USER MANUAL

Date 01.05.2021



## Imprint

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Original version.

For further assistance:

Arnold & Richter Cine Technik GmbH & Co. Betriebs KG

Herbert-Bayer-Str. 10

80807 München

Germany

[www.arri.com](http://www.arri.com)

### Document revision history

Version	Release	SUP	Date
1.0	F07150	2.2	19.08.2019
1.1	F07150	2.3	25.03.2020
1.2	F07150	2.5	01.05.2021

### Scope

This document describes the components and respective the setups of the

ERM-2400 Ext. Radio Module 2.4 GHz RXD-TXD, SRH Basic Set

**K2.0033757**

ERM-900 Ext. Radio Module 900 MHz RXD-TXD, SRH Basic Set

**K2.0033758**

by FoMa Systems.

## Disclaimer

Before using the products described in this manual, be sure to read and understand all the respective instructions.

Otherwise the customer must contact ARRI before using the product.

While ARRI endeavours to enhance the quality, reliability and safety of their products, customers agree and acknowledge that the possibility of defects thereof cannot be eliminated entirely.

To minimize the risk of damage to property or injury (including death) to persons arising from defects in the products, customers must incorporate sufficient safety measures in their work with the system and heed the stated conditions of use.

ARRI or its subsidiaries do not assume any responsibility for losses incurred due to improper handling or configuration of the product or other system components.

ARRI assumes no responsibility for any errors that may appear in this document.

**The information is subject to change without NOTICE.**

For product specification changes after this manual was published, refer to the latest published ARRI data sheets or release notes, etc., for the most up-to-date specifications.

Not all products and/or types are available in every country. Please check with an ARRI sales representative for availability and additional information.

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In no event shall ARRI or its subsidiaries be liable for or have a remedy for recovery of any special, direct, indirect, incidental, or consequential damages, including, but not limited to lost profits, lost savings, lost revenues or economic loss of any kind or for any claim by a third party, downtime, good-will, damage to or replacement of equipment or property, any cost or recovery of any material or goods associated with the assembly or use of our products, or any other damages or injury of the persons and so on or under any other legal theory. In the event that one or all of the foregoing clauses are not allowed by applicable law, the fullest extent permissible clauses by applicable law are validated.

**Table of contents**

<b>1</b>	<b>For your safety.....</b>	<b>4</b>
<b>2</b>	<b>Functions .....</b>	<b>5</b>
<b>3</b>	<b>Introduction .....</b>	<b>6</b>
<b>3.1</b>	<b>How It Works .....</b>	<b>6</b>
<b>4</b>	<b>Powering the remote control panel (RCP) .....</b>	<b>6</b>
<b>5</b>	<b>Connecting the ERM .....</b>	<b>6</b>
<b>5.1</b>	<b>Connecting the ERM to the remote control panel (RCP) .....</b>	<b>6</b>
<b>5.2</b>	<b>Connecting the ERM to the remote head .....</b>	<b>7</b>
<b>6</b>	<b>Positioning the ERMs .....</b>	<b>7</b>
<b>7</b>	<b>Pairing the ERMs .....</b>	<b>8</b>
<b>8</b>	<b>Appendix .....</b>	<b>9</b>

# 1 For your safety

## Warning

The ERM and SRH system and products should only be used by experienced and trained operators.  
This product is **NOT** intended for inexperienced users and should not be used without reading the manual or additional training.  
ARRI recommends that all users read the manual in its entirety prior to use.

### 1.1

#### How to use this manual

All directions are given from a camera operator's point of view. For example, camera-right side refers to the right side of the camera when standing behind the camera and operating it in a normal fashion.

## NOTICE

The product is solely and exclusively available for commercial customers and shall be used by skilled personnel only.  
Every user should be trained according to ARRI guidelines. Use the product only for the purpose described in this document. Always follow the valid instructions and system requirements for all equipment involved.

### 1.2

#### Strengthen your knowledge and get trained

The ARRI Academy courses provide unrivaled insights into the full possibilities of working with ARRI camera systems, camera stabilizer systems, lenses, lights and accessories.  
To learn more, please visit <http://arri.com/academy>.

### 1.1

#### Risk Levels and Alert Symbols

Safety warnings, safety alert symbols, and signal words in these instructions indicate different risk levels:

## DANGER

*DANGER* indicates an imminent hazardous situation which, if not avoided, **will result in** death or serious injury.

## Warning

*WARNING* indicates a potentially hazardous situation which, if not avoided, **may result in** death or serious injury.

## CAUTION

*CAUTION* indicates a potentially hazardous situation which, if not avoided, **may result in** minor or moderate injury.

## NOTICE

*NOTE* explains practices not related to physical injury. No safety alert symbol appears with this signal word.

## NOTE

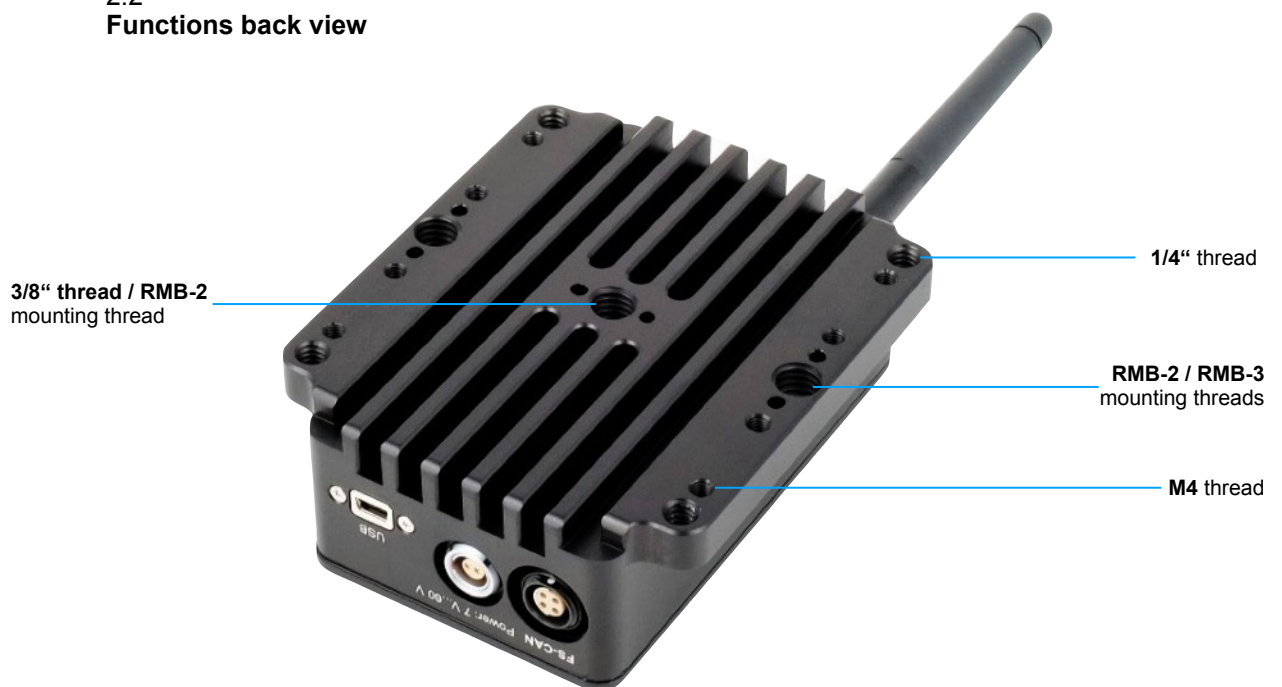
Provides additional information to clarify or simplify a procedure.

## 2 Functions

### 2.1 Functions front view



### 2.2 Functions back view



### 3 Introduction

NOTICE

The external radio modules ERM-2400 and ERM-900 have been developed exclusively for use with the SRH-3 and SRH-360 remote heads. Any other use is not recommended and may damage the modules.

3.1  
How It Works

NOTICE

The ERM modules are already paired with each other. The modules can be used both as transmitters and receivers. Avoid mixing individual modules with other paired ERMs.

ERM-2400 for LCS and ERM-2400 for SRH are NOT compatible with one another.

### 4 Powering the remote control panel (RCP)

Ensure that the SRH remote control panel is powered with 12V.

NOTICE

The SRH remote control panel must be externally supplied with 12 V in order to enable a wireless connection later.



Recommended power supplies:

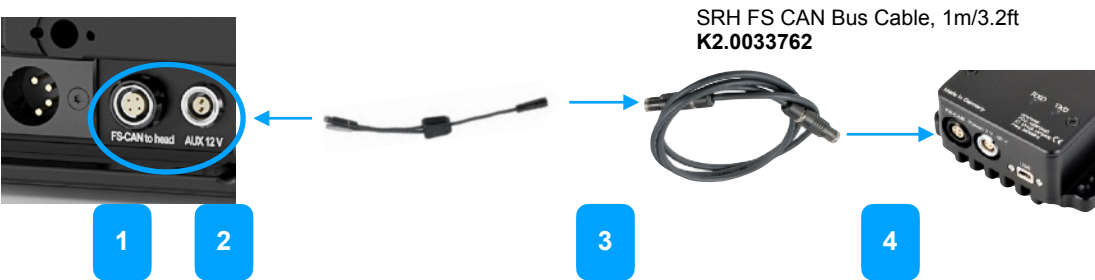
SRH-3 RCP ext. Power Supply Set Gold-Mount	K0.0024195
SRH-3 RCP ext. Power Supply Set V-Mount	K0.0024196
12V Battery Power Cable, D-Tab, 4pin XLR	K2.002142



### 5 Connecting the ERM

5.1  
Connect the first ERM to the remote control panel (RCP)

Connect **both** plugs of the **ERM Power Cable** to the remote control panel. (FS CAN Bus & Aux 12V). Then connect a **FS CAN Bus extension cable** to the **ERM Power Cable**. Finally connect **FS CAN Bus extension** to the **ERM**.



## 5.2

**Connect the second ERM to the remote head**

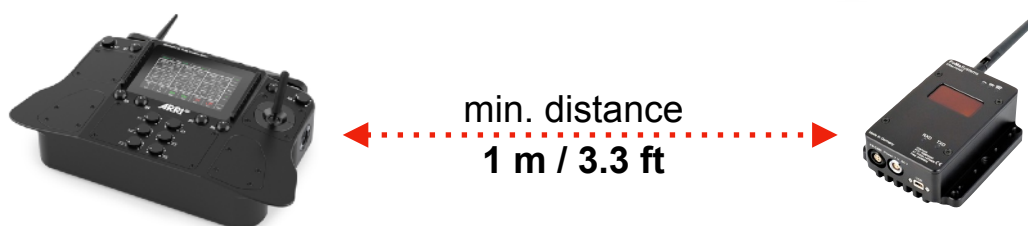
Connect the **FS CAN Bus Cable** to the remote head and then to the **ERM**.



## 6 Positioning the ERMs

### ⚠ CAUTION

To exclude any health risk, the minimum distance between the ERM transmitter and the operator must be at least 1 m.



### NOTE

To increase the transmission range, it is recommended to mount the transmitter on a stand or in some other way in an elevated position.

### NOTE

Additional FS CAN Bus extension cables allow longer distances between the remote control panel and the transmitter.



## 6.1

**Requested additional extensions cables:**

SRH FS CAN Bus Cable, 1m/3.2ft	<b>K2.0033762</b>
SRH-3, FS CAN Bus Cable, 10m/32.8ft	<b>K2.0019302</b>
SRH-3, FS CAN Bus Cable, 25m/82 ft	<b>K2.0019301</b>
SRH-3, FS CAN Bus Coupler, 0.2m/0.65ft	<b>K2.0019300</b>



## 7 Pairing the ERMs

If paired ERMs has lost the connection and a restart did not help, the modules must be paired again.

After the **first** ERM had been attached to the RCP, press **Menu** to reach the Settings.

The sequence of screens is as follows:

- Main Menu:** A grid with 'Settings' highlighted in a blue box.
- Settings:** A grid with 'Radio' highlighted in a blue box.
- Settings - Radio:** A grid with 'External Radio Configure' highlighted in a blue box.
- External Radio Configure:** A screen with the text 'Please detach the first External Radio Module' and a 'Cancel' button.

Accompanying the 'Please detach the first External Radio Module' screen is an image of an ERM being disconnected from the RCP, with a red 'X' over the connection point. Below the image, the text reads: **Disconnect the first ERM for a short moment**.

Press External Radio Configure, wait a short while and follow the advice.

The sequence of screens is as follows:

- External Radio Configure:** A screen with the text 'Please attach the first External Radio Module' and a 'Cancel' button.
- Reconnect the first ERM:** An image showing an ERM being connected to the RCP with a green arrow indicating the connection.
- Configuring External Radio Module ... Please wait ...:** A screen with a 'Cancel' button.

Reconnect the **first** ERM one more time.

The sequence of screens is as follows:

- External Radio:** A grid with 'Detected Radio P2400' highlighted in a blue box.
- External Radio - Detected Radio P2400:** A grid with 'Apply' highlighted in a blue box.
- External Radio - Detected Radio P2400 - Apply:** A screen with the text 'Please detach the first External Radio Module' and a 'Cancel' button.

Accompanying the 'Please detach the first External Radio Module' screen is an image of an ERM being disconnected from the RCP, with a red 'X' over the connection point. Below the image, the text reads: **Disconnect the first ERM**.

Now the first ERM had been detected and connected. In this case the ERM-2400. When ready, detach the first ERM.

The sequence of screens is as follows:

- External Radio:** A screen with the text 'Please attach the **second** External Radio Module' and a 'Cancel' button.
- Connect the second ERM:** An image showing a second ERM being connected to the RCP with a green arrow indicating the connection.
- Configuring External Radio Module ... Please wait ...:** A screen with a 'Cancel' button.

Connect the **second** ERM.

The sequence of screens is as follows:

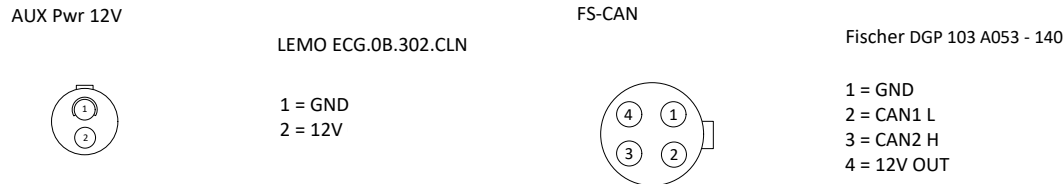
- Finishing Please wait...:** A screen with a 'Cancel' button.
- Your External Radio Modules have been configured successfully:** A screen with an 'Ok' button highlighted in a blue box.

Both **ERMs** are now ready for **Plug & Play**



# 8 Technical Data

## 8.1 Pinout



## 8.2 ERM-2400 Specifications Electrical/General

Supported Frequency	2.400 - 2.4835 GHz
Spreading Method	Frequency Hopping, DTS

## 8.3 ERM-900 Specifications Electrical/General

Supported Frequency	902 - 928 MHz
Spreading Method	Frequency Hopping, DTS

## 8.4 Dimensions without antenna ERM-2400 / ERM-900

Length	11 cm / 4.33"
Width	9 cm / 3,54"
Hight	4 cm / 1,57"

## 8.5 Weight

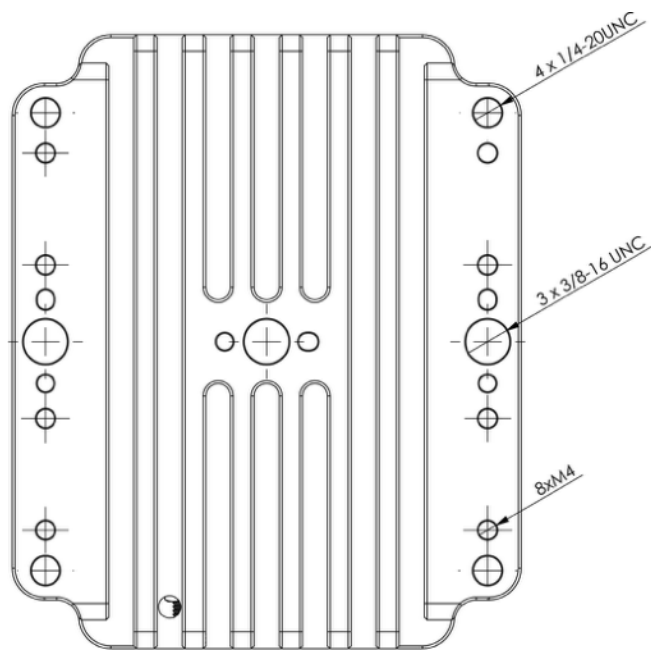
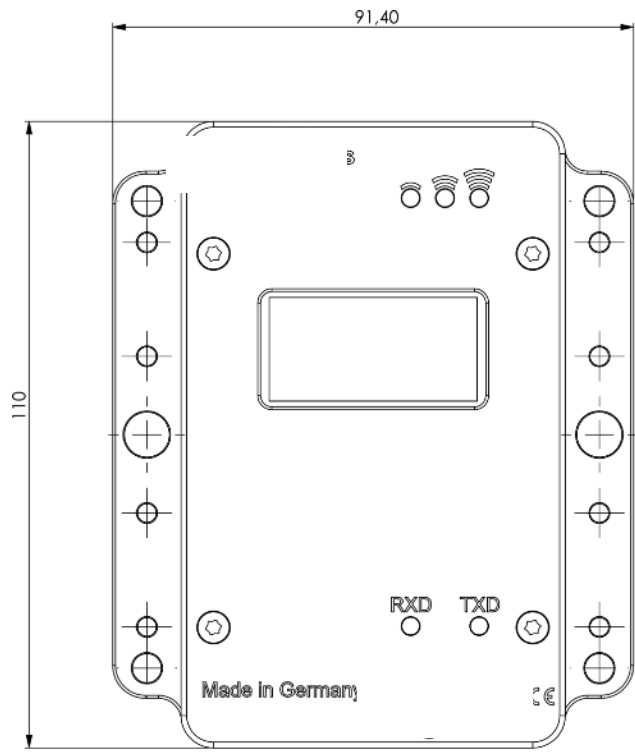
380 gr / 0.83 lb

## 8.6 Operating Temperature

-40°C / -40° to 85°C / 185°F

Humidity 5% to 95% non-condensing

8.7  
Dimensional Drawings



## 9 Declarations of Conformity

### 9.1

#### Approval Information

The products offered by ARRI are approved for use in a number of countries. Product-specific information on approval can be found in the respective operating instruction manuals. Import and use in countries other than those mentioned in the respective operating instructions may be subject to legal, regulatory, or official requirements and regulations. Before the products are imported into these countries or used in these countries, compliance with the existing legal, regulatory, and administrative requirements and regulations must be ensured. It is the importer's or the user's responsibility, prior to importation or use, to inform themselves of the applicable legal, regulatory, and administrative requirements and regulations and to ensure compliance with these requirements and regulations, including applying for and obtaining any necessary approvals or registrations.

As far as reasonable and legally possible, ARRI will support requests in relation to such applications by providing technical documents or declarations. As an importer or user, you confirm that you are familiar with and comply with the legal, regulatory, and administrative requirements and regulations that apply in the countries to which you ship or use the products. You further confirm that you will arrange for any necessary registrations, enrolments, or authorisations that are required in such countries. You release ARRI from all obligations resulting from any legislative, regulatory, or administrative requirements regarding import or use of the products, except in countries where ARRI has obtained a registration or certification. You agree to indemnify, defend, and hold ARRI harmless from any and all claims, damages, losses, liabilities, costs, and expenses (including reasonable fees of attorneys and other professionals) that may arise out of a demand on ARRI in connection with your obligations mentioned above.

9.2  
CE

FoMaSystems GmbH • Oskar-Sembach-Ring 11 • 91207 Lauf • Germany



## Declaration of Conformity

**Product Type** External Radiomodule  
**Brand Name** FoMaSystems  
**Product Name** FoMaSystems ERM-P2400

**Address** FoMa Systems GmbH  
 Oskar-Sembach-Ring 11  
 D-91207 Lauf

The product complies with the requirements of the following European directives:

**2014/53/EU** DIRECTIVE 2014/53/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC

Compliance was proved by the application of the following standards:

**EN 62368-1:2014 + AC:2015**  
**Draft ETSI EN 301 489-1:V2.2.0 (2017-03)**  
**Draft ETSI EN 301 489-17:V3.2.0 (2017-03)**  
**EN 300 328 V2.1.1**

**2011/65/EU** Directive of the European Parliament and of the council on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Compliance was proved by the application of the following standards:

**EN 50581 : 2012**

Eigentumsvorbehalt: Die gelieferte Ware (Vorbehaltsware) bleibt bis zur vollständigen Erfüllung der Kaufpreisforderung Eigentum des Verkäufers.  
 Es gelten die AGB der FoMaSystems GmbH (einsehbar unter [www.foma-systems.com](http://www.foma-systems.com)).

FoMaSystems GmbH  
 Oskar-Sembach-Ring 11  
 91207 Lauf / Deutschland

Sitz der Gesellschaft  
 Lauf a. d. Pegnitz

**Kontakt**  
 Tel. +49 (0) 9123 157 39 80  
 Fax +49 (0) 911 570 98 75

[info@foma-systems.com](mailto:info@foma-systems.com)  
[www.foma-systems.com](http://www.foma-systems.com)

**Geschäftsführer**  
 Dr.-Ing. Roman Foltyn  
 Rainer Maertin

VAT-ID: DE296542680  
 Steuernummer: 241/126/60204

**Amtsgericht Nürnberg**  
 HRB: 30926

**Deutsche Bank AG**  
 IBAN: DE 30 7607 0024 0043 2930 00  
 BIC: DEUTDE33HAN



Year of the first marking: **2019**

Die Übereinstimmung mit den Richtlinien erfolgte unter Anwendung nachfolgend genannter Normen:

The compliance with the requirements of the European Directives was proved by the application of the following standards:

Grundlegende Anforderungen zu Nr. 1. Essential Requirements regarding No 1

- EN 62368-1:2014 + AC:2016
- Draft ETSI EN 301 489-1:V2.2.0 (2017-03)
- Draft ETSI EN 301 489-17:V3.2.0 (2017-03)
- EN 300 328 V2.1.1

Grundlegende Anforderungen zu Nr. 2. - Essential Requirements regarding No 2

- EN 50581:2012;

Exposition von Personen gegenüber elektromagnetischen Feldern - Exposure of people to electromagnetic fields

- EN 62479 :2010;

Für die Ermittlung der entsprechenden Normen haben wir die folgende Quelle verwendet:

To evaluate the respective information, we used:

[http://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/index\\_en.htm](http://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/index_en.htm)

Jahr der Anbringung des CE-Zeichens / Year of affixed CE-marking: 2019

Lauf, den 19.04.2021  
*Roman Foltyn*

A handwritten signature in blue ink, appearing to read "Roman Foltyn".

CEO

## 9.3

**FCC Statement / IC Statement****USA**

ERM-2400 contains: FCCID: **NS9P2400**

ERM-900 contains: FCCID: **NSN920X2**

The ERM-2400 will be shipped with readjusted 0.1Watt transmission power to be compliant in all addressed markets.

**NOTICE**

For USA and Canada the transmission power can be changed locally by the ARRI service to **1Watt** transmission power.

**NOTICE**

Therefore ERM-900 can only be ordered from ARRI Inc. in USA.

**Using the ERM-900 outside USA and Canada is illegal!**

**§15.19(a)**

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.

Part 15 Clause 15.21

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTICE**

**Make sure that you select the proper area you are operating the device in.  
All available region settings comply with Part 15 of the FCC rules.**

**Canada**

ERM-2400 contains: IC **3143A-14P2400**

ERM-900 contains: IC **3143A-N9020X2**

This device complies with Industry Canada's licence-exempt RSSs.

Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- 1) l'appareil ne doit pas produire de brouillage;
- 2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## 9.4

**Australia / New Zealand**

R-NZ

## 9.5

**Japan**

® 210-114971