



HAND HELD EID  
TAG READER &  
DATA COLLECTOR  
**HR4**

PUBLISHED BY  
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Gallagher HR4 Hand Held EID Tag Reader & Data Collector  
User Manual

3E3020 - Edition 2 - June 2013

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Developed and manufactured by Gallagher Group Limited, and ISO 9001 2000 Certified Supplier.

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## OVERVIEW

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The Gallagher HR4 Hand Held EID Tag Reader & Data Collector is a Bluetooth enabled reader that allows the user to read and store ISO animal Electronic tag ID numbers as well as record traits and activities against the ID. The Gallagher HR4 is also capable of sorting animals from a predefined list of Electronic IDs and it can read both HDX (Half Duplex) and FDX-B (Full Duplex) Electronic ID tags.

### Kit Contents

The Gallagher HR4 box contains:

- Gallagher HR4 Hand Held EID Reader & Data Collector (Bluetooth enabled)
- 5 VDC USB charger (110-240 VAC)
- USB Car Charger (12-24 VDC)
- 12 volt battery cable
- USB cable
- Instruction manual
- Animal Performance Software (APS)

### Animal Performance Software (APS)

APS can be installed on your PC from the CD provided with the HR4. It enables the transfer of data between the HR4 reader and a PC via Bluetooth or USB. APS can also be used with other Gallagher Weighing & EID equipment to serve as the main database for all of your animal information.

For further details refer to the APS User Guide (accessible via the Help menu in APS).

### Charging the internal battery

**Important:** The HR4 Reader must be fully charged before first time use. It is recommended that the battery is charged overnight. It takes approximately 8 hours to fully charge the battery from mains power. The ambient temperature limits for charging the battery are 0° to 45° Celsius.

For more information about charging the battery, see *Battery Charging* (p. 16).

### First Time Use

The very first time the Handheld Reader is powered up:

- the current date, time and time zone will need to be verified.

## FEATURES



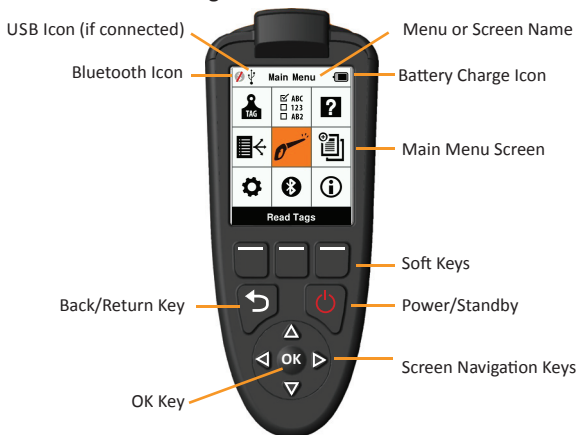
Feature	Description
Trigger	When in the 'Read Tags' (Collect) screen, pull the trigger to begin reading tags.
Light	The red light flashes when transmitting and illuminates continuously when a tag is read.
Vibrator	A single vibration is felt in the handle with every successful EID tag read.
Antenna	The HR4 antenna has a read range of 27 - 33 cm. <b>Note:</b> If there is more than one tag within range, neither tag may be read.
USB connector & Dust cap	The supplied USB cable connects to the HR4 via the connector beneath the dust cap. This cable enables: <ul style="list-style-type: none"> <li>• data to be transferred to/ from a computer</li> <li>• the supplied USB charger to charge the internal battery</li> </ul> Replace the dust cap when cable not in use.
Memory	<ul style="list-style-type: none"> <li>• Over 100,000 EID records can be stored in the HR4.</li> <li>• When the memory is 90% full, a pop up warning will be displayed.</li> <li>• When the memory is full, no further tag reads will be accepted until one or more sessions have been deleted.</li> </ul>

### Auto Power Down









The HR4 will power itself down after 30 minutes of inactivity. This setting is only controlled via the APS software. The setting is On by default, however can be set to Off to prevent the reader powering off automatically at any time.

## Screen & Keypad

Use the power key on the keypad to power up the HR4 and display the main menu options. See *Main Menu Screen* (p.6) for more information on accessing the screen functions.



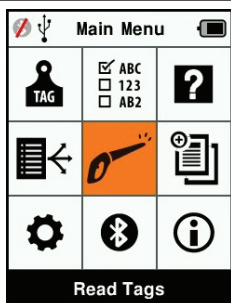
### Keypad Button Functions & Screen Icons

Key or Screen symbol	Description
	Power/ Standby Press to turn on or re-start the HR4. Hold for 3 seconds to turn off the HR4.
	Screen Navigation Keys Use these arrow keys for menu navigation and to select menu options.
	OK Used in conjunction with Navigation keys to confirm selection and may open another screen.
	Back/Return Key Press this key to exit a screen and return to the previous screen. It may need to be pressed more than once to return to the Main menu screen.
	Soft Keys Soft keys perform the function detailed directly above each button. (Available on some menu options.)
	Battery icon Shows the level of charge remaining in the internal battery. See <i>Power Options</i> (p.15)
	Bluetooth icon Indicates if the internal Bluetooth module is communicating with another device. See <i>Bluetooth</i> (p.13)
	USB icon Displays when the Reader is connected to a PC.

## MAIN MENU SCREEN

When the Gallagher HR4 is powered up, the Main Menu screen is displayed. All actions on the reader are initiated from this screen via the keypad.

Use the arrow keys to navigate to the required menu option. Press the **OK** button to select it.



### Main Menu Options & Icons

Icon	Name	Description
	Tag Display	Allows you to configure how the tag data is displayed. Refer to <i>Tag Display</i> (p.9) for more information.
	Sort Lists	Used to view the sort lists and their detail which have been loaded from APS to the reader. Refer to <i>Sort Lists</i> (p.11) for more information.
	Settings	Allows you to configure the reader. Refer to <i>Settings</i> (p.12) for more information.
	Traits	View traits or life data items that have been loaded to the reader from APS. Refer to <i>Traits</i> (p.11) for more information.
	Read Tags (Collect screen)	Used to read EID tags and record animal information. Read mode can be either single tag or continuous. Refer to <i>Settings</i> (p.12) for more information.
	Bluetooth	This menu allows the user to control the Bluetooth settings of the reader. Refer to <i>Bluetooth</i> (p.13) for more information.
	Help	Displays help screens to aid with setting up and getting started on the HR4.
	Sessions	Sessions capture all the tag data read from a group of animals. Refer to <i>Sessions</i> (p.7) for more details.
	Info	Displays detailed memory and battery information as well as the model, software, hardware versions and bluetooth address.



## Sessions

All the data read by your HR4 reader, is collected into sessions. A session **must** exist before the reader will read any tags.

The options available from the Session Menu are:

<b>New Session</b>	Use this to create and open a new session, ready to read tags.
<b>Session Summary</b>	Shows the current session name, starting date, and total tags read.
<b>List all Sessions</b>	Displays a list of all sessions stored in the reader. Sessions can be selected to delete, open as current session.
<b>Edit Current Session</b>	Enables navigation to the current session so the user can change associated traits, activities, life data or sort list, where allowed.

### New Session

New sessions may be created for the following reasons:

- A new session is required for a new day's activity.
- A different group of animals are to be read into a separate session.

### Adding traits to a session

On the HR4 Reader, a session can be configured so the user is able to assign trait values to the animal from a list of values. Up to 3 traits, activities or life data fields can be specified for a session.


**Note:** If no traits or life data are specified for a session, the Read Tags screen will display animal count only.

### Sort list execution in session

When setting up a new session, it is possible to select a sort list to apply to the animals scanned within the session. As the animals are scanned, their sort assignment will be displayed to the user, along with any colour that may have been assigned to the sort group.

Sort lists and group colours are configured in APS on the PC.

## How to start a new session

1. From the Main Menu screen select the Session icon  and press **OK**.
2. On the Session Menu, select **New Session** and press **OK**.

- The session name is automatically created based on the current date and an alphanumeric character.

3. To assign traits add/or a sort list to the session, use the arrow keys to select **Yes** if required for either option.
4. Press the **Next** softkey to proceed to session setup.



**New Session**

Name 2013-04-03C

Session Options

Record Traits **Yes**

Sort by List **No**

**Next**

5. If **Yes** was selected for Record Traits, a list of traits available will be displayed.

- Use the arrow keys to select the required trait and press the **Select** softkey.
- Repeat, to select up to 3 traits for the session.
- The order of the selected traits will be displayed as a number to the right of the trait.
- Press the **Next** softkey.
- If desired, a default value can be assigned to a trait by using the arrow keys to scroll through the options. This will automatically be applied to the animal once scanned but can be changed from the Read Tags screen during scanning.
- Press the **Next** softkey.



**New Session**

Name: 2013-04-04D

Select up to 3 traits:

<no traits>	
<b>Condition</b>	
Drench	
Gender	1
Wet or Dry	

**Select** **Next**

6. If **Yes** was selected for Sort by List, a table of available sort lists will be displayed.

- Use the arrow keys to select the required sort list, and press the **Next** softkey.

**Note:** Traits and sort lists are loaded to the reader via APS. Please refer to the *APS User Guide* for further information.

7. The screen will display your session setup summary. Press the **Done** softkey to confirm session options and begin reading tags.



**New Session**

Name: 2013-04-04D

Select Sorting List:

<b>&lt;no sorting&gt;</b>
Empty List
Calving Heifers Jul
Heifers Aug
Weaners Jul
Weaners Aug

**Next**

**Note:** Navigating away from the new session screen when trying to create a new session, will result in the session being cancelled.

## Tag Display

### VID Cross reference

The Hand Held Reader maintains a cross-reference table that links an animal's Electronic ID with the animal's Visual Tag Number. Once it makes this link, it will recall the Visual Tag Number the next time the Electronic ID is read.

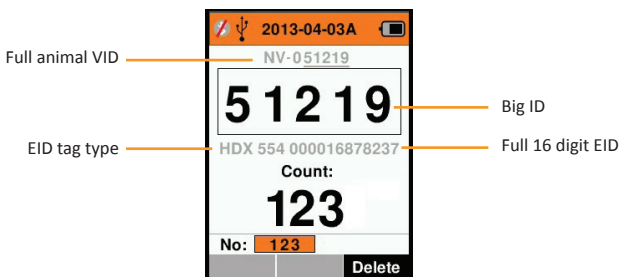
A cross-reference file containing EIDs and corresponding VIDs can be exported to the Hand Held Reader prior to a tag reading session, using APS. The VID is displayed above the Big ID box on the Reader screen and the EID is displayed below it, when the tag is read. The numbers in the Big ID screen will be part of the EID or VID depending on your Tag Display setup.


### Big ID on display

If there is a cross-reference table that provides the VID for the scanned animal, you will see both the EID and VID on the screen.

The Big ID field can be configured to show the VID or EID. It can be used to highlight the part of the VID or EID that is most significant to you.

### To Setup the Big ID field




1. From the Main Menu, select the **Tag Display** icon  and press **OK**.
2. Using the arrow keys make field selections.

Digits	The number of digits (from 3 to 10) are shown in large type
Show Type	Determines if the EID tag type HDX or FDX will be displayed
EID or VID	Indicates which ID is displayed in the Big ID box
Offset	Determines the number of digits from the right of the VID that are ignored for the large digit display (only for VID).

3. Press the **Return** key to exit to the Main Menu and save changes.

## Read Tags

When the Reader is powered on, the main menu screen will be displayed with the Read Tags icon  highlighted.

Press the **OK** button to start reading tags.

### To read a tag

**Squeeze the trigger** on your Reader and pass the antenna near the tag. A red light will show on the antenna, when the reader is attempting to read a tag.

A beep will sound, a vibration felt in the handle and the screen will update with the Electronic ID tag information, indicating a successful tag read.

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**Important:** If the Beeper and Vibrator have been turned off in Settings, a successful tag read will be indicated by the tag information changing on the screen only.

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The fields on the Read Tags screen will vary depending on the Session settings. See *Sessions* (p.7).

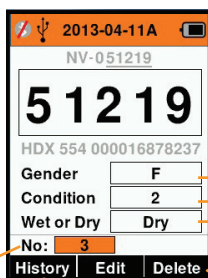
The tag number displayed in the big ID field will vary depending on your Tag Display setting. See *Tag Display* (p.9).

**Count or 'No:'** The counter will increment each time a tag is read to show the number of animals in the current session.

The 'No:' field on the lower left of the screen, can be selected to scroll back through the previous animals in the session.

If Record traits = **NO**

If Record traits = **YES**



Traits included in this session

No soft key assigned

Tags counted in this session

Press soft key below to view animal history

Press soft key below to Edit trait values

Press soft key below to Delete tag shown

## Sort Lists

A sort list contains a list of animal ID's, each with a sorting assignment. This assignment may be used to separate animals into predefined groups, or to flag specific animals for selection.

The Sort Lists screen shows all the sorting lists available on the reader. These lists are imported from APS.

### To view a sort list

1. From the Main Menu, select **Sort Lists** and press **OK**. The sort lists available on the HR4 will be displayed.
2. To view the contents of a sort list, select a list and press **OK**.
3. A list of animal ID's (VID or EID as set in the Tag Display screen) with a numeric sort group assigned, will be displayed. Press the **Return** key once to go back to the sort list and again to return to the Main menu.

**Note:** The sort list 'Empty List' is the factory default and contains no animals. This can be used to assign sort groups to each animal as it is scanned, rather than from a predefined list.

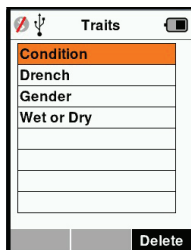
Sort lists are compiled or edited in APS then downloaded to the reader. Changes made to a list, will be effective for all sessions that use the list after the change is made.

## Traits

The Traits screen, lists all the traits available on the reader, which have been imported from APS or are the factory default traits. These traits can be assigned to an animal in a session.

### To view a list of values for a trait

1. From the Main Menu, select Traits and press **OK**. A list of the traits available on the HR4 will be displayed.
2. To view the trait values, select a trait and press **OK**.
3. Press the **Return** key once to go back to the trait list and again to return to the Main menu.



**Note:** A trait can only be deleted if it is not used in any session on the reader, by pressing the **Delete** soft key. A pop up message will either ask you to confirm the deletion or advise which session the trait is still in use.

See *APS User Guide* for more information about importing traits.

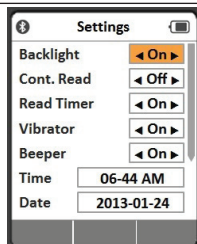
## Settings

The Settings screen is accessed directly from the Main Menu screen and is a quick way to turn functions On and Off using the arrow keys.

Setting	Options	Description
Backlight	On* (5 minutes) Off	Controls the backlight of the Reader. Time-out period can be configured via APS.
Cont. Read	Off*	Reader stops transmitting once a single tag is read.
	On	Reader continues to transmit following tag read, allowing multiple tags to be read.
Read Timer	On*	Determines time allowed for transmitting a tag read: Continuous Read - 5 minutes* Non-Continuous Read - 5 seconds* Time-out period can be configured via APS.
	Off	Unlimited read time. Time-out will occur with power off time-out
Vibrator	On* Off	A successful tag read is confirmed with a vibration in the handle.
Beeper	On* Off	A single beep can be heard after a successful Electronic ID tag read.  Two beeps can be heard on a duplicate tag read.
Time	10:03 AM	The current time is displayed. Select and press <b>OK</b> to change the time.
Date	Y-M-D*, M-D-Y, D-M-Y.	Select and press <b>OK</b> to set the date format and date. Time and Date are used to create Session names.
Zone	NZL - NZST*  *Default settings	Indicates the time zone. Select and press <b>OK</b> to change country zone and set time and date automatically.

### Changing Settings

1. Use the up and down arrows to scroll to each function to select it.
2. Use the left and right arrows to turn the function **On** or **Off**.
3. For the Time and Date fields, select the field and press **OK**. Use the field arrows to select the correct time and date.
4. Press the **Return** key to save changes and return to Main menu.




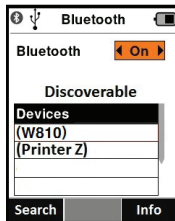
**Note:** APS can be used to alter advanced time-out settings. Refer to the *APS User Guide - Device Setup* for further details.

## Bluetooth

The HR4 Reader is Bluetooth enabled, able to be searched for and connected to, by other devices (Discoverable), or perform a search to initiate the connection itself. Only one Bluetooth device can be connected to the reader, at any time.

### Bluetooth Setup

1. From the Main Menu screen, use the arrow keys to select the Bluetooth icon  and press **OK**.
2. Use the left or right arrow key to select **On**. The connection status and device table will be displayed and the connection status will be in 'Discoverable' mode.
3. The Reader is now able to be searched for and found by other devices (Discoverable). The status of the current connection is displayed on the screen.



4. To initiate a connection from the HR4. Reader, press the **Search** softkey. This will search for new Bluetooth devices in range. As the name of each device is received it will be displayed, replacing the Bluetooth address.

#### Notes:

The table will be empty if no devices have previously been found. Any previously connected devices will be displayed in parentheses. e.g. '(W810)'



5. Use the arrow keys to select a device to connect to and press the **OK** button. The connection status will change to **Connecting...** Additional information can be viewed by pressing the **Info** softkey once a device is selected from the list.



6. Press **Return** key to save settings and return to the Main menu.

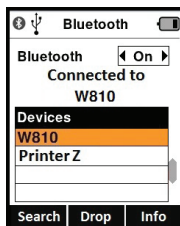
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**Important:** You may be prompted for a pass-code to complete the Bluetooth pairing.

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**Notes:**

- The current connection will be dropped when you press the **Drop** soft key.
- If the connection is not dropped, the device will attempt to reconnect once, when next powered up.
- If the connection is dropped and no other Bluetooth connection is made, the device will **NOT** attempt to reconnect when the reader is next powered up.

**Bluetooth Icon Descriptions**

BT Icon		Description
	Flashing	Trying to connect to Bluetooth device
	Steady Blue	Bluetooth device connected
	Grey / Red line	No Bluetooth connection active, but Reader is <b>Discoverable</b>
	No icon	Bluetooth disabled



# POWER OPTIONS

When the HR4 is fully charged, it is expected to operate for 3-4 working days in typical yard applications.

Charge time will vary depending on the capacity of the power adapter and whether the reader is in use. Fastest charging is achieved via the mains adapter when reader is off.  
(Approximately 8 hours.)

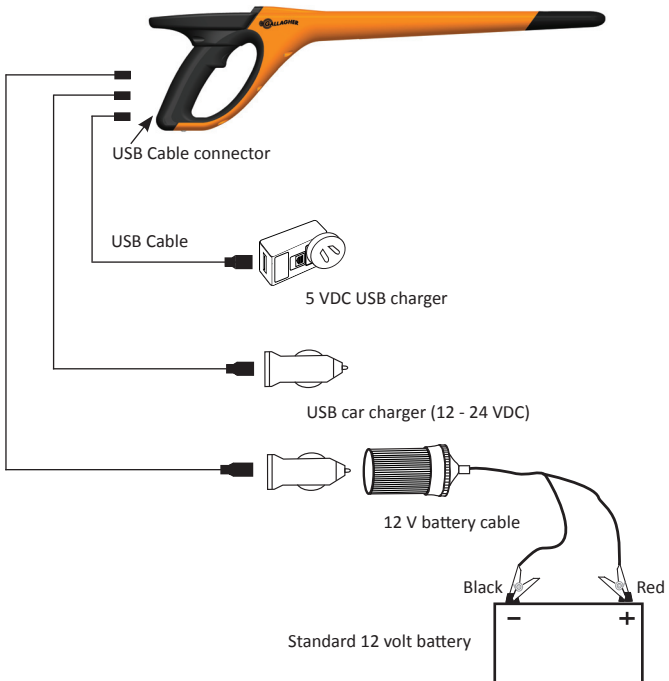
The Reader will operate while being charged, however charging will take longer while the Reader is in use with the backlight on.

## Charging the Handheld EID Reader

The internal battery of the Reader can be charged using :




- a 5 VDC USB mains power adapter
- the 12 - 24VDC USB car charger included with the Reader
- a 12 V vehicle battery.

Connect the components needed (supplied with your HR4) for your preferred charging method as shown below and plug into the necessary power source for your charger.







## Operation

During operation, the battery icon on the Reader screen, indicates the actual amount of charge left in the battery. An estimate of the remaining battery percentage can be found in the **Information** screen on the Main menu.

Fully charged		The battery icon displays as full with a solid black block.
Partial charged		The battery icon displays a graduated indication that approximately represents the remaining charge left in the internal battery pack.
Almost flat		When the level of charge is less than 10% the bar turns red. At 5% the battery outline flashes as well.

## Charging

When the Reader is connected to a charger, the battery icon displays the charging status as follows:

Charging		The battery icon shows the battery constantly filling from the point of the remaining charge.
Trickle charging		Battery icon shows only one clear bar that is constantly travelling the length of the full icon.
Over / Under Temperature		Ambient temperature is outside recommended range of 0 - 45°C. The reader will not charge above 45°C.
Charging Error		There is a condition preventing charging. i.e. excessive supply voltage. Check all connections.

## CONNECTING THE HR4 TO A COMPUTER

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In order to view or alter advanced settings on the HR4, you will need to establish a connection between the HR4 and a PC/laptop that has APS software installed.

- Plug the USB cable supplied with the HR4 into the Hand Held Reader.
- Plug the other end of the cable into a USB COM port on your computer.
- Turn on the Reader.
- Use your APS software to configure advanced settings.

See *APS User Guide* for further details.

## CARE AND MAINTENANCE

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The Gallagher HR4 Hand Held EID Tag Reader is a tough and reliable product designed for use in typical livestock environments. However, proper care and maintenance can extend the Reader's life.

Listed below are guidelines for keeping the Reader in good condition.

- For optimal battery life, Gallagher recommends that you store the Reader in a cool, dry area (10 to 30 ° Celsius) inside the supplied hard case and out of direct sunlight.
- After use, clean the Reader with a damp cloth. Take care not to scratch the display.
- Recharge the batteries after use and before storing for extended periods.
- Ensure the dust cap is pushed onto the USB cable connector on the reader after charging, to prevent dirt and dust entering the connector.

## SPECIFICATIONS

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Internal battery type:	Nickel-metal hydride
Internal battery voltage:	9.6 volt
Typical charge time on mains charger:	8 hours
IP (Ingress Protection) Rating:	IP67
Operating temperature range:	-10°C to +50°C
Storage temperature range:	-10°C to +30°C

## WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

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This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city recycling office or the dealer from whom you purchased the product.

# APPROVALS AND STANDARDS

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## FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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 can radiate 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:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**CAUTION:** Changes or modifications not expressly approved by Gallagher Group Limited could void the user's authority to operate the equipment.

## Industry Canada

This device complies with Industry Canada licence-exempt RSS standard(s). 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.

The carrier frequency is 134.2 kHz, the RF output power is 75 dB $\mu$ V/m @ 10 m.

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# APPROBATIONS ET NORMES

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## FCC

Cet appareil est conforme à la Partie 15 des règlements FCC. Son opération est sujette aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet équipement a été testé et trouvé conforme aux limites des appareils numériques de Classe B, conformément à la Partie 15 des règlements FCC. Ces limites sont conçues pour offrir une protection raisonnable contre l'interférence dommageable dans une installation résidentielle. Cet équipement génère, utilise et peut émettre des radiations d'énergie radioélectrique et, si non installé et utilisé conformément aux instructions, pourrait causer une interférence dommageable aux radiocommunications. Toutefois, il n'existe aucune garantie que cette interférence ne se produira pas dans une installation particulière.

Si cet équipement cause une interférence dommageable à la réception des radiocommunications et télécommunications, laquelle interférence peut être déterminée en éteignant puis en allumant à nouveau l'équipement, l'utilisateur est encouragé à tenter de corriger l'interférence en prenant une ou plusieurs des mesures suivantes:

- Réorientation ou déplacement de l'antenne de réception.
- Augmentation de la distance entre l'équipement et le récepteur.
- Connexion de l'équipement dans la prise d'un circuit différent de celui auquel le récepteur est connecté.
- Consultation auprès du distributeur ou d'un technicien radio/télévision expérimenté pour une assistance.

**AVERTISSEMENT:** Tout changement ou modification non expressément approuvé par Gallagher Group Limited peut révoquer votre droit d'utilisation de cet équipement.

## Industrie Canada

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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

La fréquence porteuse est de 134,2 kHz, la puissance de sortie RF est de 75 dB $\mu$ V/m @ 10 m.