GALLAGHER

SmartReader

R Series

Table of Contents

OVERVIEW

The Gallagher SmartReader R Series is a panel reader for use in permanent installations where it can be connected to:

- an external power supply, and
- a permanently connected data collection device.

The captured Electronic ID tag data is transferred to the data collection device (Scale or computer).

The SmartReader R Series has two parts:

- The SmartReader
- The Antenna Panel

Two Antenna Panel sizes are available to suit the animals being scanned. There are two models in the SmartReader R Series:

- **R600 RFID Panel Reader (G03113 & G03121)**
  - Small Antenna Panel (600 mm x 400 mm).
  - SmartReader with external power.
  - RS-232 port for transferring data to the Scale.

- **R1300 RFID Panel Reader (G03113 & G031424)**
  - Large Antenna Panel (1300 mm x 600 mm).
  - SmartReader with external power.
  - RS-232 port for transferring data to the Scale.

If required, multiple SmartReaders can operate in close proximity, so long as they are set up to ensure all Electronic ID tags are read correctly.

Electronic ID tags

The Gallagher SmartReader enables you to read both HDX (Half Duplex) and FDX-B (Full Duplex-B) Electronic ID tags.

HDX and FDX-B Electronic ID tags operate differently and therefore have different applications.

Configurator

The Configurator is a software program provided with the SmartReader R Series. Use it to alter settings and to diagnose performance problems in the installed SmartReader.

The Configurator is for **advanced users** and should be used with care as altering settings affects the operation of the SmartReader.

The Configurator software is automatically installed with the MyScale Pro software.

MyScale Pro

Note: The MyScale Pro CD is included with this product so that the Configurator software (Included on the CD) can be installed as required, refer to *Installing the Configurator* in the on-line *SmartReader R / BR Series Configurator User Guide* on the installation CD.*

For the **SmartReader R Series**, MyScale Pro is not used. MyScale Pro does not communicate directly with the R Series SmartReader. The Electronic ID tag information is transferred to a Scale or computer etc.

If the R Series SmartReader is connected to a Gallagher Scale, the captured Electronic ID tag information is incorporated into Scale sessions and can be transferred to MyScale Pro from the Scale.

For information on the MyScale Pro features see the documentation provided with the Scale. For an updated version of the MyScale Pro manual go to the following website: *www.gallagher.co*

USER INFORMATION

SmartReader user interface

Button

Button	Function
Volume	There are three volume modes on the SmartReader.
	1. Flash and beep every read. (Default factory setting)
	2. Flash and beep once
	3. Volume Off
	To change the volume mode on the SmartReader while it is operating, press the **Volume** button once for each mode. Pressing the volume button will cycle through the 3 modes.
	Note: Warning beeps (low battery warning etc) ignore the Volume setting and beep as required.

Audible beep

The SmartReader beeps whenever one of the following situations occurs:

- An Electronic ID tag has been read, except if the volume is set to OFF.
- The volume level is set.
- The battery charge level is low. This warning sounds regardless of the volume set.
- The external power supply level is too low or too high. This warning sounds regardless of the volume level setting.

INSTALLATION

Mounting the Antenna Panel

Antenna Panel Kit

The **Antenna Panel kit** contains the following components:

- Antenna Panel
- Mounting instructions
- Antenna Panel mounting kit:
    - 4 x Washers M8 x 21 mm flat Stainless steel
    - 4 x Bolt M8 x 70mm HEX Stainless steel
    - 4 x Nut M8 HEX Stainless steel
    - 4 x Screw Wood TEK 14 x 10 90mm
    - 4 x Screw Wood TEK 14 x 10 65mm

Notes on locating the Antenna Panel

Gallagher recommends the following when installing the SmartReader Antenna Panel:

- The Antenna Panel can be mounted onto metal pipe or wood work of the animal handler but not solid steel handler walls.
- The edges of the Antenna Panel contain the antenna windings. This means that when the Antenna Panel is mounted, vertical bars should be kept away from the vertical edges of the Antenna Panel and horizontal bars should be kept away from the horizontal edges of the Antenna Panel.

Considerations

- The position of the Antenna Panel installation depends on the type and size of the animals to be scanned and the size of Antenna Panel to be installed.
- Gallagher recommends you mount the Antenna Panel temporarily while you determine the most appropriate position.
- Mounting the Antenna Panel on a metal animal handler can alter the read range of the SmartReader. Gallagher recommends that the SmartReader is mounted on wood or spaced pipework.
- Multiple SmartReaders can be installed in close proximity to each other, so long as they are synchronised to ensure conflicts do not occur between SmartReaders. For further details, see *Installing multiple SmartReaders* (p 16).
- Use the defined mounting holes, because drilling through the Antenna Panel will damage the antenna.
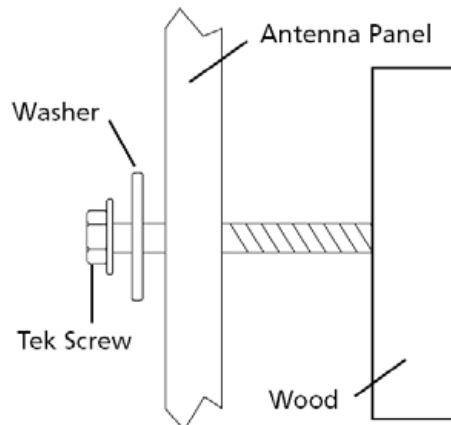
Procedure

1. Measure the vertical range of the Electronic ID tags on the animals to be scanned.
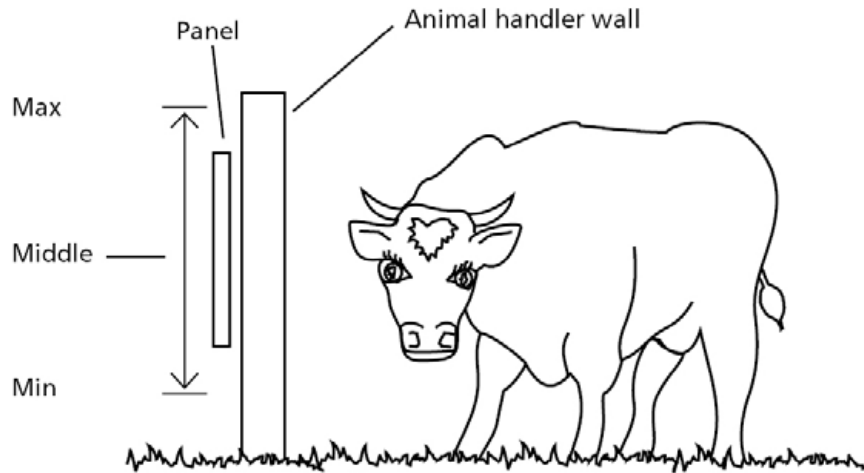
2. Determine the average height of the Electronic ID and mark this on the **outside** of the animal handler.

3. Determine what the Antenna Panel is to be mounted on, wood or pipe work, and prepare the appropriate mounting hardware from the supplied kit.

Wood - washers and tek screws   Pipe work - washers, bolts and nuts
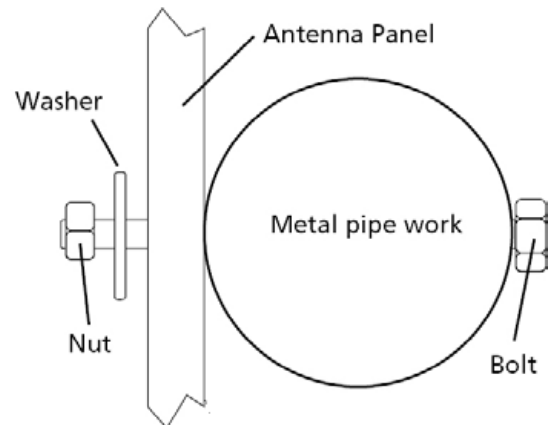
4. Using the **defined mounting holes**, mount the Antenna Panel on the **outside** of the animal handler so that the middle of the Antenna Panel matches the average height.

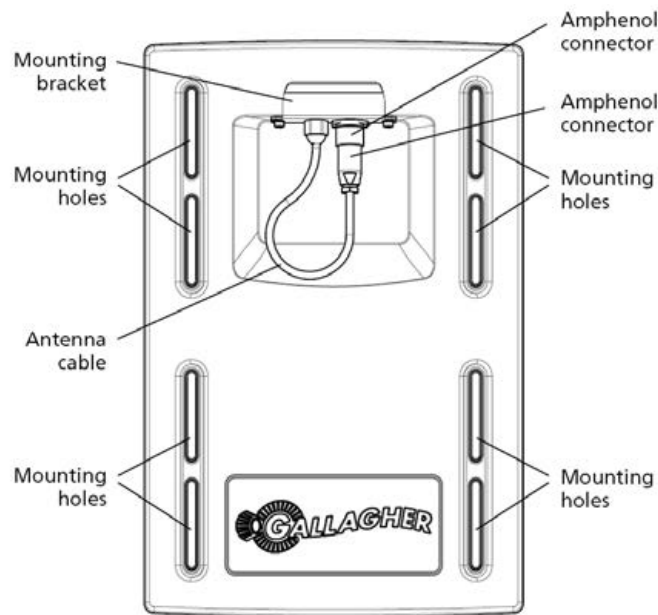**Note:** DO NOT drill through the Antenna Panel as it will damage the antenna.

Note: You may want to temporarily attach the Antenna Panel and test the read range prior to permanently attaching the Antenna Panel.

Mounting the SmartReader

Considerations

Ensure the mounting location of the SmartReader provides protection from being knocked or damaged by animals.
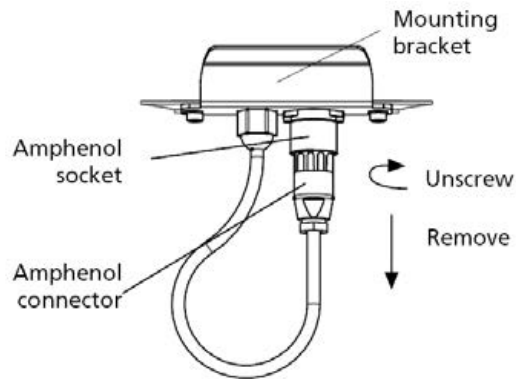
SmartReader Kit

The **SmartReader kit** contains the following components:

- R Series SmartReader
- MyScale Pro CD
- Instruction Manual (this manual)
- Cables
    - Short serial cable (DB9 to DB9)
    - Long serial cable (DB9 to DB9)
    - DB9 to USB adapter

Connecting the SmartReader to the Antenna Panel

For information on using the 4 Metre Antenna Extension Cable Kit see *4 Metre Antenna Extension Cable Kit* (p 23).

1. Ensure the SmartReader is turned off.

2. On the Antenna Panel, unscrew the Amphenol connector locking nut from the Amphenol socket and pull it down to unplug from the Antenna Panel.

3. Mount the SmartReader on the mounting bracket by grasping the SmartReader on both sides and slide the back handle onto the mounting bracket.
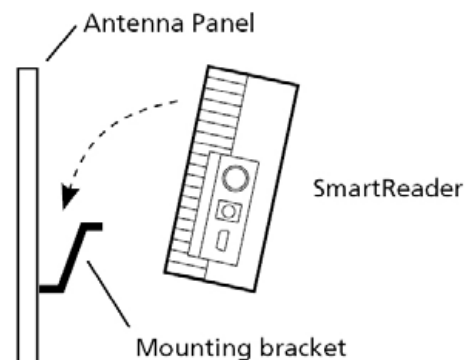
4. Connect the antenna cable to the SmartReader and tighten the locking nut.

Connect the SmartReader to a computer

1. Using one of the supplied cables, connect one end into the RS-232 port on the SmartReader.

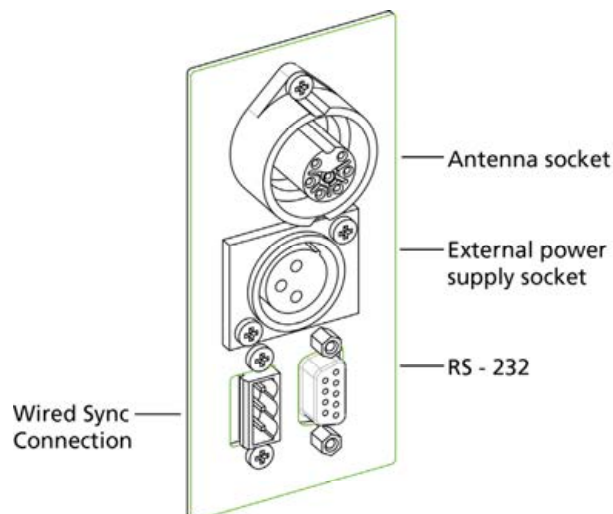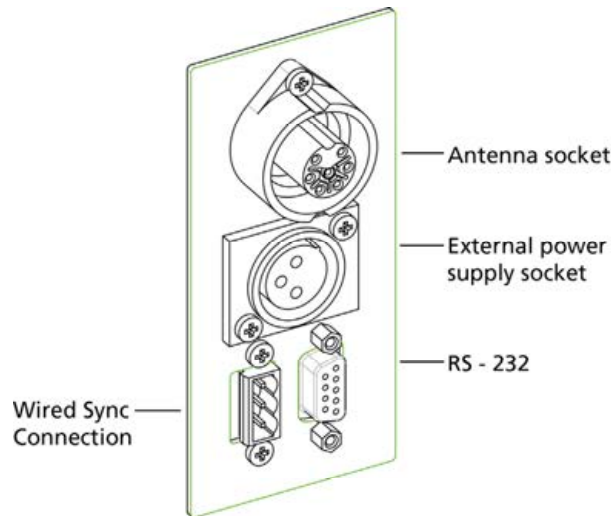
2. Connect the other end into appropriate port on the Scale or computer. Depending on your computer ports, it may be necessary to use a RS-232 to USB adaptor.

Testing the SmartReader EID tag read range

The SmartReader EID tag read range should be tested to ensure the animals passing through the animal handler are accurately and reliably identified.

The SmartReader generates a balloon shaped read range (see diagram next page), within which EID tags are read reliably. The size of the read range for individual installations should be the width of the animal handler.

The SmartReader EID tag read range for a particular installation is tested using the built in set up mode in the SmartReader. This set up mode changes how often the SmartReader beeps to confirm a tag read from "only on first read" to "every read". This enables you to easily test the SmartReader EID tag read range using the same tag.

The following section describes how to complete an initial test on the SmartReader EID tag read range for your SmartReader installation. For more advanced testing, see *Advanced EID tag read range testing* (p 10).
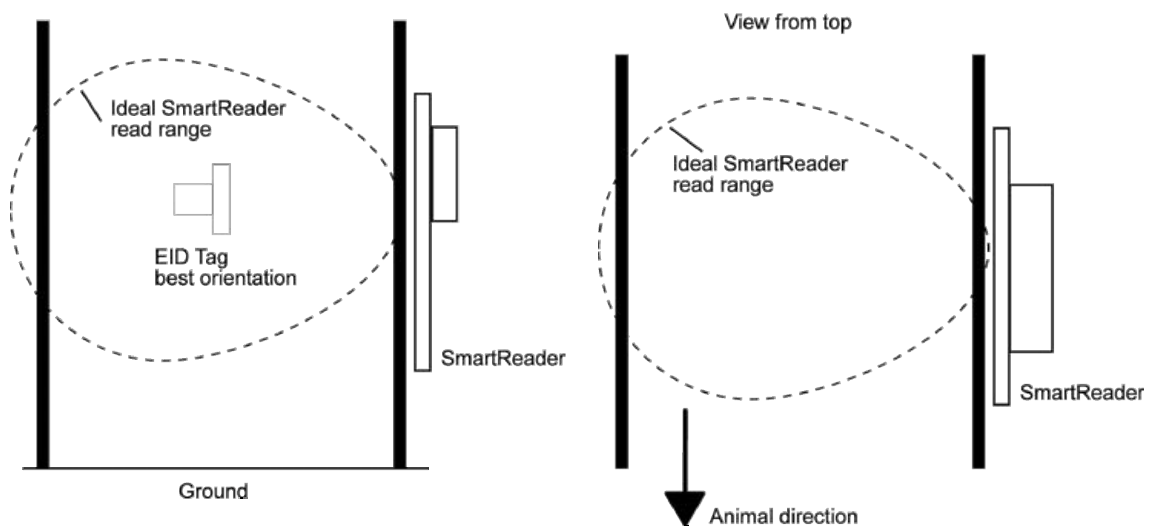
Testing the read range

For your SmartReader installation you need to determine the size of the EID tag read range. If the read range is too small you need to take steps to improve it.

You need to test the appropriate type of EID tag you will be using, either HDX (Half duplex) and/or FDX (Full duplex).

To determine the size of your installation's SmartReader EID tag read range, complete the following steps:

1. Turn on the SmartReader.

2. Ensure the SmartReader is in set up mode by holding an EID tag in front of the SmartReader or by pressing the volume button.

    – If the SmartReader beeps continuously it is in set up mode.

    – If the SmartReader beeps once it is in operational mode.

3. Hold the EID tag in the best orientation in the animal handler near the SmartReader Antenna Panel.
    The SmartReader should **beep** indicating it is reading the EID tag.

4.   Move the EID tag around to determine the size of the read range.

5. Is the read range indicated by the EID tag reads close to the ideal?

    – If yes, then test with live animals by passing a small group of animals through the animal handler and reading their Electronic ID tags.

    – If no, see *Investigating SmartReader read range issues* (p 9).

Investigating SmartReader read range issues

If the EID tag read range on your SmartReader installation is not adequate, check the following:

• The SmartReader is turned on and connected to the Antenna Panel.

• The EID tag is functional and is in the correct orientation for testing.

Re-test the read range by passing a small group of animals through the animal handler and reading their Electronic ID tags. If the SmartReader read range is

still not adequate, complete the advanced testing and contact your Gallagher representative, see *Advanced Electronic ID tag read range testing* (p 10).

Advanced Electronic ID tag read range testing

If an adequate EID Tag read range is not achieved during the initial testing, use the following advanced testing procedures.

Install the Configurator software utility prior to starting the advanced Electronic ID tag read range testing.

The Configurator software utility is automatically installed with the MyScale Pro software.

You will need the following items at the animal handler:

- A Laptop computer with either a serial (DB9) or USB port

- A Serial cable (supplied)

- The Serial to USB cable - if using the USB port (supplied).

Connect the SmartReader to a computer

For more information about the Configurator, see *Configurator* (p 2). The Configurator software is automatically installed with the MyScale Pro software.

Procedure

1. Using the supplied serial cable, connect the computer and the SmartReader.

   a) Connect one end of the serial cable into a COM port on your computer.

      If required, use the supplied DB9 to USB adapter to connect to the USB port on the computer.

   b) Connect the other end into the COM port on the SmartReader.

2. Turn on the power to the reader.

Open Configurator software

1. Open the Configurator software.

   – Double-click on the Configurator icon on the desktop.

   OR

   a) Click on the Windows **Start** button.

   b) Select **All Programs** or **Programs**.

   c) Select **MyScale**.

   d) Click on **SmartReader Configurator**.

2. The Configurator application will start and should automatically detect the presence of a reader. On the EID Reader Setup window, click on the **Advanced** button.

   Note: If the reader does not connect, select the appropriate COM port.

3. Click   Connect .

   The current settings for the connected SmartReader are displayed on the screen.
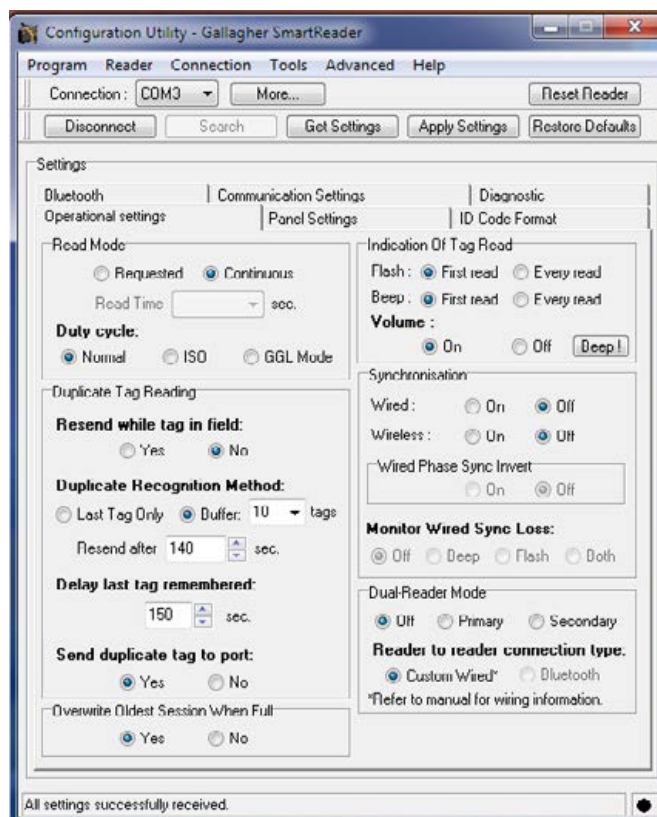
   Note: Once you have finished using the Configurator ensure you click on the disconnect button in the Configurator program prior to unplugging the cable. This ensures the data transmission returns to the correct state.

Start the Diagnostics Wizard

1. Connect the SmartReader to a computer. Refer to *Connect the SmartReader to a computer* (p 10).

2. Open the Configurator software. Refer to *Open Configurator software* (p 11).

3. Click on the Diagnostic tab. The following window displays:
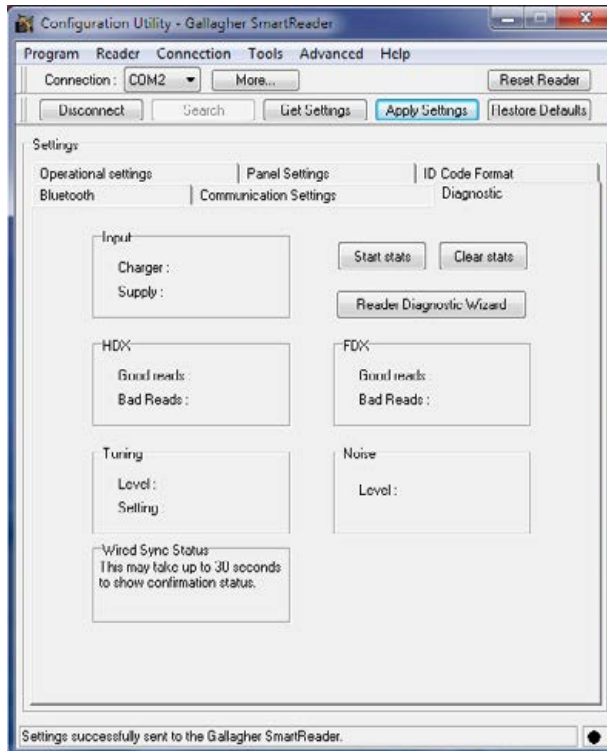
4. Click Reader Diagnostic Wizard . The following window displays:
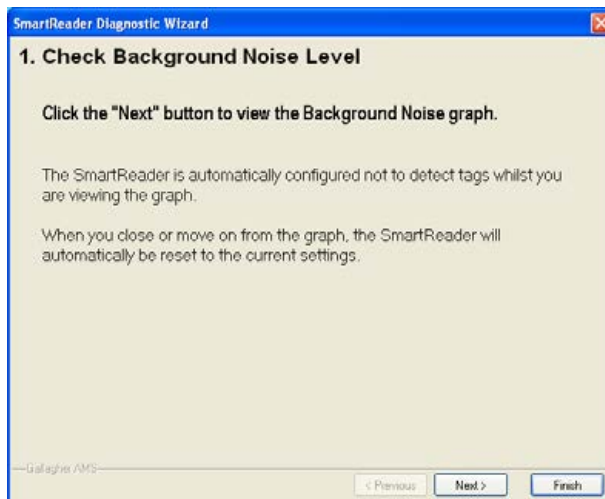
Assessing background noise

With this window displayed, SmartReader "hears" background electrical noise like that generated by computers, mobile phones, and electrical generators for example, in the frequency band that the Electronic ID tags work in. This background noise can interfere with the reading of the Electronic ID tags.

1. Press [Next >]. The following window is displayed:
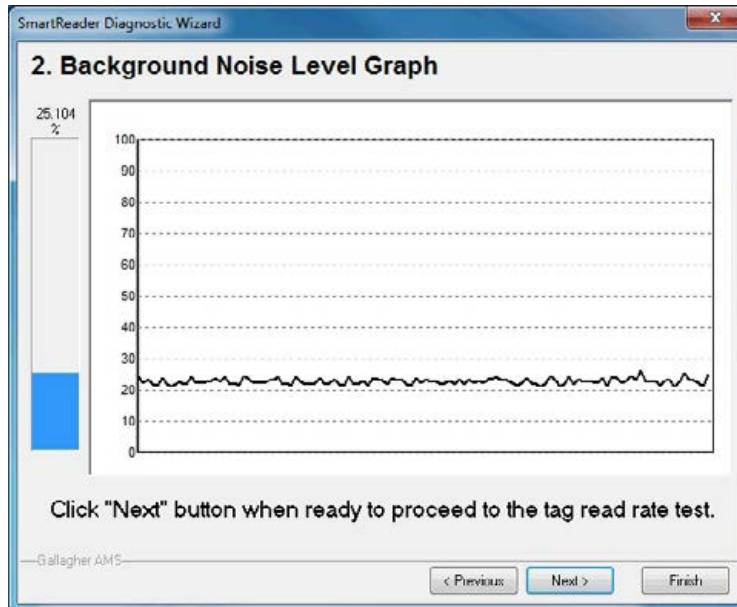
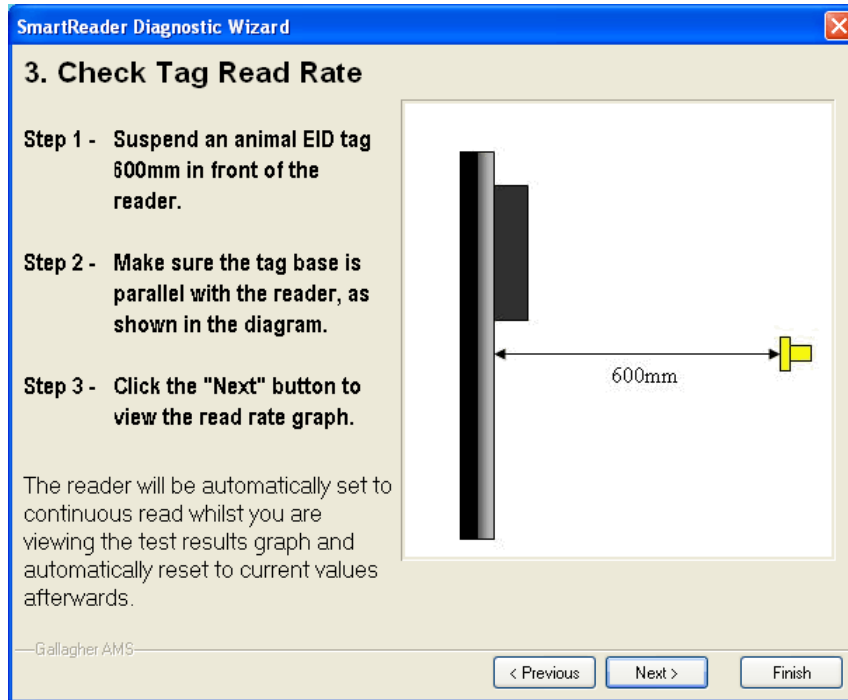**Note:** While this window is displayed, the SmartReader will not read Electronic ID tags.

The horizontal scale shows approximately 10 seconds viewing of the background noise.

The vertical scale shows the level of background noise. The higher up the scale the more background noise and the more likely the tag read range will be reduced.

2. If the background noise level is high, try turning off sources of electrical noise and re-test.

Test read range

1. Press [Next >]. The following window is displayed:

2. Follow the window instructions to test the EID tag read range in your animal handler.

3. Click [Next >]. The following window is displayed:
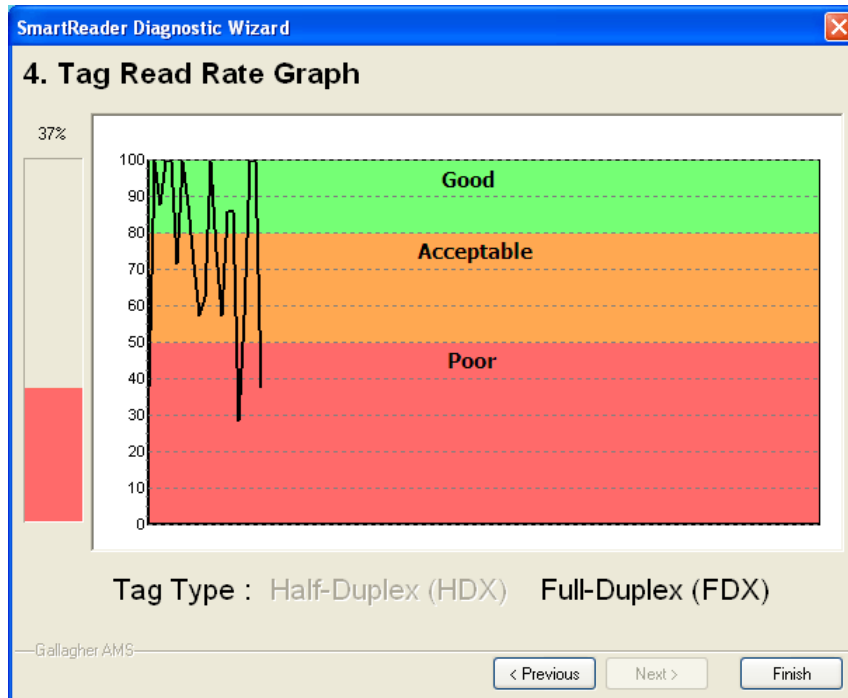
Note: While this window is displayed the SmartReader is automatically set to continuously read.

The type of tag being read is shown at the bottom of the window.

4.   Alter the mounting location of the Antenna Panel with the aim of improving the read range.

See *Mounting the Antenna Panel* (p 4).

Note: Once you have finished using the Configurator ensure you click on the disconnect button in the Configurator program prior to unplugging the cable. This ensures the data transmission returns to the correct state.

Testing with live animals

1.   Pass a small group of animals through the animal handler.

2.   Did the SmartReader read all the tags?

   −   If yes, the SmartReader is operational.

   −   If no, contact your Gallagher representative for further information.

INSTALLING MULTIPLE SMARTREADERS

When multiple SmartReaders are installed in close proximity, additional set up is required to ensure all Electronic ID tags are read correctly.

Each SmartReader must be able to communicate with all other SmartReaders to enable the antenna panel to be switched on and off at the appropriate times to ensure both Electronic ID tags can be read. For additional information about tags, see *Electronic ID tags* (p 2).

- If you have two SmartReaders to install you may use either wired or wireless installation. The wired option is the preferred option for the greatest reliability.

- If you have more than two SmartReaders you must use wired installation.

Wireless installation

Note: This option is applicable if you are installing two SmartReaders.

Once you have installed both SmartReaders, you need to change the following settings in the SmartReader via the Configurator program on your computer.

Procedure

1. Connect the SmartReader to a computer. Refer to *Connect the Electronic Controller to a computer* (p 10).

2. Open the Configurator software. Refer to *Open Configurator software* (p 11).

3. Click [Get Settings].

   The SmartReader current settings are transferred to the Configurator and displayed.

4. Set the **Synchronisation - Wireless** option to **On**.

5. Click [Apply Settings] to copy the changes down to the SmartReader.

6. Repeat for the second SmartReader.

Wired installation

- Applicable if you are installing more than two SmartReaders.
- Applicable for two SmartReader installations where greater reliability is required and it is practical to run the required cables.

Once you have installed the SmartReaders, you need to change the following settings in the SmartReader via the Configurator program on your computer.
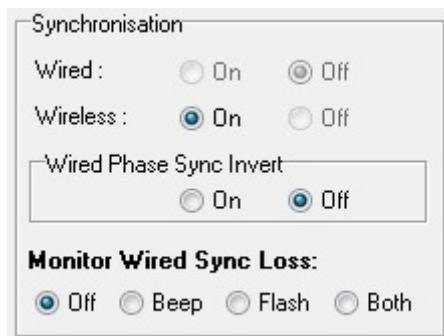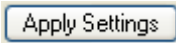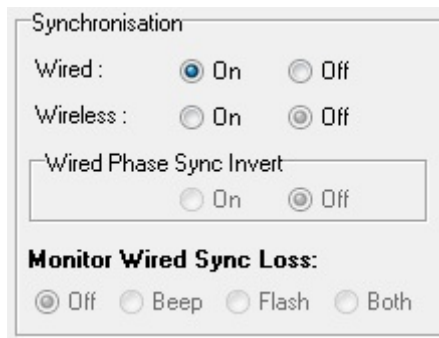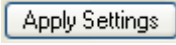
Procedure

1. Connect the SmartReader to a computer. See *Connect the SmartReader to a computer* (p 10).

2. Open the Configurator software. See *Open Configurator software* (p 11).

3. Click [Get Settings].

   The SmartReader current settings are transferred to the Configurator and displayed.

4. Set the **Synchronisation - Wired** option to **On**.

5. Click [Apply Settings] to copy the changes down to the SmartReader.

6. Repeat for all other SmartReaders.

Cabling requirements for connecting SmartReaders

During the wired installation you need to connect all SmartReaders together using the following connectors:
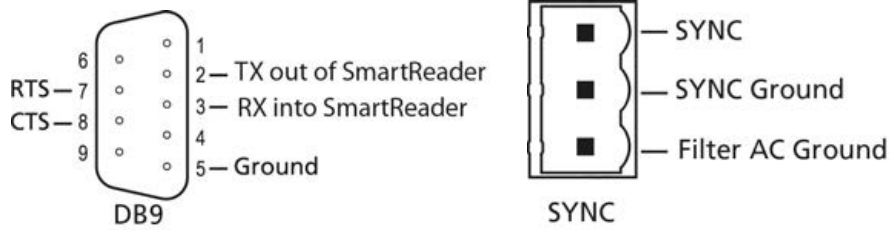
The sync cabling **is not** supplied by Gallagher - you are expected to have a custom cable made to suit the individual installation.
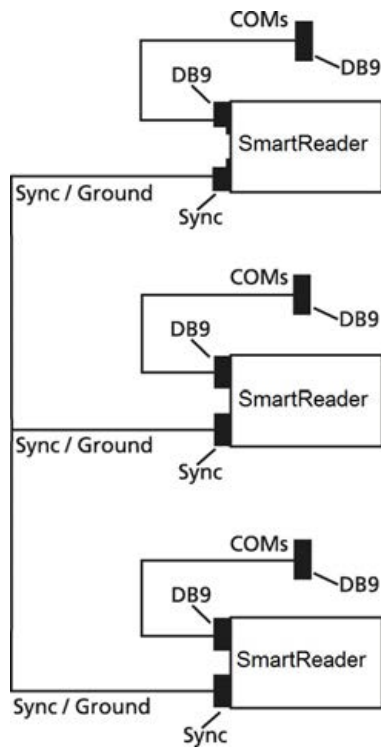
The COM connectors enable you to alter the settings of each SmartReader.

Create one for every SmartReader you have. This enables you to easily set up and communicate with all SmartReaders.

Dual-Reader Mode

This option enables increased Electronic ID reading performance, using two panel readers, which can be connected to operate in tandem as a Dual-Reader. If you are unable to get a consistent 100% read of animals in a race, then the Dual-Reader option may deliver the required performance.

Positioning two panel readers opposite each other on either side of a race, enables them to be operated as if they were a single reader with a larger read range. This provides a solution that works across races up to 1.2 metres wide. However, it is important the animals move through the race in single file to avoid a missed read.

The readers are installed as a master (primary reader) and slave (secondary reader). Once you have installed both SmartReaders you will need to change the settings in each SmartReader via the Configurator program on your computer.

Note: To use the Dual-Reader mode, you will need vSR1.09//b03 of reader software and v2.12.0.15 of SmartReader Configurator software, or higher versions.

Procedure

1. Connect the SmartReaders to a data collection device. (PC, TSi, SmartScale)
    − For a wired connection between the readers, refer to *Dual-Reader Wired Installation* (p 20).
    − For a Bluetooth connection between the readers, refer to *Dual-Reader Wireless Installation* (p 22).

2. Turn the **Primary** SmartReader on.

3. If the Dual-Readers are connected to a PC/laptop, open the Configurator software. See *Open Configurator software* (p 11).

4. The Dual-Reader mode is set to the default, **OFF**.

    Select **Primary** to set up the master SmartReader and then select **Custom Wired** or **Bluetooth**.
    The **Synchronisation** settings default, depending on your selection.

5. Click [Apply Settings] . The settings are transferred to the SmartReader.

6. Click [Disconnect] .

7. Unplug the first SmartReader (master) and connect to the other SmartReader (slave). Repeat from Step 2, to Step 7 to set up the **Secondary** SmartReader.

    Refer to the *Configurator Online Help: Operational Settings - Dual-reader mode*, to set up the Operational Settings screen for the Primary and Secondary SmartReaders.

Dual-Reader wired installation

This section shows how to connect a master and slave SmartReader using a custom serial cable, and how to establish a connection between the SmartReaders and the data collection device. (PC, SmartTSi, Weighscale)

Note: You will need a simple custom serial cable in a "Y" configuration. This cable is not supplied by Gallagher - you are expected to have a custom cable made to suit your individual installation.

Procedure

1. Plug the supplied reader to RS-232 cable into the serial port on your data collection device.

2. Plug the other end into the Female plug on the custom serial cable.

3. Plug the Male plugs of the custom serial cable into the master and slave SmartReaders.

    Note: If your computer does not have a serial port, use the supplied RS-232 to USB adaptor to connect to a USB port on the computer.

4. Return to Step 2. of Dual-Reader Mode to complete the installation process for Dual-Readers.

Custom Cable

The master reader has two two cables entering the single male DB9 serial connector.

*   One cable carries the Incoming Secondary Tag Data (pin 3) and Ground (pin 5). This cable crosses pin 3 to pin 2 between the master and slave readers and terminates with a Male DB9 connector suitable for connecting to the slave reader.

*   The other cable carries the Outgoing Primary Tag Data (pin 2) and Ground (pin 5). This cable goes from the master reader to terminate with a Female DB9 connector, suitable for connecting to the data collection device (SmartTSi, Weighscale or PC)

The following diagram shows the Dual-Reader Wired configuration:
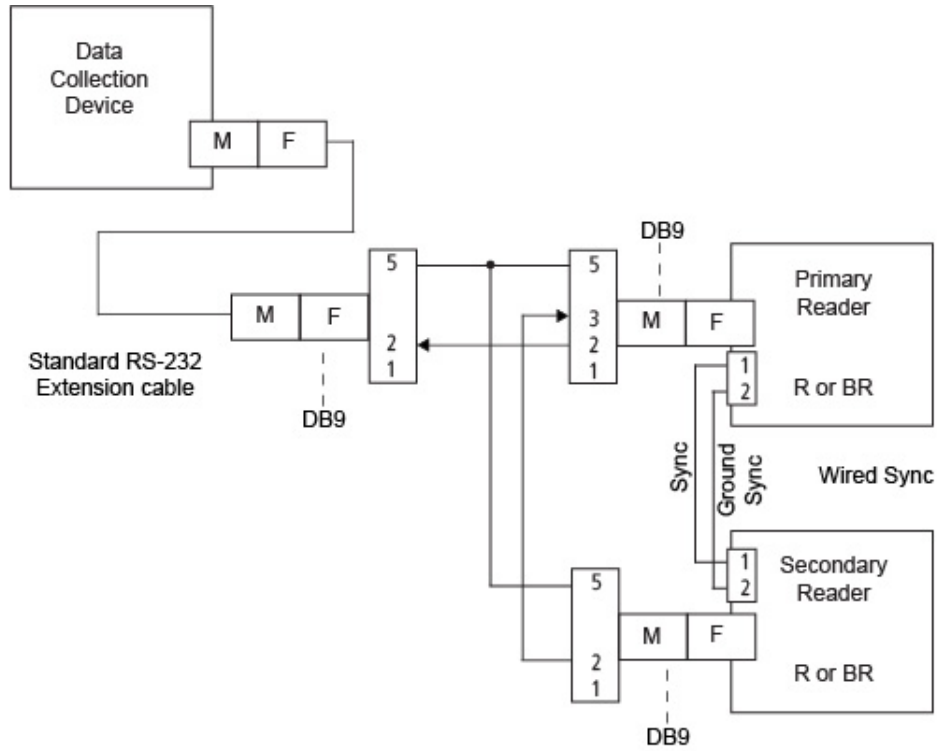
- Wired sync is achieved by a separate cable as outlined in *Cabling requirements for connecting SmartReaders*.

Dual-Reader wireless installation

This section describes how to connect a master and slave SmartReader using the Bluetooth module, and how to establish a connection between the SmartReaders and the data collection device. (PC, SmartTSi, Weighscale)

Note: A standard serial cable will be required for this configuration, so the Primary tag data (tags read at both master and slave readers) can be transported to the data collection device.

1. Plug the supplied reader to RS-232 cable into the serial port on your data collection device.

2. Plug the other end into the master SmartReader.

   Note: If your computer does not have a serial port, use the supplied RS-232 to USB adaptor to connect to a USB port on the computer.

3. Return to Step 2. of Dual-Reader Mode to complete the installation process.

Wireless

When Wireless Sync is used, there is no need for custom cables. Master mode Bluetooth reader firmware (vSR1.08 or later) is needed to allow the slave reader tag data to be communicated over Bluetooth to the master reader. It does not matter which reader is set up as Bluetooth master or slave, so long as the Bluetooth link establishes itself automatically when the two readers are powered up, and the tag data can be communicated.

The following diagram shows the Dual-Reader Wireless configuration:
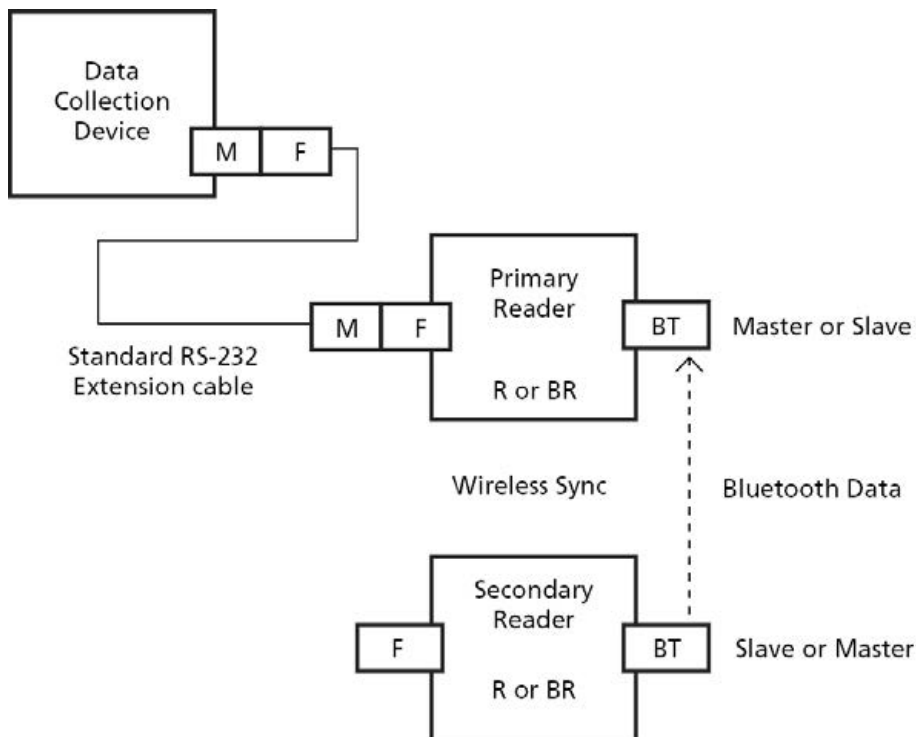
ACCESSORIES

4 Metre Antenna Extension Cable Kit

The 4 Metre Antenna Extension Cable Kit contains:

- 1 x Extension cable (4m)
- 1 x Mounting bracket
- 2 x Metal TEK screws

Mounting the extension kit to the SmartReader

Mount the Antenna Panel as per *Mounting the Antenna Panel* (p 4).

Considerations

- The Extension cable is part of the Antenna Panel circuit so keep away from large metal surfaces.
- Ensure the SmartReader mounting location provides protection from being knocked or damaged by animals.
- Ensure the Extension cable is run so it can not be damaged or tripped over.
- Protect the Extension cable from damage from the environment, animals, people or weather. Avoid mounting the Extension cable in wet areas.
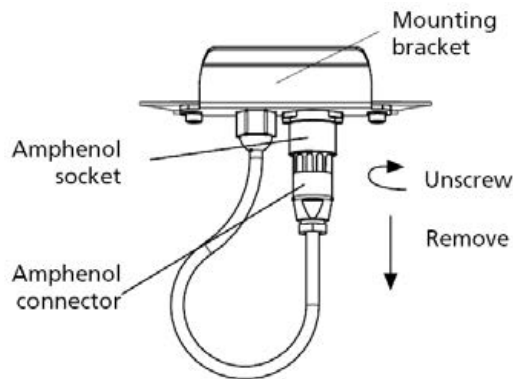- The extension cable length is 4 m.

Procedure

1. Determine the location of the SmartReader based on the above considerations.

2. Using the supplied metal tek screws attach the mounting bracket to a solid mounting location using at least two of the holes in the mounting bracket.

   The two sets of two holes allows for installation on horizontal or vertical pipe work.
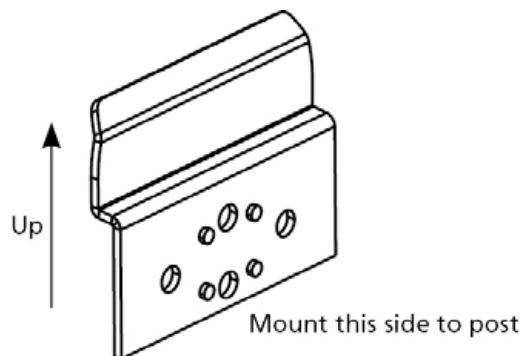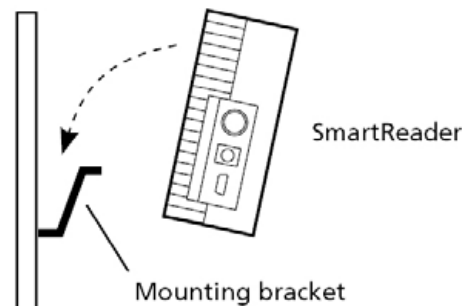

3. Run the Extension cable from the SmartReader to the Antenna Panel along the proposed path and temporarily fasten the cable in place.

4. Ensure the SmartReader is turned off.

5.   On the Antenna Panel, unscrew the Amphenol connector locking nut from the Amphenol socket and pull it down to unplug from the Antenna Panel.

6.   Connect the Extension cable to the Amphenol connector and tighten.

7.   Mount the SmartReader on the mounting bracket by grasping the SmartReader on both sides and slide the back handle onto the mounting bracket.

8.   Connect the Extension cable to the Amphenol socket on the side of the SmartReader and tighten the locking nut.
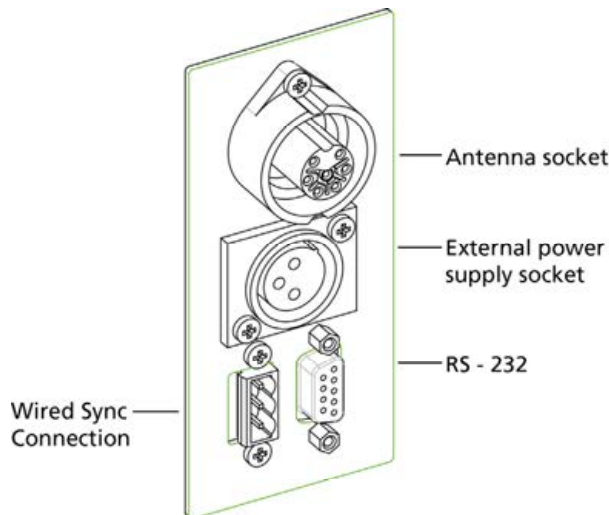
9.   Once the Extension cable location is finalised, attach the cable permanently using cable ties. The SmartReader is now ready to use.

BLUETOOTH

Overview

The SmartReader (BR and R series) come with Bluetooth installed, for communications between the SmartReader and a Scale, or a SmartReader and a computer.

For communications between a SmartReader and a computer, a Bluetooth USB adaptor will need to be purchased if the computer is not already Bluetooth enabled. In addition, the computer will need to be running Windows XP or later.

Bluetooth RS-232 Adaptor

Compatibility

This Bluetooth device should work with Scales that have power to pin 9 on the serial port.

In this configuration a power supply is not required and is not supplied with the RS-232 adaptor. Power is expected to be provided from pin 9 of the RS-232 port to the adaptor from the Scale.

When the RS-232 Bluetooth adaptor is powered from the Scale, the slide switch on the side should be set to the **PoRI position** (sometimes represented by this symbol: 🖳).

Setting up the Bluetooth RS-232 Adaptor

1. Plug the RS-232 adaptor into the serial port on the side of the Scale using the small serial cable that comes with the adaptor.

2. Power up and configure the Scale to receive data on that serial port.

   For a Gallagher Smartscale this would be in the Setup menu under Communications, set the relevant port to "EID Standard".

3. Check that the power light on the adaptor has illuminated.

4. Turn on the reader. Once powered up, the Bluetooth should connect automatically an d can be confirmed by a blue LED on the RS232 adaptor.

5. Tag data will automatically be sent to the Scale.

   Notes:
   – The wireless connection should be effective to a range of at least ten metres.
   – The "Power" LED illuminates when power is supplied to the adaptor.
   – The Bluetooth light flashes when a wireless connection is active.
   – The "Mode" LED (middle LED) only illuminates during configuration.

Pairing the RS-232 Adaptor with your reader

The RS-232 Adaptor must be **paired** with your individual SmartReader, i.e. the adaptor must be uniquely identified by your reader.

This is achieved by assigning your SmartReader "MAC address" to the adaptor. Other Bluetooth devices (including other readers working in the immediate area) will then be of no concern to your operation.

The pairing process must be carried out by your Gallagher distributor. If you have received the Bluetooth adaptor with your reader, the pairing should already be in effect. If not, take your reader and your adaptor to your nearest distributor for pairing.

Bluetooth USB Adaptor

Introduction

A Bluetooth USB adaptor is available from your Gallagher distributor to allow a Bluetooth enabled SmartReader to communicate with a computer.

This section describes how to install a Bluetooth USB adaptor to a USB port, to enable your computer to make a wireless communication with any Bluetooth device, including a Gallagher SmartReader.

The wireless connection can be used to download tag numbers to MyScale Pro or to configure the reader with the software supplied on the MyScale Pro CD.

Many modern computers are manufactured "Bluetooth enabled" and this accessory is not required for those models.

Compatibility

The Computer must be running the Windows XP operating system and have one available USB port.
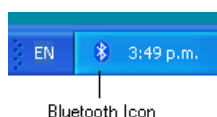
MyScale Pro Version 2.5.1 or later must be installed on the computer.

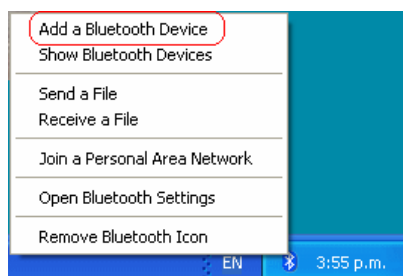## Installing and connecting the USB Adaptor

1. Insert the adaptor into the USB port. This will be detected automatically.

2. After a period of configuration the Bluetooth icon will appear in the taskbar notification area.
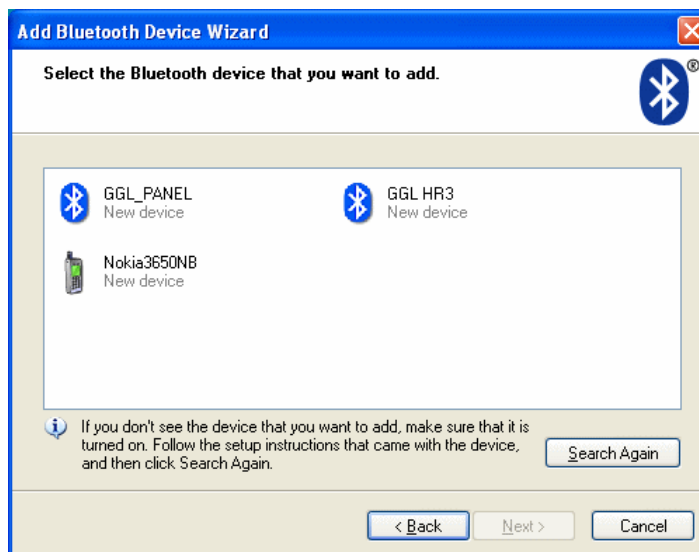

3. Click on the Bluetooth icon. The following menu will be displayed:

4. Select the **Add a Bluetooth Device** option. This opens the Bluetooth Wizard.

5. Populate the **My device is set up and ready to be found** check box.

6. Turn on your SmartReader. A panel reader will constantly scan for a connecting computer.

7. Click **Next** on the Wizard. The following window will be displayed:

8. Double click on . The following window will be displayed:
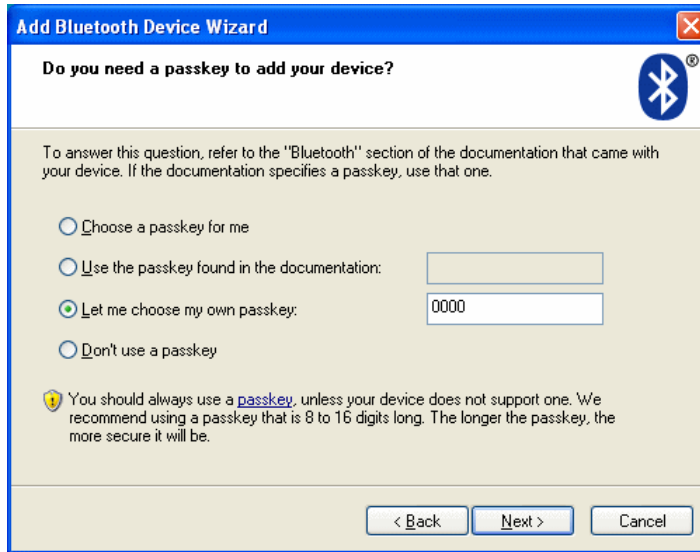
9. Select **Let me choose my own passkey**. Enter 0000 (four zeroes) and click **Next**.

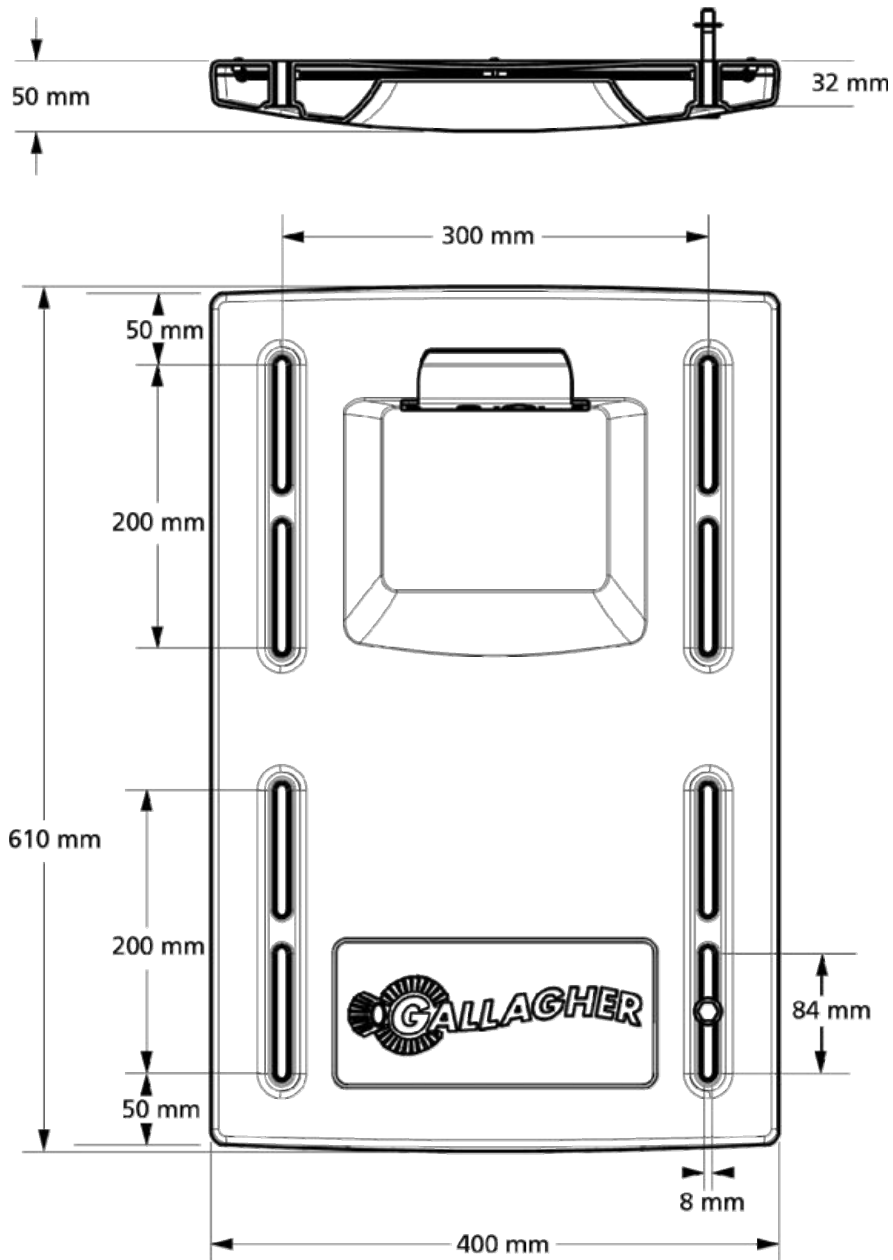10. Passkeys will be exchanged and the wizard completes.

11. Click on **Finish**.

    Note: The Bluetooth connection should be effective to a range of at least ten metres.

SPECIFICATIONS

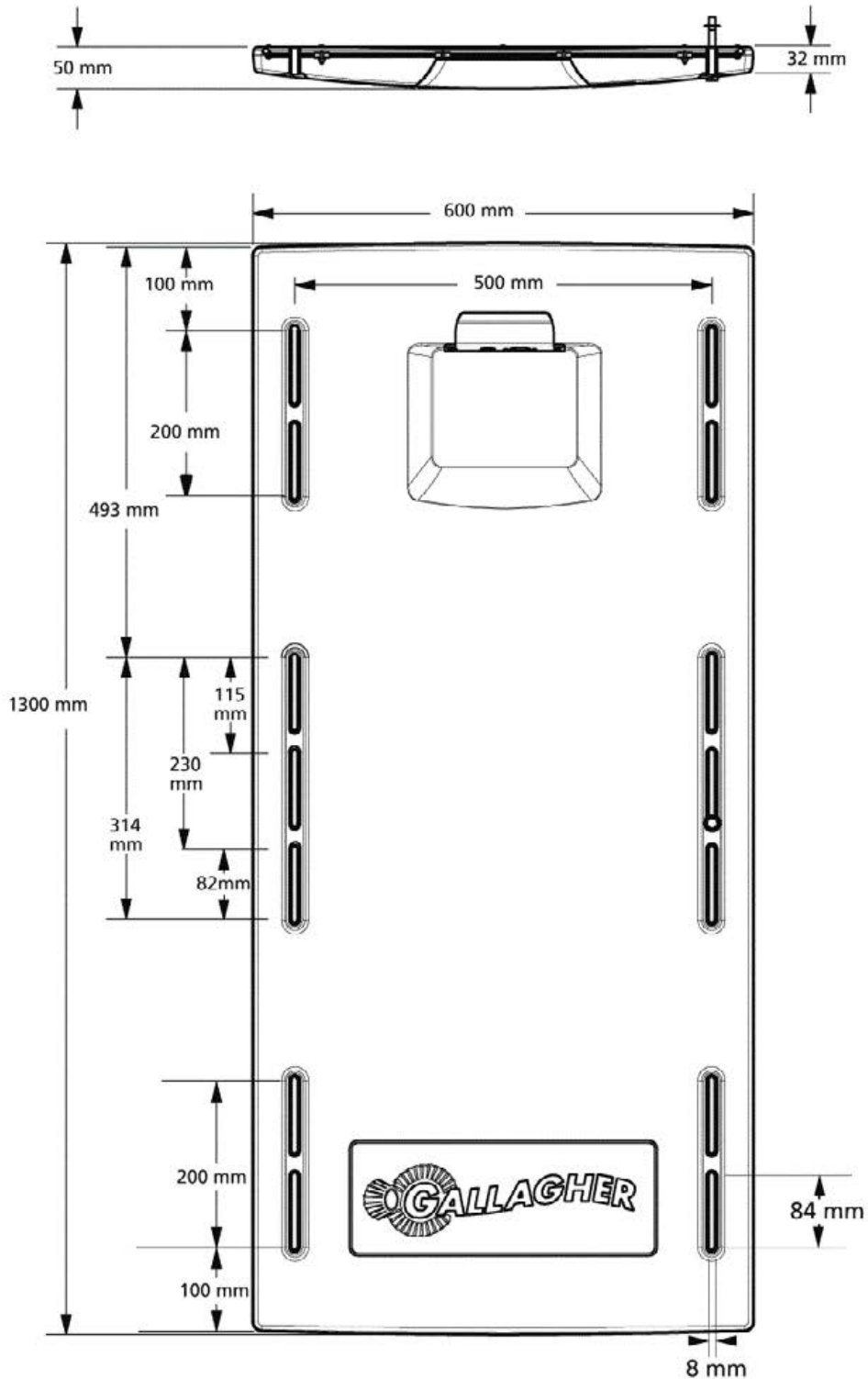## Small Antenna Panel

Small Antenna Panel   3 kg

Dimensions (w x h x d)   400 x 600 x 50 mm

Large Antenna Panel

Large Antenna Panel   7.3 kg

Dimensions (w x h x d)   600 x 1300 x 50 mm

SmartReader

Weight R Series   1.5 kg

Dimensions (w x h x d)   300 x 220 x 100 mm (approx)
                            The front and back are slightly curved out.

Model   G03113

Power Requirements

Battery   12 V

Power Supply   13.8 V DC low noise supply

Input voltage   Nominal 13.8 V DC, Maximum 15 V DC

Battery or Power supply can be plugged
into the Gallagher R Series SmartReader.

The SmartReader power connector:
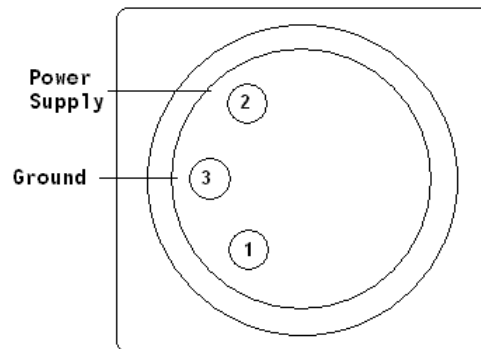
Standards

IP (Ingress Protection) Rating:	IP66
Operating temperature range:	-10 to +55 °C
Storage temperature range:	-40 to +85 °C

C-Tick approval	New Zealand & Australia
CE Mark	EN 300 330-2, EN 301 489-3

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 harmful 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.
	Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.
	This radio transmitter (IC: 7369A-G03113X) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.
	Antenna Types:

	- BR600 Small Antenna Panel (G03121)
	- BR1300 Large Antenna Panel (G031424)
	- Sheep Auto Drafter Antenna Panel (G05714)

Waste Electrical and Electronic Equipment

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.