

**RADIODETECTION®** 

# **RD5100™ S**

Precision sonde locator

Operation manual

90/5100S-OPMAN-ENG/01

## Table of Contents

<b>Section 1 Preface</b> .....	<b>2</b>
1.2 Important notices .....	2
1.3 Safety .....	3
1.4 Training .....	3
<b>Section 2 Introduction</b> .....	<b>4</b>
2.1 About this manual .....	4
2.2 Manual outline .....	4
2.3 About the RD5100S .....	4
<b>Section 3 System overview</b> .....	<b>5</b>
3.1 RD5100S locator .....	5
<b>Section 4 Operation</b> .....	<b>7</b>
4.1 Getting Started .....	7
4.2 Power on / off .....	8
4.3 Keypad actions & shortcuts .....	8
4.4 Backlight .....	9
4.5 Dynamic Overload Protection™ .....	9
4.6 Antenna modes .....	9
4.7 Compass .....	10
<b>Section 5 Locating Sondes</b> .....	<b>10</b>
5.1 Sondes .....	10
D 12	
5.2 epth Measurements .....	12
5.3 Verifying depth measurements .....	12
<b>Section 6 RD5100 Manager</b> .....	<b>12</b>
6.1 About RD5100 Manager™ .....	12
6.2 Warranty and extended warranty .....	13
6.3 Upgrading software .....	13
6.4 eCert™ .....	13
<b>Section 7 Using accessories</b> .....	<b>14</b>
7.1 About accessories .....	14
7.2 Headphones .....	14
<b>Section 8 Appendices</b> .....	<b>14</b>
8.1 Care and maintenance .....	14
8.2 Compliance .....	15
8.3 Intellectual property .....	15
8.4 List of supported accessories .....	16
8.5 RD5100S Package part numbers .....	17

# Section 1 Preface

## 1.1 Before you begin

Thank you for your interest in Radiodetection's RD5100™S cable and pipe locator.

Please read this user manual in its entirety before attempting to use the RD5100S system as it contains many important safety notices and warnings.

Radiodetection products, including this manual, are under continuous development. The information contained within is accurate at the time of publication; however the RD5100S, this manual and all its contents are subject to change.

Radiodetection Limited reserves the right to modify the product without notice and some product changes may have taken place after this user manual was published.

Contact your local Radiodetection dealer or visit [www.radiodetection.com](http://www.radiodetection.com) for the latest information about the RD5100 product family, including this manual.

## 1.2 Important notices

### General

The performance of any cable and pipe locator may be affected when used in close proximity to ferrous materials such as manhole covers, steel-toe boots, mobile phones and nearby vehicles. Keep a distance of 1 or 2 m from these objects when taking critical measurements such as depth and current readings.

This instrument, or family of instruments, will not be permanently damaged by reasonable electrostatic discharge and has been tested in accordance with IEC 801-2. However, in extreme cases temporary malfunction may occur. If this happens, switch off, wait and switch on again. If the instrument still malfunctions, disconnect the batteries for a few seconds.

### Safety

**⚠ WARNING: Failure to comply with safety warnings can cause serious injury or death.**

**CAUTION: Failure to comply with safety cautions can result in damage to equipment or property.**

This equipment shall be used only by qualified and trained personnel, and only after fully reading this Operation Manual.

**⚠ WARNING: Direct connection to live conductors is POTENTIALLY LETHAL. Direct connections to live conductors should be attempted by fully qualified**

**personnel only using the relevant products that allow connections to energized lines.**

**⚠ WARNING: Reduce audio level before using headphones to avoid damaging your hearing.**

**⚠ WARNING: This equipment is NOT approved for use in areas where hazardous gases may be present.**

**⚠ WARNING: The RD5100S locator will detect most buried conductors but there are some objects, including live objects, which do not radiate any detectable signal. The RD5100S, or any other electromagnetic locator, cannot detect these objects so proceed with caution. There are also some live cables which the RD5100S will not be able to detect in Power mode. The RD5100S does not indicate whether a signal is from a single cable or from several in close proximity.**

**CAUTION: The battery cover, the accessory cover and the headphone cover protect the locator's sockets from debris and water ingress. If they get damaged or lost, contact Radiodetection or your local service representative for a replacement one.**

### Batteries

**⚠ WARNING: Batteries can get hot after prolonged use at full output power. Take care while replacing or handling batteries.**

**⚠ WARNING: Do not tamper with, or attempt to disassemble the battery packs.**

**CAUTION: If battery failure is suspected return the entire unit to an authorized repair center for investigation and repair. Local, national or IATA transport regulations may restrict the shipment of faulty batteries. Check with your courier for restrictions and best practice guidelines. Your local Radiodetection representative will be able to direct you to our authorized repair centers.**

**⚠ WARNING: Exposing the battery to a high temperature above 60°C (140°F) may activate safety systems and cause a permanent battery failure.**

### Disposal



This symbol on the product, accessories or literature indicates that the product and its electronic accessories (for example, charger, headset and USB cable) must not be treated as domestic waste, but must be disposed of professionally. 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 to 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 office, your disposal service or product supplier.

Please dispose of this device in a manner appropriate to the relevant legal requirements at the end of its product life.

Batteries should be disposed of in accordance with your company's work practice, and / or the relevant laws or guidelines in your country or municipality.

### 1.3 Safety

Read this manual in its entirety before attempting to operate the RD5100S locator. Note all safety notices in the preface and throughout this manual.

You are responsible for determining whether the conditions are suitable for using this device. Always carry out a risk assessment of the site to be inspected.

Follow your company and national safety procedures and or requirements when operating this equipment in any environment or workplace. If you are unsure what policies or procedures apply, contact your company or site's occupational health and safety officer or your local government for more information.

Do not use this equipment if you suspect that any component or accessory is damaged or faulty.

Before inserting the earth stake into the ground, ensure there are no shallow cables or services that could be damaged by the earth stake.

Use authorized accessories only. Incompatible accessories may damage the equipment or give inaccurate readings.

If you intend to uncover a sub-surface utility by digging, you must follow your company, region and country's codes of practice for excavation.

Keep this equipment clean and arrange for regular services with an authorized Radiodetection service center. More information can be found in the Appendix or from your local Radiodetection representative.

It is important to regularly clean and sanitize products which may become contaminated through contact with foul water or other contaminants.

Headphone use: you need to remain alert to traffic and other hazards that are normally heard outdoors. Always turn the volume down before plugging headphones into an audio source and use only the minimum level, necessary to take your measurements. Excessive exposure to loud sounds can cause hearing damage.

Do not attempt to open or dismantle any part of this equipment unless directed specifically by this manual.

Doing so may render the equipment faulty and may void the manufacturer's warranty.

You are responsible for determining whether you consider the measurement results to be valid and for any conclusions that are reached or any measures that are taken as a result thereof. Radiodetection can neither guarantee the validity of any measuring results nor can we accept liability for any such results. We are on no account able to accept liability for any damage which may be caused as a consequence of the use of these results. Please see the Standard Warranty Terms enclosed with the product for further information.

### 1.4 Training

Radiodetection provides training services for most Radiodetection products. Our qualified instructors will train equipment operators or other personnel at your preferred location or at Radiodetection headquarters.

For more information go to [www.radiodetection.com](http://www.radiodetection.com) or contact your local Radiodetection representative.

## Section 2 Introduction

### 2.1 About this manual

This manual provides cable and pipe survey professionals with comprehensive operating instructions for the RD5100S locator system. Before operating the RD5100S system it is very important that you read this manual in its entirety, noting all safety warnings, cautions and procedures.

#### Additional documentation

The full product specification, RD5100 Manager and related manuals are available to download from [www.radiodetection.com](http://www.radiodetection.com).

### 2.2 Manual outline

Section 1 includes an overview of safety procedures and notices. Review them before moving on to rest of this manual.

Section 2 provides an introduction to the RD5100S.

Section 3 provides an overview of the RD5100S system with annotated diagrams of the locator.

Section 4 introduces basic setup and operation using the RD5100S locator.

Section 5 introduces the theory and practice of sonde location using the RD5100S locator.

Section 6 introduces RD5100 Manager and features.

Section 7 Introduces accessories.

Section 8 includes several appendices with reference material and other technical information.

### 2.3 About the RD5100S

The RD5100S locator is ergonomically designed to provide the operator with a balanced, light weight tool that encourages extended use in most environments.

This locator has been specifically designed for locating sondes and as such a wide range of sonde and flexible rod accessories are available.

For more information and a full list of Precision Locate Accessories Range, visit:

[www.radiodetection.com/accessories](http://www.radiodetection.com/accessories)

# Section 3 System overview

## 3.1 RD5100S locator



Figure 3.1 – RD5100S locator

## Locator features

- 1 Keypad
- 2 Liquid Crystal Display (LCD) with backlight.
- 3 Battery compartment (USB connector inside).
- 4 Accessory socket.
- 5 Headphone jack.
- 6 Speaker.

## Locator keypad

- 7 Power key : Switches the unit on and off. Toggles between Guidance Mode and Signal Strength Mode.
- 8 Up arrow key : Increase gain (in power and radio modes).
- 9 Down arrow key : Decrease gain (in power and radio modes).
- 10 Frequency key : Scroll through frequencies from low to high.
- 11 Backlight sensor: Provides automatic control of the LCD display backlight.

## Locator display icons

- 12 Battery icon: Indicates the battery level.
- 13 Signal strength bargraph with peak marker.
- 14 (Proportional) Left/Right arrows: Indicates the location of the target relative to the locator.
- 15 Signal strength readout.
- 16 Sensitivity readout.
- 17 Measured values: Frequency or current readout (mode dependent).
- 18 Compass: Displays the direction of the cable or pipe relative to the locator.
- 19 Antenna mode icon: Indicates mode selection (Guidance / Peak+).
- 20 Depth: Indication of depth reading.
- 21 Sonde icon: Indicates that a sonde signal source is selected.

# Section 4 Operation

## 4.1 Getting Started

### Power options

RD5100S systems are shipped as standard configured to use D cell alkaline batteries.

The locator can also be powered using good quality rechargeable D-cell NiMH batteries or the optional accessory Li-Ion rechargeable battery packs.

### Inserting batteries

#### On the Locator:

To fit the D-cell batteries in the locator, unlatch the battery compartment.

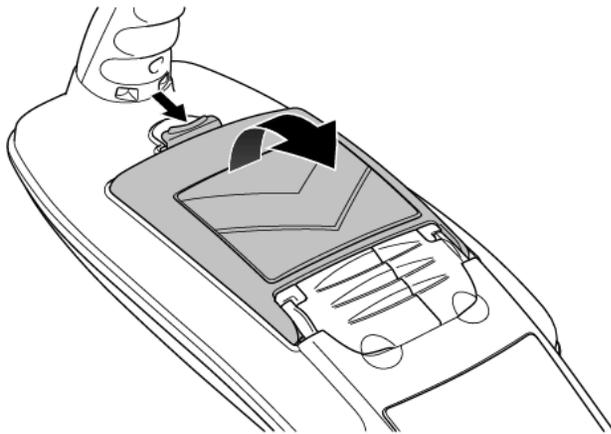


Figure 4.1: Open the battery compartment

Insert 2 x good quality D-cell batteries. Note the polarity of the cells when inserting them in the battery tray.

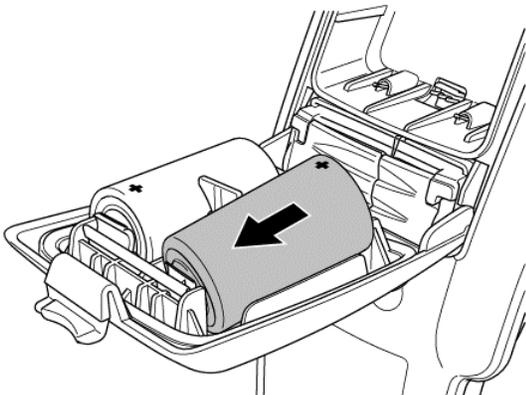


Figure 4.2: Inserting locator batteries

### Removing / fitting battery packs

#### Locator battery pack:

- 1 Open the battery compartment using the release catch (refer to Figure 4.1: Open the battery compartment).
- 2 If using a Li-Ion battery pack un-plug the lead connector (refer to Figure 4.6: Connecting the Li Ion lead).
- 3 Lift the accessory cover slightly and press the battery retaining latch inwards.

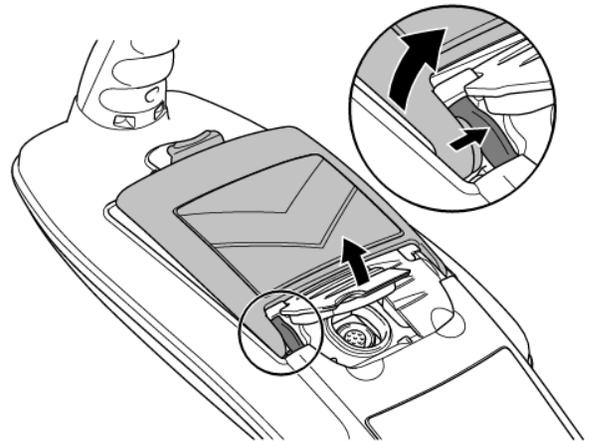


Figure 4.3: Press the retaining latch inwards

- 4 Rotate the battery pack away and up from the latch.
- 5 Repeat on the other side to release the battery pack completely then lift the battery pack away.

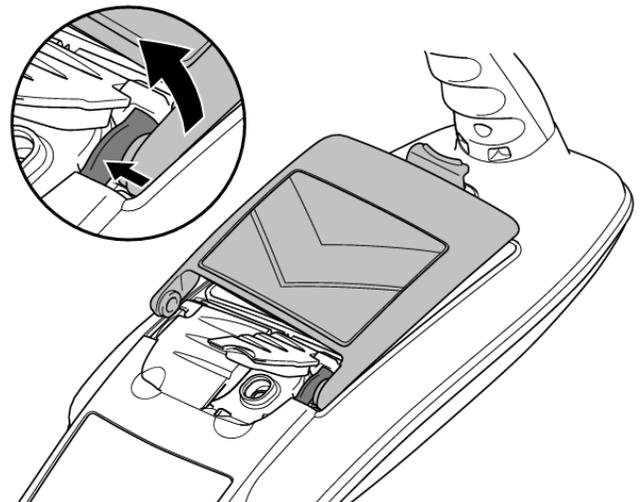


Figure 4.4: Repeat then lift the battery pack away

To fit a new battery, lift both accessory covers slightly, then gently push the replacement pack into place until it

clicks on both sides, then close the battery pack.

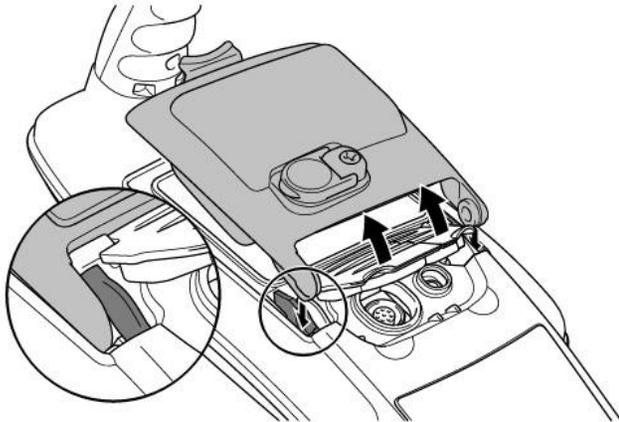


Figure 4.5: Installing a new battery pack

If using the Li-ion battery pack, plug the lead into the battery connector (refer to Figure 4.6: Connecting the Li Ion lead).

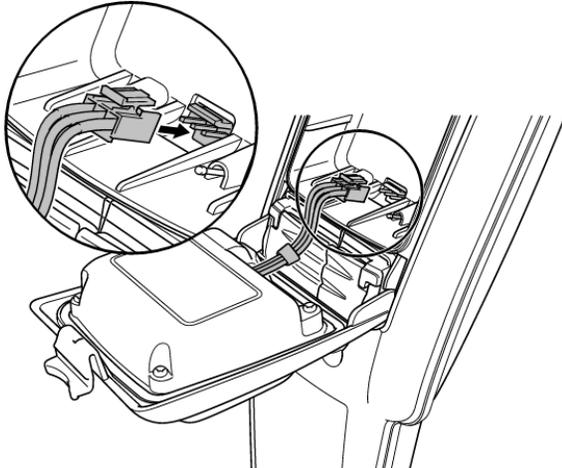


Figure 4.6: Connecting the Li Ion lead

NOTE: Fully charge your lithium-ion battery pack before its first use.

### Charging the lithium ion packs

**⚠ WARNING:** Do not heat the rechargeable battery pack above 60°C (140°F) as this will damage the battery's thermal fuses.

#### Locator Li-Ion battery pack

To recharge the locator battery pack, connect the battery charger to the DC input connector on the front of the battery pack.

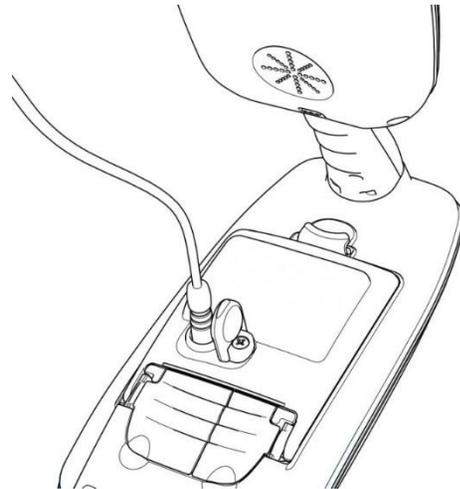


Figure 4.7 - Charging the locator Li-ion battery pack

## 4.2 Power on / off

Switch the locator on by pressing the  key.

To switch the locator off, press and hold the  key until the screen blanks off.

NOTE: The locator will automatically power off after 5 minutes if no keys are pressed.

## 4.3 Keypad actions & shortcuts

### Locator key actions

Key	Short press	Long press
	Switch power on	Switch power off
	Scroll through sonde frequencies from low to high	
 	Increase and decrease gain. RD5100S automatically sets gain to mid-point when pressed	Rapidly increase and decrease gain steps in 1dB increments

#### To select a sonde frequency on the locator:

- 1 Press the  key to cycle through available sonde frequencies.

## 4.4 Backlight

The locator features a backlight to improve LCD visibility when required. The locator's backlight is controlled by an ambient light sensor and does not require adjustment by the user.

## 4.5 Dynamic Overload Protection™

Dynamic Overload Protection™ (DOP) allows you to locate accurately in areas with high levels of electromagnetic interference, such as sub-stations and beneath high-voltage transmission lines. DOP works by disregarding signal spikes that would otherwise overwhelm the RD5100S locator's digital signal processor. DOP is an integrated feature of all RD5100S locators. No action is required by the user.

**NOTE:** In cases of high levels of electromagnetic interference, the DOP will not be able to prevent the RD5100S from becoming overloaded. If the RD5100S becomes overloaded, users will be alerted by a flashing mode icon. Depth measurements will be disabled in the event of an overload.

## Locator key actions

Table 4.1 - Locator key actions

Key	Short press	Long press
	Enter the menu	Switch power off
	Scroll through locate frequencies from low to high	-
	Increase and decrease gain. RD5100S automatically sets gain to mid-point when pressed	Rapidly increase and decrease gain steps in 1dB increments

## 4.6 Antenna modes

The RD5100S system supports up to two antenna modes, exclusively dedicated to locating sondes, and to suit your particular application or the local environment. These are:

- Peak+ Guide mode
- Guidance mode

To switch between antenna modes, press and hold the 'f' key until the antenna mode switches to the desired mode.

### Peak+™ Guide mode

Combines the accuracy of the Peak bargraph with left and right proportional guide arrows.

The left and right proportional guide arrows become shorter as the locator approaches the sonde, providing a quick visual indication of the direction to the sonde, and are designed to get you close to the Peak position faster, before using the Peak bargraph to pinpoint the sonde.

To use Peak+ Guide mode press and hold the 'f' key until  is displayed on the LCD. Use the proportional guide arrows to guide the locator along the path of the sonde, and to accurately locate the center point of the sonde use the Peak bargraph to pinpoint the Peak position.

In Peak+ Guide mode the following indicators are displayed:

- Proportional left and right arrows
- Signal bargraph
- Signal strength percentage
- Gain
- Compass
- Depth.



Figure 4.8: Locator in Peak+ Guide mode with 33 kHz standard sonde

## Guidance mode

Guidance mode offers good performance in distorted fields and provides three indicators to guide the user towards the sonde.

The left and right proportional guide arrows become shorter as the locator approaches the sonde, providing a quick visual indication of the direction to the sonde, and are designed to get you close to the Peak position faster, before using the target position indicator to pinpoint the sonde.

To use Guidance mode press and hold the 'f' key until



is displayed on the LCD. Use the proportional guide arrows to guide the locator along the path of the sonde, and to accurately locate the center point of the sonde use the target position indicator to pinpoint the peak position.

The Signal Strength reading will also reach its maximum value when the locator is positioned above the sonde.

Any deviation from all three indicators showing the sonde position in the same location could signal the presence of a distorted field.

In Guidance mode the following indicators are displayed:

- Proportional left and right arrows
- Target Position Needle
- Signal strength
- Gain
- Compass
- Depth.



Figure 4.9: Locator in Guidance mode with 33 kHz standard sonde

## 4.7 Compass

The LCD compass provides a visual indication of the direction of the target sonde and is available in all sonde frequencies and antenna modes.

# Section 5 Locating Sondes

## 5.1 Sondes

### Sonde overview

A sonde is a self-contained, battery-operated transmitter used for tracing the paths of pipes, ducts, sewers and drains and in the precise location of blockages or collapses. The sonde can be fitted to a flexible rod for insertion or pushing through pipes and the smaller diameter sondes can be used in conjunction with jetting machines, and blown through the duct.

### Choosing a suitable sonde

Radiodetection offers a wide range of sondes to suit most applications: From the 6 mm (1/4") diameter S6 33 kHz Microsonde which, with a range of 2 m (6.6'), targets fiber-optic micro ducting or other small non-conductive pipes, to the 33 kHz Super Sonde, which with a depth range of 15 m (50') targets deep sewer pipes.

Consult the precision locate accessory range brochure or web page on [www.radiodetection.com](http://www.radiodetection.com) for a full list of all available sondes and their technical specifications.

Check that the sonde has sufficient range for the application and is dimensionally small enough and sufficiently robust for the application. Ensure that the frequency of the sonde corresponds with the locator frequency; the locator will not locate the sonde unless the frequencies are the same. Ensure that the means of propelling the sonde is available together with the correct fittings and couplings.

### Propelling a sonde

Sondes have a thread at one end for connecting to drain rods, or to other devices for inserting and propelling the sonde along a drain or duct. Sondes may be floated along drains at the end of a tether and floats are available for fitting to the sewer sonde and super sonde. Sondes can be strapped to high-pressure water jets or similar devices used for cleaning, maintaining and inspecting drains. Sondes used in underground drilling and boring operations are normally housed in the boring or drill head behind the boring or drill bit.

## Preparation

Insert a new battery into the sonde. A new battery or a freshly recharged battery should be used at the beginning of each day and preferably at the start of each new job.

Before inserting the sonde and propelling along the proposed route check that the sonde is working correctly and that the locator and sonde are at the same frequency. To do this, place the sonde on the ground at a distance from the locator that is equal to the rated depth of the sonde. Set the locator to Peak+ Guide mode, point the locator at the sonde with the antenna in line with the sonde (the opposite of using the locator to locate a line) and check that the bargraph reading exceeds 50% at maximum sensitivity.

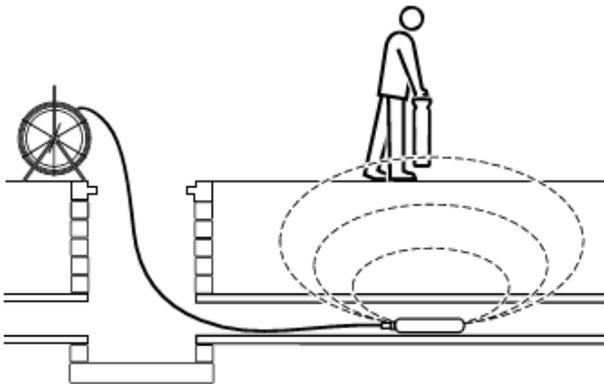


Figure 5.1 Sonda deployment

## Locating and tracing a sonde

Insert the sonde in the drain or duct access and locate it while it is still just in view at the drain or duct entrance. Hold the locator vertical directly over the sonde with the antenna in line with the sonde as shown in Figure 5.3. Adjust the locator sensitivity so the bar graph reads between 60% and 80%.

The sonde radiates a Peak field from the center of its axis with a ghost signal at each end of the Peak. Move the locator a little way behind and then in front of the axis of the sonde to detect the ghost signals. Finding the two ghost signals positively confirms the location. Reduce the locator sensitivity to lose the ghost signals but still indicate a clear Peak response directly over the sonde. Locator sensitivity is now set for tracing the duct or drain unless the distance between sonde and locator changes. Propel the sonde three paces along the drain or duct and stop.

(a) Place the locator over the supposed position of the sonde and move the locator backwards and forwards with the blade in line with the sonde and stop when the locator display indicates a clear peak response.

(b) Rotate the locator as if the blade were a pivot, stop when the display indicates a clear peak response.

(c) Move the locator from side to side until the display indicates a clear peak response.

Repeat (a), (b) and (c) in smaller increments with the locator blade resting on or near the ground. The locator should now be directly above the sonde with the blade in line with the sonde. Now mark the position.

Propel the sonde a further three to four paces along the drain or duct and pinpoint and mark. Repeat this procedure along the route at similar intervals. It should only be necessary to change the locator sensitivity while tracing the sonde if there is a change in the depth of the drain or duct, or the distance between the locator and sonde.

While locating the sonde it is useful to make use of the compass feature on the locator display to assist with the orientation of the locator with the sonde and for confirming direction of sonde.

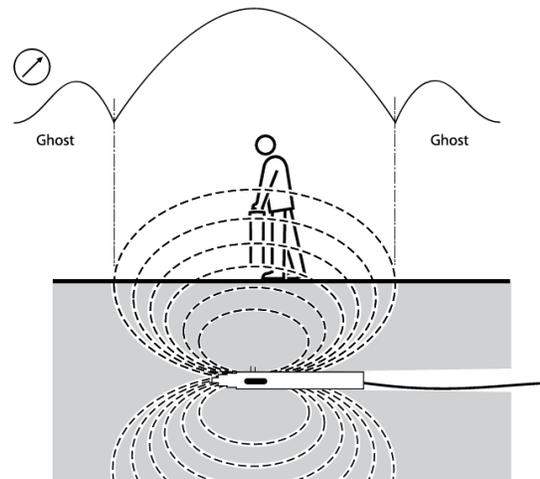


Figure 5.2 Locating a sonde



Figure 5.3 – RD5100S locator with 33 kHz standard sonde

## 5.2 Depth Measurements

All RD5100S locators use TruDepth™ to measure depth automatically when a good quality reading can be assured.

**NOTE:** TruDepth only indicates a locate depth when:

- The locator is correctly oriented above the sonde.
- The locate signal conditions assessed are good enough to ensure an accurate reading.

To help you orientate the locator correctly, you can use the locator's compass feature on the screen.

Depth readings are displayed in the units of measurement according to the configuration of the RD5100S.

Depth readings are to the center of the sonde.

Note: Make sure that the compass on the LCD is in the East / West orientation as shown in figure 5.4.

Depth range and accuracy vary depending on the makeup and type of target utility (for example pipe or sonde), its depth and external environmental factors like electromagnetic noise, ground conditions and interference.

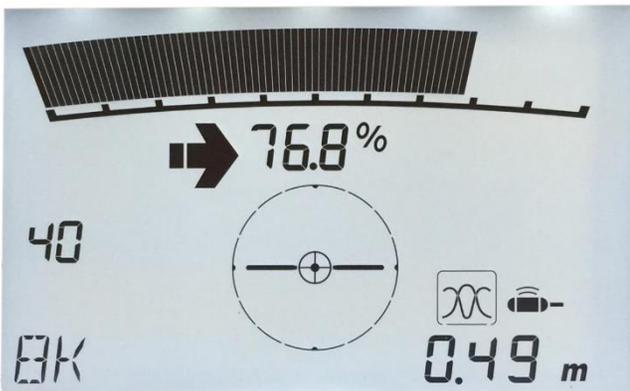


Figure 5.4 – Depth readings

### Obtaining Depth Measurements

Pinpoint the sonde as previously described and rest the locator on the ground and in line with the sonde. If using Peak+ guide mode, adjust sensitivity to provide bar graph response around 50%. The locator will automatically display a depth measurement.

## 5.3 Verifying depth measurements

Check a suspect or critical depth reading by lifting the locator 50 mm (2") above the ground and repeating the

measurement. If the measured depth increases by the same amount it is a good indication that the depth reading is correct. When locating for a sonde, depth measurements should be precise to  $\pm 3\%$  if conditions are suitable.

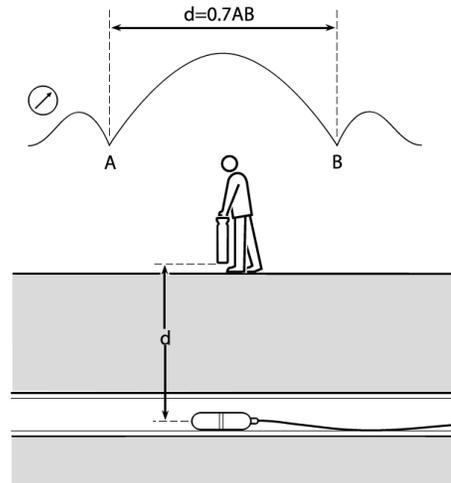


Figure 5.5 - Verifying a depth measurement

### Calculation method

If the locator does not provide a depth measurement or the sonde is too deep for the locator to display or calculate a depth, pinpoint the sonde. Move the locator in front of the sonde and still with the antenna in line with it, increase sensitivity to find the Peak of the ghost signal. Move the locator to behind the sonde ensuring that the locator blade is always in line with the sonde. Find the null positions A and B (see Figure 5.5 - Verifying a depth measurement). Measure the distance between them and multiply by 0.7 to give an approximate depth measurement.

## Section 6 RD5100 Manager

### 6.1 About RD5100 Manager™

RD5100 Manager is the RD5100S locator PC companion and allows you to manage and customize your locator. It also allows software updates and eCert.

You can use RD5100 Manager to register your products to extend the warranty to a total of 3 years (see Warranty

section below), setup your locator by performing a number of maintenance tasks.

RD5100 Manager is compatible with PCs running with Microsoft Windows XP, Windows 7, Windows 8, Windows 8.1 and Windows 10.

For more information about RD5100 Manager refer to the RD5100 Manager Operation manual.

### To Obtain RD5100 Manager:

Contact Radiodetection for eCert and RD5100 Manager availability: Go to [www.radiodetection.com](http://www.radiodetection.com)

## 6.2 Warranty and extended warranty

RD5100S locators and transmitters are covered by a one year warranty as standard.

Customers can extend the warranty period to a total of three years by registering their products (locators and transmitters) within three months from purchase.

Registration is performed using the online Radiodetection Support portal located at:

<https://support.radiodetection.com/hc/en-gb/articles/115001610452-Managing-your-Radiodetection-products>

From time to time Radiodetection may release new software to improve the performance or add new functionalities to his products. By registering user will benefits from subscribing to e-mail alerts advising about any new software and special offers related to its product range.

Users will be able to opt out at any moment from receiving software and technical notifications or just from receiving marketing material.

### Registering using e-mail

If you have problem logging into the Support portal you can also register your product(s) by sending an e-mail to [rd\\_support@spx.com](mailto:rd_support@spx.com).

You will need to provide the following details:

- 1 Date of Purchase.
- 2 Serial Number of each of your qualifying products (RD5100S locators).
- 3 Your e-mail address.
- 4 Your Company name.
- 5 Contact Name.
- 6 Address.
- 7 Telephone Number.
- 8 Country of residence.

- 9 Indicate if you do not wish to receive e-mail alerts advising about any new software release.
- 10 Indicate if you do not wish to receive e-mail or other marketing material with new product information or special offers and promotions related to its product range.

## 6.3 Upgrading software

From time to time, Radiodetection may release software upgrades to enhance features and improve performance of the RD5100S locator.

Software upgrades are free of charge.

E-mail alerts and notification of new software releases are sent to all registered users.

**NOTE:** To upgrade your software you need to have created an account using RD5100 Manager and have a live internet connection. An optional Radiodetection supplied power source may be required to update your transmitter software.

## 6.4 eCert™

The RD5100S has been designed so that it does not require regular calibration. However, as with all safety equipment, it is recommended that a service should be carried out at least once a year either at Radiodetection's service center or an approved Radiodetection service center. Alternatively eCert™ may be used to validate the calibration of the RD5100S locator.

eCert is a novel Radiodetection technique that allows the user to validate the original factory calibration of the RD5100S locator, providing the user with the confidence that the locator continues to meet its original factory calibration. eCert also carries out a functional test on the locator providing the user with the confidence that the locator continues to provide the same performance as it did when it first left the factory. eCert can be carried out on site without the need to return the locator to a service center, saving time and expense. Each time the locator passes eCert, the user can view or print a dated eCert calibration certificate.

To run eCert, the locator should be connected to an internet-enabled PC, on which the RD5100 Manager software is installed. Additional eCert credits may be required and purchased.

Refer to the RD5100 Manager<sup>(i)</sup> Operation Manual for further details.

**NOTE:** <sup>(i)</sup>Contact Radiodetection for availability of the RD5100 Manager.

**NOTE:** eCert is not presently available for transmitters.

## Section 7 Using accessories

### 7.1 About accessories

The locator is compatible with a range of sondes and Flexrods.

Radiodetection supply an accessory sheet with pictures and details of all applicable accessories which is available on [www.radiodetection.com](http://www.radiodetection.com)

For a full list of supported accessories that are available for purchase, refer to the appendix.

### 7.2 Headphones

Radiodetection supplies an optional headphone set for the RD5100S locator. The headphones feature an adjustable headband to ensure a tight fit when used in the field. The accessory headphones also feature volume adjustment for both left and right speakers.

Connect the 3.5 mm headphone jack into the locator's headphone socket, which is located next to the accessory panel.

**⚠ WARNING:** Before wearing headphones, lower the locator's volume levels to help prevent damage to your hearing.

**⚠ WARNING:** Wearing headphones may impede your awareness to dangers in the field such as moving traffic or other heavy machinery. Exercise caution!

## Section 8 Appendices

### 8.1 Care and maintenance

The RD5100S locator and transmitter are robust, durable and weatherproof. However you can extend your equipment's life by following these care and maintenance guidelines.

#### General

Store the equipment in a clean and dry environment.

Ensure all terminals and connection sockets are clean, free of debris and corrosion and are undamaged.

Do not use this equipment when damaged or faulty.

#### Batteries and power supply

Use only good quality Alkaline or NiMH batteries.

When using an AC adapter, use only Radiodetection approved adapters.

Only use Radiodetection approved Li-Ion battery packs.

#### Cleaning

**⚠ WARNING:** Do not attempt to clean this equipment when it is powered or connected to any power source, including batteries, adapters and live cables.

Ensure the equipment is clean and dry whenever possible.

Clean with a soft, moistened cloth.

If using this equipment in foul water systems or other areas where biological hazards may be present, use an appropriate disinfectant.

Do not use abrasive materials or chemicals as they may damage the casing, including the reflective labels.

Do not use high pressure hoses.

#### Disassembly

Do not attempt to disassemble this equipment under any circumstances. The locator and transmitter contain no user serviceable parts.

Disassembly may damage the equipment and or reduce its performance and may void the manufacturer's warranty.

#### Service and maintenance

The locator is designed to minimize the requirement for regular calibration. However, as with all safety equipment, it is recommended (and may be required by law) that they are serviced at least once a year, either at

Radiodetection or a Radiodetection-approved repair center.

Regularly check your locator for correct operation using eCert (see Section 6.4).

**NOTE:** Service by non-approved service centers or operators may void the manufacturer's warranty.

Radiodetection products, including this guide, are under continuous development and are subject to change without notice. Go to [www.radiodetection.com](http://www.radiodetection.com) or contact your local Radiodetection representative for the latest information regarding the RD5100S locator or any Radiodetection product.

## 8.2 Compliance

### EU Compliance

This equipment complies with the following EU Directives:

R&TTE Directive 1999/5/EC.

Low Voltage Directive: 2006/95/EC.

EMC Directive: 2004/108/EC.

### FCC Compliance Statement

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- The equipment may not cause harmful interference
- The equipment 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 A digital device pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

**Modifications:** Any modifications made to this equipment not approved by Radiodetection may void the authority granted to the user by the FCC to operate this equipment.

## Industry Canada Compliance Statements

ICES-003 Class A Notice:

- This Class A digital apparatus complies with Canadian ICES-003.

Avis NMB-003, Classe A:

- Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

## 8.3 Intellectual property

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## 8.4 List of supported accessories

### Accessories for tracing or locating non-conductive utilities

Standard Sonde 33kHz, depth up to 5m		10/SONDE-STD-33
Standard Sonde 8kHz, depth up to 5m		10/SONDE-STD-8
Standard Sonde 512Hz, depth up to 5m		10/SONDE-STD-512
Standard Sonde 512Hz single end, depth up to 5m		10/SONDE-STD-512-TW
Sewer Sonde 33kHz, depth up to 8m		10/SONDE-SEWER-33
Super Sonde 33kHz, depth up to 15m		10/SONDE-SUPER-33
4.5" (115mm) Diameter Floats/Pair for Sewer and Super Sondes		10/SONDE-FLOATS
S6 Microsonde Kit, incl. battery and case		10/SONDE-MICRO-33
S9 MiniSonde, incl. battery and case		10/SONDE-MINI-33
S13 Sonde Kit (includes M10 Stud and Plain End Caps, two Batteries and Case)		10/SONDE-S13-33
S18A Sonde 33kHz with M10 Stud End Cap and one D1/3N battery		10/SONDE-S18A-33
S18A Sonde 33kHz Kit with M10 Stud and Plain End Caps and two D1/3N Batteries		10/S18-33-KIT
S18B Sonde 33kHz with Extended Aluminum End Cap for two AA Batteries (batteries included)		10/SONDE-S18B-33
Bendi Sonde with M10 Male End Cap (512Hz continuous)		10/SONDE-BENDI-512
4.5mm 50m Flexrod		10/FLEXRODF50-4.5
4.5mm 80m Flexrod		10/FLEXRODF80-4.5
6.7mm 50m Flexrod		10/FLEXRODF50-7
6.7mm 100m Flexrod		10/FLEXRODF100-7
6.7mm 150m Flexrod		10/FLEXRODF150-7
9mm 60m Flexrod		10/FLEXRODF60-9
9mm 120m Flexrod		10/FLEXRODF120-9

Power options		
RD5100S Locator accessories		
Li-Ion rechargeable battery pack in gr. grey (no charger) (4 pins)		10/RX51-BATPACK-LION
2 cells battery tray (2x D-Cell / LR20)		10/RX51-2DCELL-TRAY
Li-Ion 12V automotive charger		10/RX-ACHARGER-LION
Li-Ion mains charger (includes power lead)		10/RX-MCHARGER-LION-XX
Li-Ion rechargeable battery pack with auto charger		10/RX51-ABATPACK-LION
Li-Ion rechargeable battery pack with mains charger (includes power lead)		10/RX51-MBATPACK-LION-XX
Li-Ion rechargeable battery pack with mains and automotive charger (includes power lead)		10/RX51-MABATPACK-LION-XX
Transport and Storage Accessories		
RD5100S Locator accessories		
Locator & transmitter universal, soft carry bag		10/LOCATORBAG

For more accessories please visit [www.radiodetection.com/accessories](http://www.radiodetection.com/accessories)

## 8.5 RD5100S Package part numbers

RD5100S Package part numbers	Part Number
5100S Locator Metric 50Hz	10/51SM50
5100S Locator Imperial 50Hz	10/51SI50
5100S Locator Metric 60Hz	10/51SM60
5100S Locator Imperial 60Hz	10/51SI60

Visit [www.radiodetection.com](http://www.radiodetection.com)

## Global locations

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### Schonstedt Instrument Company (USA)

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Toll Free: +1 888 367 7014 Tel: +1 304 724 4722 [schonstedt.info@spx.com](mailto:schonstedt.info@spx.com)

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