

RADIODETECTION® 

RD8100™

Multifunction precision
cable and pipe locators

User Guide

Guía del usuario

Kurzbedienungsanleitung

Gebruikershandleiding

Guide d'utilisation

用戶指南

Uživatelská příručka

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Preface

About this guide


CAUTION: This guide provides basic operating instructions for the RD8100 locator and transmitter. It also contains important safety information and guidelines and as such should be read in its entirety before attempting to operate the RD8100 locator and transmitter.


This guide is intended as a quick reference guide only. For detailed instructions, including the use of accessories, help with eCert™, CALSafe™, Survey measurements and usage-logging* please refer to the RD8100 locator operation, RD SurveyCERT+™ and RD Manager™ manuals, which are available for download from **www.radiodetection.com**.

The online User Manual library also contains links to the SurveyCERT+ and RD Manager manuals.

Certificates of conformity for the RD8100 locators and Tx transmitter ranges can be found at **www.radiodetection.com**.

*Logging and GPS models only


 **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!** The transmitter is capable of outputting potentially lethal voltages. Take care when applying signals to any pipe or cable and be sure to notify other technicians who may be working on the line.

 **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!** When using the transmitter, switch off the unit and disconnect cables before removing the battery pack.

 **WARNING!** The RD8100 locator will detect most buried conductors but there are some objects that do not radiate any detectable signal. The RD8100, or any other electromagnetic locator, cannot detect these objects so proceed with caution. There are also some live cables which the RD8100 will not be able to detect in Power mode. The RD8100 does not indicate whether a signal is from a single cable or from several in close proximity.

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

 **WARNING!** Only use charging equipment provided by Radiodetection. The use of alternative chargers may cause a safety hazard and/or reduce the life of the battery.

CAUTION: Do not let your battery completely discharge as this may reduce its life or damage it permanently. If you are not using your equipment for a long period charge them at least once a month.

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

CAUTION: If battery failure is suspected or if the battery shows any sign of discoloration / physical damage 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.

NOTE: The charging temperature range is 0 to 45 °C, 32 to 113°F. Do not attempt to recharge your batteries outside this temperature range.

3 Year Extended Warranty

RD8100 locators and transmitters are covered by a 1 year warranty as standard. Customers can extend their warranty period to a total of 3 years by registering their products within 3 months of purchase.

There are 2 ways to register your product:

1. Radiodetection portal

Visit <https://portal.radiodetection.com> to create your portal account* and use the Product page to register your locator or transmitter.

Visit <https://support.radiodetection.com> for instructions on how to create a portal account or register your product.

* A valid email address and mobile number are required.

2. Windows Applications

RD Manager™ available from www.radiodetection.com/RDManager.

From time to time Radiodetection may release new software to improve the performance or add new functionality to its products. By registering, users will benefit from email alerts advising about new software and special offers related to its product range.

Users can opt-out at any time from receiving software and technical notifications, or just from receiving marketing material by contacting Radiodetection.

eCert and Self-Test

The RD8100 locator is safety equipment which should be regularly checked to ensure its correct operation.

eCert provides a thorough test of the RD8100's locating circuitry, and supplies a Radiodetection Calibration Certificate when a positive test result is obtained.

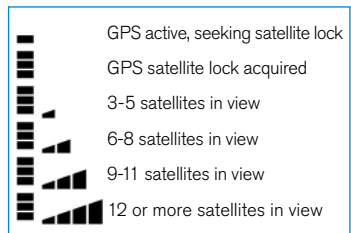
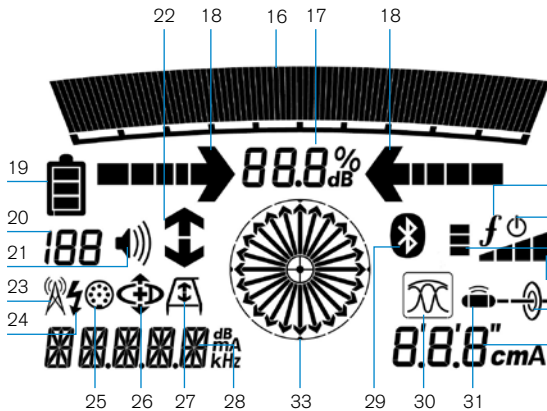
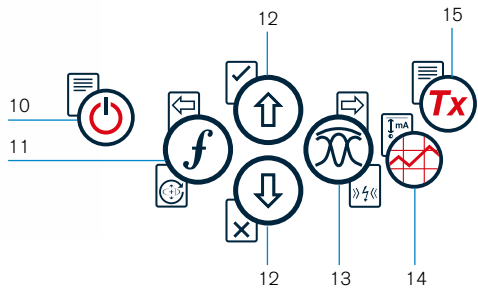
To run an eCert, the locator should be connected to an internet-enabled PC on which the RD Manager software is installed.

Refer to the RD Manager operation manual for further details. Additional purchase may be required.

RD8100 locators incorporate an Enhanced Self-Test feature. In addition to the typical checks for display and power functions, the RD8100 applies test signals to its locating circuitry during a Self-Test to check accuracy and performance.

We recommend that a self-test is run at least weekly, or before each use.

RD8100 locator



Locator features

1. Keypad.
2. LCD with auto backlight.
3. Speaker.
4. Battery compartment.
5. Optional Lithium-Ion battery pack.
6. Accessory connector.
7. Headphone connector.
8. Bluetooth® module antenna.
9. USB port
(inside battery compartment).

Locator keypad

10. Power key.
11. Frequency key.
12. Up and down arrows.
13. Antenna key.
14. Survey key.
15. Transmitter key.

Locator screen icons

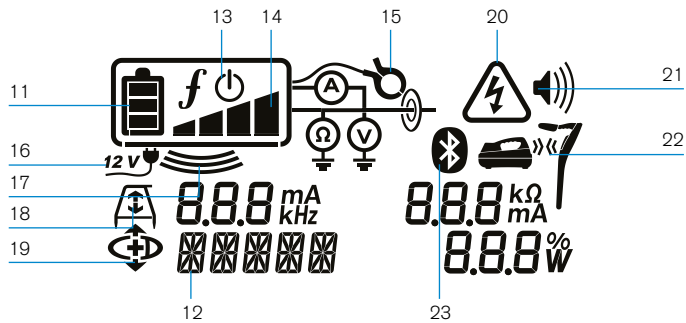
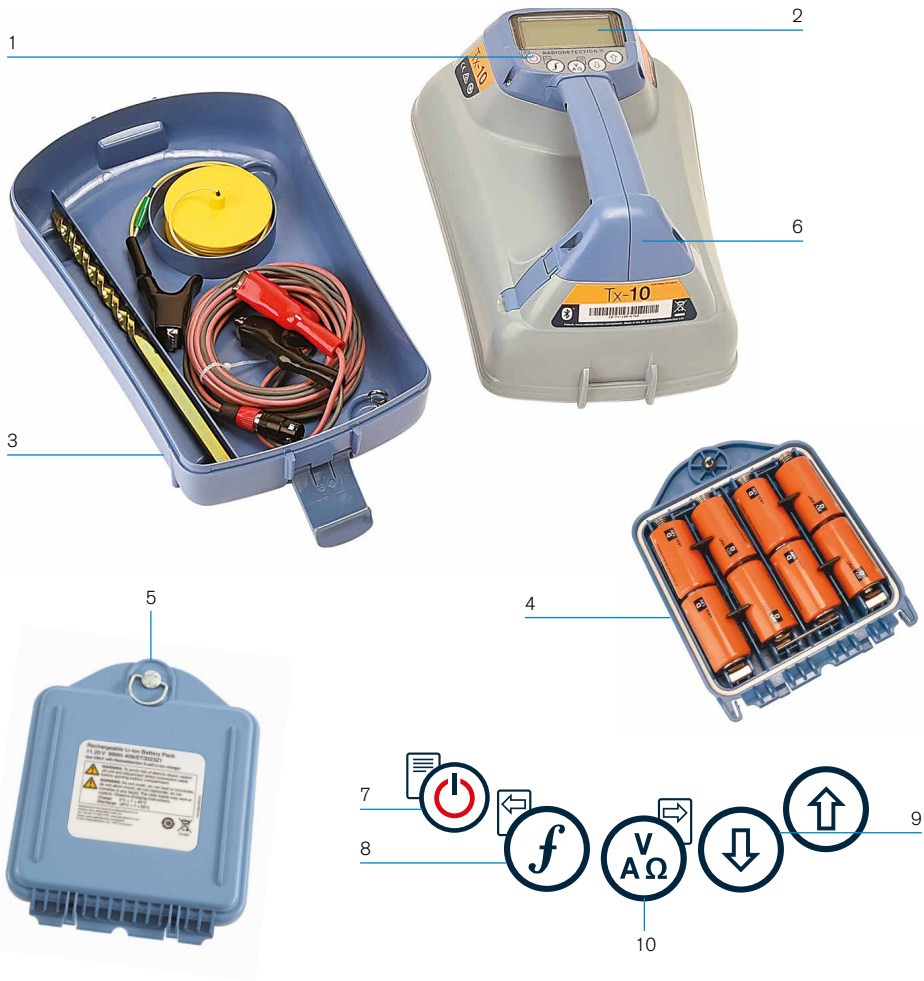
16. Signal strength bargraph with peak marker.
17. Signal strength readout.
18. Null / Proportional Guidance arrows.
19. Battery level.
20. Sensitivity readout / Log number.
21. Volume level.
22. Current Direction arrows.

23. Radio Mode icon.
24. Power Mode icon.
25. Accessory / Measurement icon.
26. CD Mode icon.
27. A-Frame icon.
28. Frequency / current / menu readout.
29. Bluetooth status icon:
Flashing icon means pairing is in progress. Solid icon indicates a connection is active.
30. Antenna mode icon:
Indicates antenna mode selection: Peak / Null / Broad Peak / Peak+™ / Guidance.
31. Sonde icon: Indicates that a sonde signal source is selected.
32. Line icon: Indicates that a line signal source is selected.
33. Compass: Shows the orientation of the located cable or sonde relative to the locator.
34. Transmitter communication status – confirms successful iLOC™ communication.
35. Transmitter standby indicator.
36. Depth readout.

GPS equipped locators only:

37. GPS Status.
38. GPS Signal quality.

Tx-1, Tx-5 and Tx-10 transmitters



Transmitter features

1. Keypad.
2. LCD.
3. Removable accessory tray.
4. D-cell battery tray.
5. Optional Lithium-Ion battery pack.
6. Bluetooth module (iLOC units).

Transmitter keypad

7. Power key.
8. Frequency key.
9. Up and down arrows.
10. Measure key.

Transmitter screen icons

11. Battery level indicator.
12. Operation mode readout.
13. Standby icon.
14. Output level indicator.


15. Clamp icon: Indicates when a signal clamp or other accessory is connected.
16. DC Power connected indicator.
17. Induction mode indicator.
18. A-Frame: Indicates when the transmitter is in Fault-Find Mode.
19. CD Mode: Indicates that the transmitter is in Current Direction Mode.
20. Voltage warning indicator: Indicates that the transmitter is outputting potentially hazardous voltage levels.
21. Volume level indicator.

iLOC enabled transmitters only:








22. Pairing icon: Appears when the transmitter and locator are connected via iLOC.
23. Bluetooth icon: Indicates status of Bluetooth connection. Flashing icon means pairing is in progress.










Keypad actions and shortcuts



Switch the locator or transmitter on by pressing the  key. Once powered up, the keys function as follows:

Locator keys

KEY	● SHORT PRESS	▬ LONG PRESS
	Enter the menu	Switch power off
	Scroll through locate frequencies from low to high	SideStep™ (see 'iLOC' section) When using Current Direction™: Perform a CD Reset
	When using active frequencies: Toggles Peak, Peak+, Null, Broad Peak and Guidance antenna modes. In Power Mode: Scrolls through Power Filters™ for improved discrimination of parallel or strong power signals	In Peak+ antenna mode: Switch between Guidance and Null arrows
 and 	Increase and decrease gain. RD8100 automatically sets gain to mid-point when pressed	Rapidly increase and decrease gain steps in 1dB increments
	Take a Survey Measurement and send over Bluetooth if paired	-
	Send an iLOC command to a paired transmitter	Enter the Transmitter power setting menu for use over iLOC

Transmitter keys

KEY	● SHORT PRESS	▬ LONG PRESS
	Enter the menu	Switch Power off
	Scroll through locate frequencies from low to high	-
	Take voltage and impedance measurements using the currently selected frequency	Take voltage and impedance measurements at a standardized frequency
 and 	Adjusts the output signal	Select standby  / maximum standard power 

Tip: to scroll through frequencies from high to low, hold  while pressing the  button (applies to both locators and transmitters).

Before you begin

IMPORTANT!

This guide is intended to be a quick reference guide. We recommend you read the full operation manual before you attempt to operate the RD8100 locator.

First use

The RD8100 locators and transmitters can be powered by D-cell alkaline batteries, D-cell NiMH batteries, or by an accessory Lithium-Ion (Li-Ion) battery pack.

To fit the D cell batteries in the locator, open the battery compartment and insert two D-Cell Alkaline or NiMH batteries, taking care to align the positive (+) and negative (-) terminals as indicated.


To fit the D cell batteries in the transmitter, unlatch the accessory tray. The battery compartment is located underneath the transmitter body. Use the turnkey to unlatch the battery compartment. Insert eight D-Cell Alkaline or NiMH batteries, taking care to align the positive (+) and negative (-) terminals as indicated.

Alternatively, you can power the transmitter from a mains or vehicle power source using a Radiodetection supplied optional accessory adapter.

Rechargeable battery packs

Lithium-Ion battery packs are available for both locators and transmitters, providing superior performance over traditional alkaline batteries. To fit these rechargeable packs, follow the instructions provided with each pack.

Checking your system software version

If you wish to check which version of software is running on your locator, press and hold the  key when switching the locator on. This information may be asked for when contacting Radiodetection or your local representative for technical support.





Transmitters automatically show their software version on startup.

System setup









It is important that you set up the system according to regional / operational requirements and your personal preferences before you conduct your first survey. You can set the system up using the menus as described below.

Setting up your system

The RD8100 locator and transmitter menus allow you to select or change system options. Once entered, the menu is navigated using the arrow keys. Navigation is consistent on both the transmitter and the locator. When in the menu, most on-screen icons will temporarily disappear and the menu options will appear in the bottom left-hand corner of the display. The right arrow enters a submenu and the left arrow returns to the previous menu.


Note that when browsing the locator menu, the  and  keys act as left and right arrows. When browsing the transmitter menu, the  and  keys act as left and right arrows.

To navigate menus:

1. Press the  key to enter the menu.
2. Use the  or  keys to scroll through the menu options.
3. Press the  key to enter the option's submenu.
4. Use the  or  keys to scroll through the submenu options.
5. Press the  key to confirm a selection and return to the previous menu.
6. Press the  key to return to the main operation screen.

NOTE: When you select an option and press the  key, the option will be enabled automatically.

Locator menu options

- VOL: Adjust the speaker volume from 0 (mute) to 3 (loudest).
- DATA: Delete, send or review saved SurveyCERT measurements and enable or disable the Bluetooth communication channel.
- BT: Enable, disable, reset or pair Bluetooth connections. Also defines the protocol used when connecting to a PC or PDA.
- GPS: Enable or disable the internal GPS module and enable/disable SBAS GPS augmentation (GPS models only) – or select an external GPS source.
- CDR: Perform a Current Direction (CD) Reset. (Alternatively press and hold the  key when in CD mode).
- UNITS: Select metric or imperial units.
- INFO: Run a Self-Test, display the date of the most recent service recalibration (M CAL) or the most recent eCert calibration.
- LANG: Select menu language.
- POWER: Select local power network frequency: 50 or 60Hz.
- ANT: Enable or disable any antenna mode with the exception of Peak.
- FREQ: Enable or disable individual frequencies.
- ALERT: Enable or disable StrikeAlert™.
- BATT: Set battery type: Alkaline or NiMH. Li-Ion auto-selects when connected.
- ARROW: Select Null or proportional Guidance arrows in Peak+ mode
- COMP: Enable or disable display of the Compass feature.

Transmitter menu options








- VOL: Adjust the speaker volume from 0 (mute) to 3 (loudest).
- FREQ: Enable or disable individual frequencies.
- BOOST: Boost transmitter output for a specified period of time (in minutes).

- LANG: Select menus language.
- OPT F: Run SideStep^{auto}™ to auto-select a locate frequency for the connected utility.
- BATT: Set battery type: ALK, NiMH or Li-ION and enable / disable Eco mode.
- MAX P: Set the transmitter to output its maximum wattage.
- MODEL: Match the transmitter setting to the model of your locator.
- MAX V: Set the output voltage to maximum (90V).
- BT: Enable, disable or pair Bluetooth connections (Bluetooth models only).

Examples of using the menu, selecting options and making changes:

Locator mains power frequency







To select the correct frequency (50 or 60Hz) for your country or region's power supply:

1. Press the  key to enter the menu.
2. Scroll to the POWER menu using the  or  keys.
3. Press the  key to enter the POWER menu.
4. Use the  or  keys to select the correct mains frequency.
5. Press the  key twice to accept your selection and return to the main operation screen.

Batteries





It is important to set the system to match the currently installed battery type to ensure optimal performance and correct battery level indication.







To set your battery type:

1. Press the  key to enter the menu.
2. Scroll to the BATT menu using the  or  arrows.
3. Press the  key (locator) or the  key (transmitter) to enter the BATT menu.
4. Scroll up or down to select the correct battery type (Alkaline, Nickel-metal Hydride or Lithium-Ion). Lithium-Ion is automatically selected when a Li-Ion pack is connected to a Locator.
5. Press the  key twice to accept your selection and return to the main operation screen.

Transmitter Eco Mode

When using alkaline batteries, Eco mode can be selected to maximize run time. When Eco mode is selected the transmitter automatically reduces its maximum power output as battery levels run low. Eco mode is switched off by default. To Enable Eco Mode:

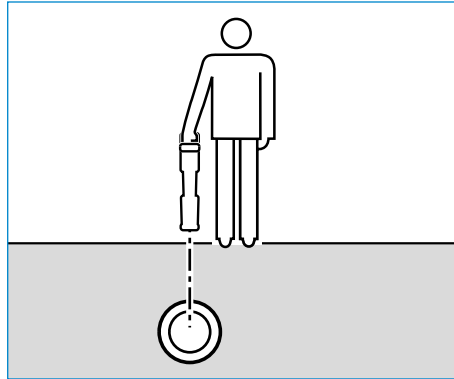
1. Press the  key to enter the menu.
2. Scroll to the BATT menu using the  or  arrows.
3. Press the  key to enter the BATT menu.

4. Select the ALK Battery type using the  or  arrows.
5. Press the  key to enter the ECO sub menu
6. Select ECO using the  or  arrows.
7. Press the  key three times to accept your selection and return to the main operation screen.

Locating pipes and cables










For more detailed descriptions of using the locator and transmitter, and for detailed locate techniques, refer to the Operation Manual.

The RD8100 locator is designed to operate with the 'blade' of the locator perpendicular to the path of the cable or pipe being located.






Running a Self-Test



We recommend that a Self-Test is run at least weekly, or before each use. As the Self-Test tests the integrity of the locate circuitry, it is important that it is carried out away from larger metallic object such as vehicles, or strong electrical signals. To run a Self-Test:

1. Press the  key to enter the menu.
2. Scroll to the INFO menu using the  or  arrows.
3. Press the  key to enter the INFO menu.
4. Select TEST using the  or  arrows.
5. Press the  key to select YES.
6. Press the  key to begin the Self-Test.
7. Once the Self-Test is completed, the result (PASS or FAIL) will be displayed.
8. Restart the locator using the  key

SideStepauto™

The transmitter can be used to recommend a general-purpose locate frequency for the intended locate task by measuring the impedance of the target cable or pipe. To run SideStepauto™, connect the transmitter to the target utility, then:

1. Press the  key to enter the menu.
2. Scroll to the OPT F menu using the  or  arrows.

3. Press the  key to select 'START'.
4. Press the  key to start the test. The transmitter will automatically select a general purpose frequency for use on the connected utility.

Locating with Active Frequencies

Active frequencies are applied to the target pipe or cable using the transmitter, and provide the most effective way of tracing buried pipes or cables.

Generally speaking, it is better to use a low frequency on larger, low impedance utilities, and move to a higher frequency on smaller, high impedance utilities.


The lowest power setting required to trace the target utility should always be used to minimize the risk of false trails.

The transmitter can apply a signal using three different methods:

Direct connection

In direct connection, you connect the transmitter directly to the pipe or cable you wish to survey using the red Direct Connect lead supplied. The black lead is generally connected to earth using the supplied ground stake.

The transmitter will then apply a discrete signal to the line, which you can trace using the locator. This method provides the best signal on an individual line and enables the use of lower frequencies, which can be traced for longer distances.

 **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.**

Induction

The transmitter is placed on the ground over or near the survey area. You select the appropriate frequency. The transmitter will then induce the signal indiscriminately to any nearby metallic conductor. In induction mode, using higher frequencies is generally recommended as they are induced more easily onto nearby conductors.

Transmitter Clamp

An optional signal clamp can be placed around an insulated live wire or pipe up to 8.5" / 215mm in diameter to transfer the transmitter signal to the utility. This method of applying the transmitter signal is particularly useful on insulated live wires and removes the need to disconnect the supply to the cable.

 **WARNING! Do not clamp around uninsulated live conductors.**


 **WARNING! Before applying or removing the clamp around a power cable ensure that the clamp is connected to the transmitter at all times.**

Locating with Passive Frequencies

Passive frequency detection takes advantage of signals that are already present on buried metallic conductors. The RD8100 supports four types of passive frequencies: Power, Radio, CPS* and Cable TV (CATV)* signals. You can detect these frequencies without the aid of the transmitter.

*Model specific.


Power Filters

RD8100 locators allows operators to take advantage of the harmonic signals found on power networks. Once in Power Mode, press the  key to switch out of Radiodetection's sensitive Power Mode and scroll through five individual Power Filters. This enables operators to establish if a single large power signal comes from one source or from the presence of multiple cables. The different harmonic characteristics of the detected lines can then be used to trace and mark their route.

Additionally the use of an individual harmonic can allow you to locate power lines in situations where the total signal would otherwise be too large.

Locate Modes


The RD8100 offers a choice of 5 locate modes, each of which is designed for specific uses, depending on what task is being carried out.

To scroll between locate modes, press the  key.



PEAK: For accurate locating, the peak bargraph provides a visual readout of the signal strength. The peak signal is found directly over the buried utility.



PEAK+: Choose to combine the accuracy of the Peak bargraph with Null arrows, which can indicate the presence of distortion, or with proportional Guidance arrows for rapid line tracing – switch between them by holding the  key.



GUIDANCE: Proportional arrows and a ballistic 'needle' combine with audio left/right indication for rapidly tracing the general path of a buried utility.




BROAD PEAK: Operating similarly to Peak mode, but giving a result over a wider area. Used to detect and trace very weak signals, for example very deep utilities.



NULL: Provides a quick left/right indication of the path of a utility. As Null is susceptible to interference, it is best used in areas where no other utilities are present.

Depth, current and compass readouts

 **WARNING!** Never use the depth measurement readout as a guide for mechanical or other digging activity. Always follow safe digging guidelines.

The RD8100 locator can measure and display the utility depth, locate signal current and the relative orientation of the cable or pipe to the locator. This helps you to make sure that you are following the right cable or pipe, especially when other utilities are present.

The RD8100 locator features TruDepth™, a feature that helps you to ensure the accuracy of your locates or Survey Measurements. The depth and current are automatically removed from the display when the locator is at an angle of more than 7.5° from the path of the cable or pipe being located, or when the locator determines that signal conditions are too poor for reliable measurements.

Current Direction (CD)

The Tx-10(B) transmitter can apply a unique CD signal onto a pipe or cable. This signal can be used to identify an individual pipe or cable amongst a number of parallel utilities, ensuring operators follow the right line. A CD signal clamp or direct connection leads can be used to apply the unique signal to the pipe or cable and a CD locator clamp or CD stethoscope can be used to identify individual pipes or cables.

Using accessories

The locator and transmitter are compatible with a wide range of accessories. For detailed information on using any of the accessories below please refer to the RD8100 locator operation manual.

Transmitter signal clamps

When it is not possible to connect directly onto a pipe or cable, or induction mode is unsuitable, a transmitter signal clamp may be used. The clamp is plugged into the output of the transmitter and provides a means of applying a locate signal to an insulated live wire. This is particularly useful with live insulated cables as it removes the need to disable the power and break the line.

 **WARNING! Do not clamp around uninsulated live conductors.**

 **WARNING! Before applying or removing the clamp around a power cable ensure that the clamp is connected to the transmitter at all times.**

To locate or identify individual lines a locator signal clamp can be connected to the accessory socket of the locator and can be clamped around individual pipes or cables.

Stethoscopes and locator signal clamps

Locator clamps can be used to identify a target cable or pipe amongst a number of different cables by checking for the strongest locate signal. When cables are bunched or tightly packed, a stethoscope antenna can be used in place of a clamp.

To use a stethoscope or locator signal clamp, connect it to the locator's accessory socket. The locator will automatically detect the device and filter out location modes that are irrelevant.

Sondes, Flexrods and FlexiTrace

Sondes are battery powered transmitters that are useful for tracing non-metallic pipes. They can be fixed to Flexrods to allow them to be pushed through pipes or conduits, and some are suitable for blowing through ductwork. The RD8100 can detect a range of sonde frequencies, including those transmitted by flexiprobe™ P540c pushrod systems and flexitrac™ P550c crawlers.

For a detailed guide on locating sondes, please refer to the operation manual.

A FlexiTrace is a traceable fiberglass rod incorporating wire conductors with a sonde at the end. It is connected to the output of the transmitter and is typically used in small diameter, non-metallic pipes. The user has the option of locating the entire length of the cable or choosing to locate only the tip of the cable.

The FlexiTrace has a maximum power rating of 1W. When using the FlexiTrace with a Radiodetection Tx-5(B) or Tx-10(B) transmitter the output limit must be set to 1W in the MAX P menu and the output voltage limit set to LOW in the MAX V menu.

No additional settings are required for the Tx-1 transmitter.

Fault-finding with an A-Frame

The RD8100PDL and PTL models have the ability to detect cable or pipe insulation faults accurately using an A-Frame accessory. The Tx-5(B) and Tx-10(B) provide fault finding signals that can be detected by the A-Frame as a result of the signal bleeding to ground through damaged cable sheaths.

The Transmitter's multimeter function can be used to measure the impedance of the connected pipe or cable in order to characterize the fault.

For a detailed guide to fault-finding, please refer to the operation manual.

Plug / Live cable connector

The plug connector is connected to the output of the transmitter and is used to put a signal onto a line and trace it from a domestic mains plug to the service cable in the street.

The live cable connector can be used to apply a signal to a live cable. Only suitably qualified personnel should use this equipment.

Submersible antenna

This antenna is connected to the locator and used to locate pipes and cables underwater at depths of up to 300 feet / 100 meters.

 WARNING: use of the submersible antenna should be by fully licensed and experienced personnel only, and only after fully reading the operation manual!

RD Manager PC Software

RD Manager is the RD8100 locator system PC companion, and it allows you to manage and customize your locator. RD Manager is also used to retrieve and analyze survey and usage data, run an eCert calibration, and to perform software upgrades.

You can use RD Manager to register your products to obtain an extended warranty, setup your locator by performing a number of maintenance tasks such as adjusting date and time, activating and de-activating active frequencies, or by setting-up functions like CALSafe or StrikeAlert.

RD Manager is compatible with PCs running Microsoft Windows 64 bit operating system. To download RD Manager, go to www.radiodetection.com/RDManager.

If you do not have internet access, or wish to receive RD manager on a CD-ROM, contact your local Radiodetection office or representative.

For more information about RD Manager refer to the RD Manager operation manual.

Bluetooth wireless connections







RD8100 locators feature a Bluetooth wireless module, as standard, providing the ability to connect to compatible devices such as transmitters (Tx-5B or Tx-10B models), PCs, laptops or handheld devices running a compatible application.

NOTE: The RD8100 locator wireless features may be subject to national and or local regulations. Please consult your local authorities for more information.

⚠ WARNING! Do not attempt any wireless connection in areas where such technology is considered hazardous. This may include: petrochemical facilities, medical facilities or around navigation equipment.

Switching Bluetooth on

By default RD8100 locators and Bluetooth enabled transmitters are shipped with the Bluetooth wireless connection module disabled.

1. Press the  key to enter the menu.
2. Scroll to the BT menu using the  or  keys.
3. Press the  key (locator) or the  key (transmitter) to enter the BT menu.
4. Scroll up or down to the ON option.
5. Press the  key to switch Bluetooth ON and return to the previous menu.

You can switch Bluetooth off to conserve battery life, or to comply with regulations in areas where wireless communications are considered hazardous. To do this, follow the above process, selecting 'OFF' in the BT menus.

Pairing to a PDA or PC

Connection requirements:







- Any RD8100 locator.
- A compatible Bluetooth enabled PDA or Bluetooth enabled PC or Laptop.

NOTE: The procedure below describes the pairing process between a RD8100 locator and a PDA. Pairing to a PC follows the same steps for the RD8100 locator and similar steps for your PC or laptop. Consult your PC or laptop Bluetooth pairing instructions to pair with the RD8100 locator.

Pair the RD8100 locator to your PDA using your PDA's Bluetooth software.

NOTE: The procedure for pairing your PDA may differ depending on the PDA make and model. The following procedure should apply to most PDAs.

On the locator:






1. Press the  key to enter the menu.
2. Scroll to the BT menu using the  or  keys.
3. Press the  key to enter the BT menu.
4. Scroll up or down to the PAIR menu.
5. Press the  key to enter the PAIR menu.
6. Scroll up or down to the BT-PC option.
7. Press the  key and the locator will attempt to pair with your PDA.

On your PDA:

8. From the PDA's **Start menu**, select **Settings** then select the **Connections Tab** followed by the **Bluetooth icon**.
9. Ensure the Bluetooth radio is switched on and make the PDA visible to other devices.
10. Select the Devices tab and scan for new partnerships.
11. Create a partnership with the RD8100_XXXX device.
12. If asked for a passkey, enter 1234.
13. Refer to the SurveyCert manual for advanced settings if required by your PDA.

Resetting connections

If you experience problems with the RD8100 Bluetooth features, Radiodetection recommends resetting the connection and then pairing your device again:

1. Press the  key to enter the menu.
2. Scroll to the BT menu using the  or  keys.
3. Press the  key to enter the BT menu.
4. Scroll up or down to the RESET menu.
5. Press the  key and the locator will purge all current connections.
6. Re-pair your devices.

Bluetooth error codes

If an error occurs when attempting to perform any Bluetooth command using the locator to the transmitter or the locator to a PC or PDA, the LCD will display a code to help you resolve the problem on the locator.

The codes are as follows:

BT CODE	DESCRIPTION
BT001	Bluetooth not configured for this unit
BT002	Internal Bluetooth error
BT003	Locator not paired with transmitter
BT004	Locator not paired with PC/PDA
BT005	Paired but connection attempt failed. Power cycling may be required
BT006	Corrupt response received from transmitter
BT007	Indeterminate response received from transmitter
BT008	No response received from transmitter
TX??	Transmitter unable to change to the requested frequency


Taking Survey Measurements

RD8100 locator models are capable of recording measurements at up to 1000 survey points, and optionally sending them to an external device using Bluetooth.

If the locator is a GPS model or if paired to a PDA with GPS that is running a compatible application such as SurveyCERT the locator will append positional information alongside time and date to the data, providing spatial context.

NOTE: The internal GPS module needs to be switched on and connected to the GPS satellite system.

Saving measurements

To save survey measurements, press the  key.






To achieve accurate results the locator must be kept as still as possible during the saving process.

The locator will always save measurements to internal memory. If Bluetooth is switched on, paired to a device and BT-PC is enabled, the locator will also attempt to send the saved measurement to a paired PDA running SurveyCERT or to a PC running a compatible application.

Erasing measurements

The RD8100 locator allows you to delete all measurements. Erasing the log will wipe the RD8100 memory and is usually recommended when you begin a new survey.

NOTE: Erasing measurements cannot be undone!

1. Press the  key to enter the menu.
2. Press the  or  keys to select LOG menu.
3. Press the  key to enter the LOG menu.
4. Scroll up or down to select the DEL option.
5. Press the  key to make the selection and return to the main menu.

To send stored data to a paired PDA or PC:






Stored data can be transferred wirelessly to a compatible PDA running Radiodetection's SurveyCERT app or a PDA or PC compatible application.

SurveyCERT

SurveyCERT is the PDA app from Radiodetection which makes utility mapping easier for surveyors in the field.

You can use SurveyCERT to store survey measurements taken from your locator in your PDA for later review. SurveyCERT for PDAs, and its operation manual are available as a free download from the Radiodetection website.

To send data to a paired PDA or PC:

1. Ensure your paired PDA is switched on and running the SurveyCERT app.
2. Press the  key to enter the menu.
3. Scroll to the LOG menu using the  or  keys.
4. Press the  key to enter the LOG menu.
5. Scroll up or down to the SEND option.
6. Press the  key and the locator will attempt to send your stored survey data to your PDA.

Stored data can also be transferred using the USB connection to RD Manager to be analyzed by the software's built-in SurveyCERT capabilities. Refer to the RD Manager operation manual for more info on how to retrieve store survey data.

RD Manager's SurveyCERT functionality can be used for post survey analysis, interface to Google Maps® and easy export to GIS/mapping systems.

Automatic Usage-Logging

RD8100 locator models equipped with GPS offer a powerful data logging system which records all the instrument's critical parameters (including GPS position, if available) and warnings in its internal memory every second.

The automatic logging system is always active and cannot be disabled. The locator's memory is capable of storing over 500 days of usage data, when used for 8 hours per day.

Logs can be retrieved using the RD Manager PC application for usage analysis and survey validation. Refer to the RD Manager operation manual for further information.

GPS

The RD8100 locator can be paired to an external GPS module or use its internal GPS module (GPS models only) to be able to detect and store its latitude, longitude and accurate UTC time alongside its location data. This positional information can then be appended to Survey Measurements, or the automatic usage-logging system.

The presence of GPS data allows for the data to be mapped easily and to export and save the information directly into GIS systems.

GPS menu settings

There are 5 options in the GPS menu:

- INT: Select this to use the internal GPS if present.
- EXT: Select this to use the GPS from a compatible paired device.
- OFF: Select this to switch off the internal GPS module and save battery.
- SBAS: Set SBAS (Satellite-based augmentation systems) mode to improve GPS accuracy. When ON the GPS system will take longer to lock.
- RESET: Select YES to reset the internal GPS (GPS models only).

iLOC

iLOC lets you control the transmitter remotely using your RD8100 locator. With iLOC you can adjust the output frequency, power settings and use SideStep. iLOC commands are sent over a Bluetooth module that can operate at distances of up to 450m / 1400ft in direct line of sight.

iLOC is a standard feature of all RD8100 locator models, and requires a Bluetooth equipped Transmitter (Tx-10B or Tx-5B).






NOTE: Operating in built up areas and in areas with high electromagnetic interference may reduce iLOC's performance.

Pairing to a transmitter

To pair to a transmitter you require a Bluetooth enabled model such as the Tx-5B or Tx-10B.





Before you begin, you should switch off all nearby Bluetooth equipment as they may interfere with the locator and transmitter's pairing process.

Preparing the locator:



1. Press the  key to enter the menu.
2. Scroll to the BT menu using the  or  keys.
3. Press the  key to enter the BT menu.
4. Scroll to the PAIR menu and press the  key to enter it.
5. Scroll to the BT-TX option.


NOTE: You must complete the pairing process within 90 seconds to prevent the locator's Bluetooth connection from timing out.

Preparing the transmitter:

6. Press the  key to enter the menu.
7. Scroll to the BT menu using the  or  keys.
8. Press the  key to enter the BT menu.
9. Scroll to the PAIR option.

Starting the pairing process:

10. Press the  key on the transmitter followed by the  key on the locator.
11. The transmitter and the locator will now attempt to pair.

When pairing is in progress, the transmitter and locator will display a flashing Bluetooth icon. Pairing can take up to a minute. If the pairing process is successful, the transmitter will display the  icon and the locator will display a persistent Bluetooth icon for the duration of the connection.

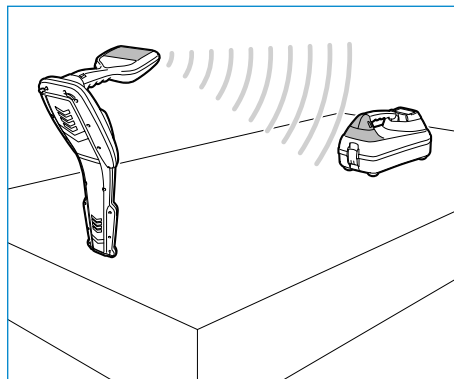
If pairing fails, ensure that any nearby Bluetooth devices are switched off or invisible then repeat the process.

Once the locator and transmitter have successfully paired you can use iLOC to change the transmitter's output frequency and power levels remotely from the locator.

Using iLOC

The locator and transmitter need to be paired to use iLOC. For optimum performance:

- Try to minimize obstructions in line of sight.
- If possible, raise the transmitter off the ground by 30-60cm (1-2ft).
- Face the rear end of the transmitter towards the locator.
- Point the screen of the locator towards the transmitter.



NOTE: If any iLOC commands fail, move closer to the transmitter and repeat the process.

Changing frequencies

Once the transmitter and the locator are paired, you can change the transmitter's output frequency remotely using the locator:

1. On the locator, select the frequency you want by pressing the **(f)** key until the frequency is displayed on screen.
2. Press the **(Tx)** key to send the new frequency to the transmitter.
3. The locator will display SEND momentarily and then OK if the transfer is successful.
4. If the transfer is unsuccessful, the locator will display a Bluetooth error code error code.

If the process fails, you may be out of range or there may be an error in the connection. Move closer to the transmitter and retry the procedure. If the connection continues to fail, return to the transmitter and reset the connection.

Adjusting power






iLOC lets you adjust the transmitter's power output remotely; you can also put the transmitter into standby mode and then wake it remotely.

1. Transmitter power options are located in the TXOUT menu on the locator. Press and hold the **(Tx)** key to display the TXOUT menu.
2. Press the **(W)** key to enter the power level menu.
3. Scroll up or down through the power output options using the **(↑)** or **(↓)** keys:
 - **STDBY:** Transmitter standby mode, the connection is still active but the output is disabled – use to prolong battery life.
 - **LOW:** Low power output.
 - **MED:** Medium power output.
 - **HIGH:** High power output.
 - **BOOST:** Temporarily boosts transmitter power output to its maximum level.
4. Once you have selected the mode you want, press the **(f)** key to confirm.
5. Press and hold the **(Tx)** key to select the new setting and exit the menu.
6. Press the **(Tx)** key once to send the settings to the transmitter.

NOTE: When changing the transmitter frequency using iLOC, the chosen transmitter power setting will be retained.

SideStep

SideStep allows you to change the output frequency on the transmitter. SideStep changes the selected frequency by several Hertz and automatically sets the locator's locate frequency to match the transmitter's output frequency.

1. On the locator, select the frequency you want by pressing the  key until the frequency is displayed on screen.
2. To step the frequency, press and hold the  key until **STEP** appears on the LCD.
3. Press the  key to send the SideStep command to the transmitter.
4. If the command is sent successfully, an asterisk (*) will appear on the locator next to the frequency and STEP will appear on the transmitter below the frequency.
5. To return to the standard locate frequency, press and hold the  key. Once the asterisk (*) has been removed from the display, press the  key to send the command to the transmitter

CALSafe

GPS equipped RD8100 locator models are equipped with a system which can be enabled to force them to shut down once they are beyond the expected service / calibration date.

When the unit is within 30 days of the service due date the unit will display at startup the number of days left. The locator will stop functioning on the service due date.

CALSafe is disabled by default. You can enable the CALSafe feature and edit the CALSafe service / calibration due date using the RD Manager PC software. Refer to the RD Manager operation manual for further information.

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 or contact your local Radiodetection representative.

Care and maintenance

The RD8100 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

Only use the rechargeable battery packs, chargers and power supplies approved by Radiodetection.

If not using rechargeable packs, use good quality Alkaline or NiMH batteries only.

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

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. Do not use abrasive materials or chemicals as they may damage the casing, including the reflective labels. Do not use high pressure jets of water to clean the equipment.

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

Software upgrades

From time to time, Radiodetection may release software upgrades to enhance features and improve performance of the RD8100 locator or transmitter. Software upgrades are free of charge and provided through the RD Manager PC software

E-mail alerts and notification of new software releases are sent to all registered users. You can also check if your products are up-to-date or upgrade them by using the RD Manager software upgrade screen.

NOTE: To upgrade your product's software you need to have created an account using RD Manager and have a live internet connection. An optional Radiodetection power supply may be required to update your transmitter software.

Disassembly

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

Unauthorized disassembly will void the manufacturer's warranty, and may damage the equipment or reduce its performance.

Service and maintenance

Regularly check your equipment for correct operation by using the Self-Test function and eCert.

The locator and transmitter are designed so that they do not require regular recalibration. However, as with all safety equipment, it is recommended that they are serviced and calibrated at least once a year either at Radiodetection or an approved repair center.

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

Details of Radiodetection offices and distribution partners can be found at **www.radiodetection.com**.

Radiodetection products, including this guide, are under continuous development and are subject to change without notice. Go to **www.radiodetection.com** or contact your local Radiodetection representative for the latest information regarding the RD8100 locator or any Radiodetection product.



序言

关于本指南

注意：本指南提供了RD8100定位仪与发射机的基本操作说明。本指南中包含重要的安全信息和指导说明，在操作RD8100定位仪与发射机前应完整阅读本指南。

本指南仅用作快速参考指南。有关详细说明，包括配件的使用、eCert™和CALSafe™、探测测量以及使用记录的帮助*，请参考RD8100定位仪操作手册、RD SurveyCERT+™和RD Manager™手册，可从www.radiodetection.com下载上述内容。

在线用户手册库还包含SurveyCERT+以及RD Manager手册的链接。

RD8100定位仪和Tx发射机系列的合格证书请见www.radiodetection.com。

*仅限记录和GPS型号产品。

警告！ 和带电导体直连**可能具有致命危险**。与带电导体的直连仅可由具有充分资质的人员操作，并仅使用允许和通电路径连接的相关产品。

警告！ 发射机能输出具有可致命的电压。将信号引用于管道或线缆时应注意，要确保通知可能在线路上工作的其他技术人员。

警告！ 使用耳机前，应降低音量，避免损伤您的听力。

警告！ 在可能存在有害气体的区域**不得使用**本设备。

警告！ 如要移除电池，应先关闭发射机，然后断开线缆连接。

警告！ RD8100定位仪可探测到大部分埋设导体，但有部分物体并不发射出任何可探测的信号。由于RD8100或任何其它电磁定位仪无法探测到这些物体，因此在操作时要小心谨慎。还存在一些RD8100在电力模式无法探测到的带电线缆。RD8100无法表明信号是来自单个线缆还是来自紧密靠近的若干线缆。

警告！ 在全功率输出下长时间使用后，电池可能变热。在更换或处理电池时要小心谨慎。

警告！ 只能使用雷迪所提供的充电设备。使用替代充电器可能会引发安全隐患和/或减短电池寿命。

小心： 请勿用尽电池电量，因为这样可能会减短电池寿命或对电池造成永久性损坏。如果您长期不使用设备，至少每月为其充一次电。

警告！ 请勿乱改或尝试拆开电池组。

小心： 如果电池疑似出现故障，或如果电池出现变色/物理损坏，则将整个装置返回至授权维修中心进行检修。地方、国家或 IATA 运输法规规定限制运输故障电池。请向快递公司咨询限制条件和最佳实践指南。您当地的雷迪代表会引导您前往授权维修中心。

注意： 充电温度范围为 0 至 45 °C，32 至 113°F。请勿尝试在温度超限的情况下为电池充电

三年延长质保

RD8100定位仪和发射机的标准质保期为一年。顾客可以在购买产品后3个月内，通过产品注册将质保期延长至三年。

可通过以下 2 种方式注册产品：

1.雷迪门户网站

请访问 <https://portal.radiodetection.com>创建门户网站账户*并在产品页注册您的定位仪和发射机。

请访问<https://support.radiodetection.com> 了解如何创建门户网站账户或注册产品相关说明。

*需要提供有效邮箱地址和手机号码。

2.Windows 应用程序

可从www.radiodetection.com/RDManager下载 RD Manager™

英国雷迪可能不时发布新的软件，来提升这些产品的性能或增加新功能。通过产品注册，用户可获得电邮订阅提醒，了解产品相关的新软件和特别优惠及服务。

用户可以随时选择停止接收软件和技术通知，或通过联系英国雷迪选择停止接收营销材料。

eCert与自检

RD8100定位仪是一种安全设备，应定期进行检查，确保其正常运行。

eCert可对RD8100定位电路进行全面测试，如果测试结果合格，将提供英国雷迪标定证明。

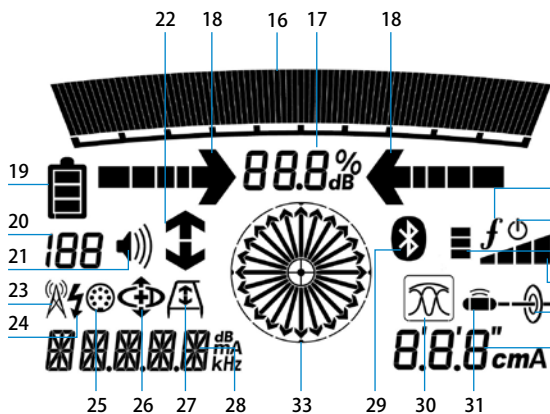
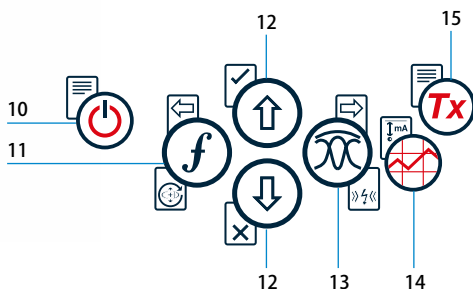
要运行eCert，应将定位仪与连网的电脑相连，且该电脑上已安装RD Manager软件。

有关更多信息，请参考RD Manager操作手册。该软件可能需要另外购买。

RD8100定位仪包含增强自检功能。除了对屏显与电源功能的必要检测外，RD8100在自检中还会将信号施加在定位电路上，以检查设备精度和性能。

建议至少每周或每次使用之前对设备进行一次自检。

RD8100 定位仪



- GPS启动, 寻找卫星锁定
- 已获取GPS卫星锁定
- 3-5颗卫星探测到
- 6-8颗卫星探测到
- 9-11颗卫星探测到
- 12颗或更多颗卫星探测到

定位仪功能

1. 键盘。
2. 含自动背光的LCD显示屏。
3. 扬声器。
4. 电池盒。
5. 可选锂电池组。
6. 配件连接器。
7. 耳机连接器
8. 蓝牙模块天线。
9. USB 端口（位于电池盒内部）。

定位仪键盘

10. 电源键。
11. 频率键。
12. 上下箭头。
13. 天线键。
14. 探测键。
15. 发射机键。

定位仪屏幕图标

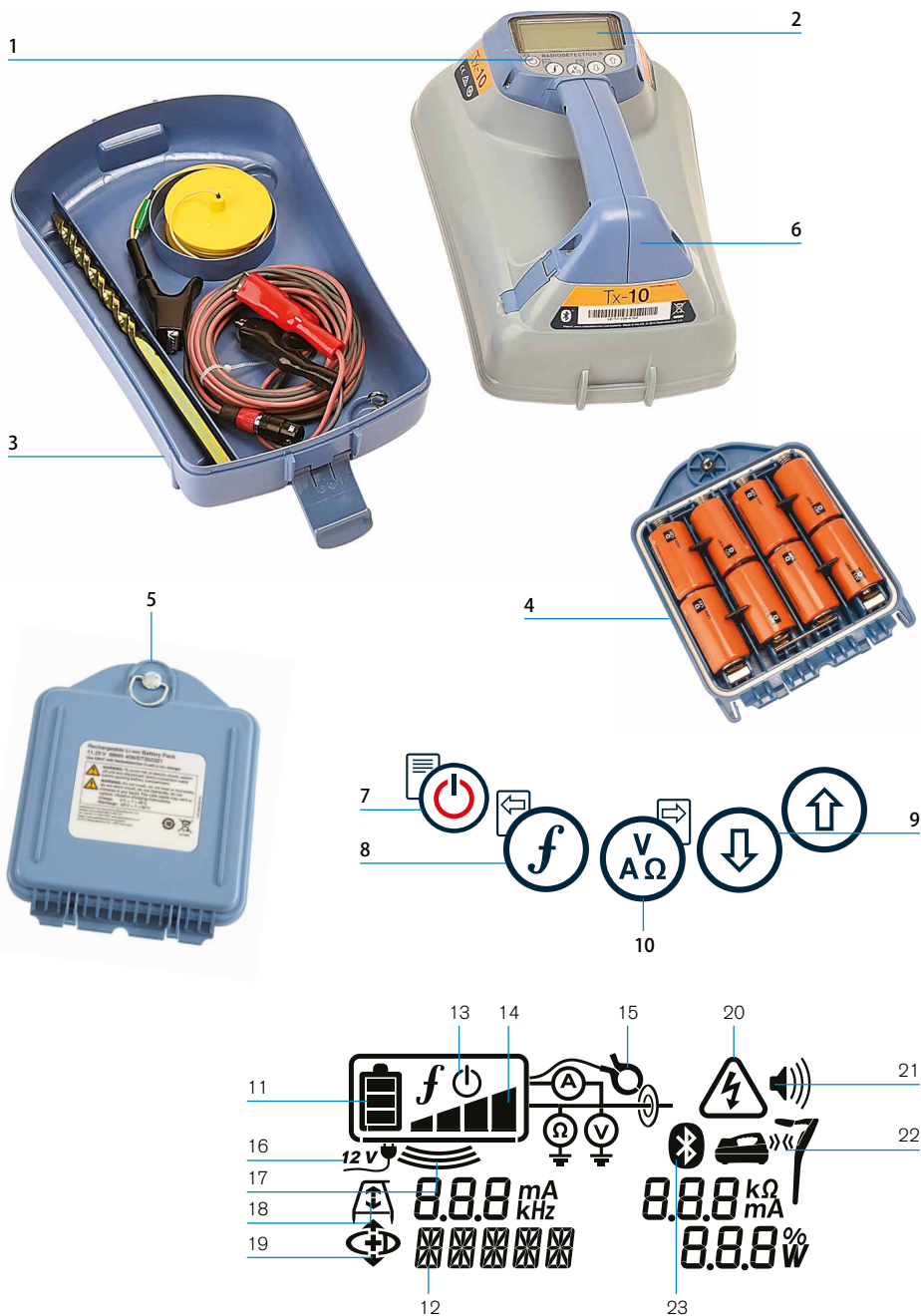
16. 带峰值标识的信号强度图表。
17. 信号强度读数。
18. 谷值/比例导向箭头。
19. 电量图标。
20. 灵敏度读数/日志号。
21. 音量图标。
22. 电流方向箭头。

23. 无线电模式。
24. 电源模式。
25. 配件或测量指示器。
26. CD模式图标。
27. A型图标。
28. 频率/电流/菜单读数。
29. 蓝牙状态图标：
图标闪烁则表示正在进行配对。
若图标常亮，则表示已经建立连接。
30. 天线模式图标：
天线模式选择：
峰值/谷值/宽峰值/峰值+/导向。
31. 探头图标：表示已经选定一个探头信号源。
32. 管线图标：表示已经选定一个管线信号源。
33. 罗盘：表示定位管线或探头与定位仪的相对方向。
34. 发射机通信状态 - 确认iLOC™通信成功。
35. 发射机待机指示器。
36. 深度读数。

仅限带GPS功能的定位仪：

37. GPS状态图标。
38. GPS信号质量图标。

Tx-1、Tx-5和Tx-10发射机



发射机功能

1. 键盘。
2. LCD显示屏。
3. 可拆卸配件盒。
4. 1号电池盒。
5. 可选锂电池组。
6. 蓝牙模块（iLOC设备）。

发射机键盘

7. 电源键。
8. 频率键。
9. 上下箭头。
10. 测量键。

发射机屏幕图标

11. 电池电量图标。
12. 操作模式读数。
13. 待机图标。
14. 输出电压水平指示器。


15. 夹钳图标：表示已连接信号钳或其他配件。
16. 直流电源连接指示器。
17. 感应模式指示器。
18. A型图标：表示发射机处于故障查找模式。
19. 电流方向模式：表示发射机处于电流方向模式。
20. 电压警告指示器：表示发射机的电压水平具有潜在危险性。
21. 音量图标。

仅限带iLOC功能的发射机：



22. 匹配图标：当发射机和定位仪通过iLOC连接时会显示该图标。
23. 蓝牙图标：表明蓝牙连接的状态。若图标闪烁，则表示正在配对。



键盘操作和快捷键

按下  键打开定位仪或发射机。一旦接通电源，按键功能如下：

定位仪按键

按键	● 短按	▬ 长按
	进入菜单	关闭电源
	滚动选择定位频率高低	SideStep™ (参见 ‘iLOC’ 部分) 使用电流方向™时：对电流方向进行重置
	使用有源频率时：切换峰值、峰值+、谷值、宽峰和导向天线模式。 在电力模式下： 滚动电力信号滤波器™以提高对于平行或强电力信号的区分效果	峰值+天线模式： 在导向和谷值箭头间切换
	增加和减少增益。按下按键时RD8100自动将增益设置为中间值	以1dB的增量幅度快速增加和减少增益
	进行探测测量，配对成功后可通过蓝牙发送结果	-
	发送iLOC命令到配对成功的发射机	接通发射机电源，设置菜单以在iLOC上使用

发射机按键

按键	● 短按	▬ 长按
	进入菜单	关闭电源
	滚动选择定位频率高低	-
	利用当前设定的频率测量电压和阻抗	在标准频率下测量电压和阻抗
	调整输出信号	选择待机  / 最大标准电力 

提示：从高到底滚动选择频率时，同时按下  和  按钮（定位仪和发射机均适用）。

在您开始操作之前

请注意！

本指南仅作为快速参考指南使用。我们建议您在操作RD8100定位仪前，先阅读完整的操作手册。

首次使用

RD8100定位仪和发射机可由1号碱性电池、1号镍氢电池或可选配件锂电池组进行供电。

如需在定位仪内装入1号电池，请打开电池盒，插入两个碱性或镍氢电池，注意按照指示将电池对准正极（+）和负极（-）两端。


如需在发射机内装入1号电池，请打开配件盒。电池盒位于发射机机体的下方。用转键打开电池盒。插入八个1号碱性电池或镍氢电池，注意按照指示将电池对准正极（+）和负极（-）两端。

此外，您还可以使用由英国雷迪提供的可选配件适配器从总线或车辆电源对发射机供电。

可充电电池组

定位仪和发射机均可使用锂电池组进行供电，相对于传统碱性电池，锂电池组性能更佳。如需安装这些可充电电池组，请遵照各电池组提供的指示说明。

检测系统软件版本

如需检测定位仪上运行的软件版本，请打开定位仪并按住  键。还可在联系英国雷迪或您当地的技术支持代表时询问版本信息。





发射机在启动时会自动显示其软件版本。

系统设置









进行首次操作之前，您可以根据区域/操作要求和您的个人偏好来设置系统，这一点很重要。您可以使用下面的菜单来设置系统。

设置您的系统

通过RD8100定位仪和发射机菜单，您可以选择或更改系统选项。进入菜单后，会有箭头键来导航菜单。发射机和定位仪上的导航是一样的。在菜单中，屏幕上的大部分图标会暂时消失，在显示屏左下角会出现菜单选项。点击右箭头，将进入子菜单，点击左箭头则会返回到上一级菜单。


请注意，在浏览定位仪菜单时，和键将作为左右箭头使用。当浏览发射机菜单时，和键将作为左右箭头使用。

导航菜单：

1. 按下键进入菜单。
2. 使用或键在菜单选项中滚动。
3. 按下键进入选项的子菜单。
4. 使用或键在子菜单选项中滚动。
5. 按下键确认选择并返回上一个菜单。
6. 按下键返回主操作屏幕。

注意：当您选择某一选项，并按下键时，将自动启用该选项。

定位仪菜单选项

- VOL：在0（静音）和3（最高）之间调节扬声器的音量。
- DATA：删除、发送或审阅所保存的SurveyCERT测量数据，并启用或禁用蓝牙通讯频道。
- BT：启用、禁用、重设或配对蓝牙连接。在接入个人电脑或个人掌上电脑（PDA）时，将确定所使用的协议。
- GPS：启用或禁用内部GPS模块，并且启用/禁用SBAS GPS增强（仅限GPS型号）或选择外部GPS源。
- CDR：电流方向重设。（处于CD模式时，按住键）。
- UNITS：选择公制或英制。
- INFO：进行自检、显示最近重新标定（M CAL）或最近eCert标定的日期。
- LANG：选择菜单语言。
- POWER：选择本地电力网络频率：50或60Hz。
- ANT：启用或禁用任何天线模式，峰值模式除外。
- FREQ：启用或禁用单个频率。
- ALERT：启用或禁用StrikeAlert™。
- BATT：设置电池类型：连接后，碱性电池、镍氢电池、锂电池自动选择。
- ARROW：在峰值+模式中选择谷值或比例导向箭头
- COMP：启用或禁用罗盘功能的显示。

发射机菜单选项








- VOL：在0（静音）和3（最高）之间调节扬声器的音量。
- FREQ：启用或禁用单个频率。

- **BOOST**: 在规定的时间内（按分钟记）增强发射机的输出功率。
- **LANG**: 选择菜单语言。
- **OPT F**: 运行SideStepauto™，自动选择所连接公用设施的定位频率。
- **BATT**: 设置电池类型：碱性电池、镍氢电池或锂电池，并且启用/禁用Eco模式。
- **MAX P**: 设定发射机最大输出功率。
- **MODEL**: 设定发射机，使其与您的定位仪型号相匹配。
- **MAX V**: 将输出电压设定为最大值90V。
- **BT**: 启用、禁用或配对蓝牙连接（仅限蓝牙型号）。

菜单使用、选项选择以及更改操作示例：

定位仪主电源频率







请选择您所在国家或地区合适的电源频率（50或60Hz）：

1. 按下  键进入菜单。
2. 使用  或  键滚动至电源菜单。
3. 按下  键进入电源菜单。
4. 使用  或  键选择合适的电源频率。
5. 按两次  键以确认您的选择，然后返回到主操作屏幕。

电池











应使系统的设置与当前安装的电池类型相匹配，确保设备最佳性能和正确的电量显示，这一点很重要。

若要设置您的电池类型，请按照以下步骤操作：

1. 按下  键进入菜单。
2. 使用  或  键滚动至BATT菜单。
3. 按下定位仪上的  键或发射机上的  键进入BATT菜单。
4. 向上或向下滚动，选择正确的电池类型（碱性电池、镍氢电池或锂电池）。当锂电池组连接到接收机，锂电池自动被选。
5. 按两次  键以确认您的选择，然后返回到主操作屏幕。

发射机Eco模式

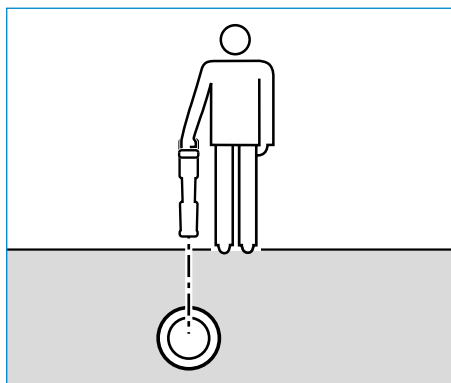
使用碱性电池时，可以选择Eco模式来提高电池的使用时间。选择Eco模式时，当电池不能再提供足够电力时，发射机会自动降低其最大输出功率。环保模式默认为关闭。若要启用环保模式，请按照以下步骤操作：

1. 按下  键进入菜单。
2. 使用  或  键滚动至BATT菜单。
3. 按下  键进入BATT菜单。
4. 使用  或  箭头选择碱性电池类型。
5. 按下  键进入ECO子菜单
6. 使用  或  箭头选择ECO。
7. 按三次  键以确认您的选择，然后返回到主操作屏幕。

定位管道和线缆










如欲了解更多有关定位仪和发射机的使用说明以及详细的定位技术信息，请参考操作手册。

RD8100定位仪主要运用定位仪‘叶片’，使其垂直于被定位的线缆或管道进行工作。








运行自检

建议至少每周或每次使用之前对设备进行一次自检，自检主要检测定位电路的完好性，因此自检时应远离大型金属物体，例如车辆或强电力信号，这一点尤为重要。若要运行自检功能，请按照以下步骤操作：

1. 按下  键进入菜单。
2. 使用  或  键滚动至INFO菜单。
3. 按下  键进入INFO菜单。
4. 使用  或  箭头选择TEST。
5. 按下  键选择“YES”
6. 按下  键开始自检
7. 一旦完成自检，结果（通过或失败）将显示在屏幕上。
8. 使用  键重新启动定位仪

SideStepauto™

通过测量目标线缆或管道的阻抗，发射机可为定位任务提供通用定位频率。如要运行 SideStepauto™，请将发射机连接到目标公用设施，然后按照以下步骤操作：

1. 按下  键进入菜单。
2. 使用  或  键滚动至 OPTF 菜单。
3. 按下  键选择 “START”。
4. 按下  键启动检测功能。发射机将自动选择通用频率并应用于已连接的公用设施。

有源频率定位

有源频率系通过发射机直接将频率应用于目标管道或线缆，并为追踪埋设管道或线缆提供最有效方式。

一般来说，在大型低阻抗公用设施上最好使用低频，而在较小的高阻抗公用设施上使用高频。

请务必使用最低功率追踪目标公用设施以尽可能降低追踪错误路线的风险。

发射机可通过以下三种方法发出信号：

直接连接

在直接连接中，您可以使用所配的红色直连导线，将发射机直接连接到您希望探测的管道或线缆。黑色导线一般通过配备的接地棒与地面连接。

然后，发射机将向线路发出离散信号，您可以利用定位仪追踪到该信号。该方法提供了单独线路上的最佳信号，可以使用较低的频率，并可在较长的距离上追踪到该频率。

 **警告！** 与带电导体直连可能具有致命危险。与带电导体的直接连接仅应由具有充分资质的人员操作，并仅使用允许和通电路路连接的相关产品

感应

将发射机置于地面上探测区域的上方或附近。您可以选择适当的频率。然后，发射机将把信号随机地引向附近的任何金属导体。在感应模式下，通常建议使用高频，因为这样更容易引向附近的导体。

发射机夹钳

可以使用选配的信号夹钳，将发射机的信号施加于绝缘带电导线或直径最大8.5英寸/215毫米的管道，并传输到公用设施。这种发射机信号传输方法对绝缘带电导线十分有效，且无需断开线缆的电源。

 **警告！** 不要将夹钳用于非绝缘的带电导体。


 **警告！** 将夹钳用于电源线缆或从电源线缆上移除夹钳之前，应确保夹钳始终与发射机相连。

无源频率定位

无源频率探测系利用埋设金属导体上已有的信号进行探测。RD8100支持探测四种类型的无源频率：电力、无线电、CPS*以及有线电视 (CATV) *信号。无需发射机的协助，您就可以探测到这些频率。

*依具体型号而定。


电力信号滤波器


RD8100定位仪允许操作人员利用电力网络上产生的谐波信号进行探测。进入电源模式后，按下  键切断英国雷迪灵敏的电源模式，并滚动选择五个独立的电力信号滤波器。这样可以帮助操作人员确定单一的强电力信号是来自单一线缆还是来自多条线缆。然后，根据检测到线路的不同谐波特性便可以追踪和标记线路。



此外，在对于其他探测方式而言总信号过强的情况下，使用单独谐波能够帮助您准确定位线缆线路。


定位模式


RD8100具有5种定位模式的选择，针对于不同的工作，每种定位模式都有其具体用途。


按下  键，在不同的定位模式之间滚动。

 **峰值：** 主要用于精确定位，峰值条形图清楚呈现信号强度。在埋设公用设施的正上方会显示峰值信号。

 **峰值+：** 此模式可将精确的峰值条形图与谷值箭头结合以检测出失真现象，或与比例导引箭头结合使用以快速追踪线路，通过按住  键可在二者之间进行切换。

 **导向：** 将比例导向箭头和弹道‘指针’与左/右音频指示信息相结合，用于快速追踪埋设公用设施的总体路径。

 **窄峰值：** 运行方式与峰值模式类似，但能够给出更大区域范围的探测结果。主要用于检测和追踪极其微弱的信号，例如埋设极深的公用设施。

 **谷值：** 快速显示公用设施路径的左/右指示信息。由于谷值易受到干扰，因此，最好在无其它公用设施的区域内使用。

深度、电流和罗盘读数

 **警告！** 请勿将测量深度作为机械作业或其它挖掘工作指南使用。
请始终遵守安全挖掘指南。

RD8100定位仪可测量并显示公用设施的深度、定位信号电流以及线缆或管道与定位仪的相对方位。这样可确保您追踪到正确的目标线缆或管道，尤其在有其它公用设施的环境下。

RD8100定位仪具有TruDepth™功能，该功能可以确保您的定位或探测测量值的准确性。当定位仪与定位线缆或管道路径所成角度超过7.5°，或当定位仪确定信号条件太差无法进行可靠测量时，显示器会自动清除深度和电流数据。

电流方向（CD）

Tx-10(B)发射机用于将一个专用的电流方向信号导入管道或线缆。该信号可在大量平行公用设施中追踪单个管道或线缆，确保操作人员追踪到正确的目标线路。电流方向信号夹钳或直连导线可将专用信号导入管道或线缆，还可使用电流方向定位仪夹钳或电流方向听诊器来识别单个管道或线缆。

使用配件

定位仪和发射机与大量的配件兼容。有关使用以下任何配件的详细信息，请参考RD8100定位仪操作手册。

发射机信号夹钳

当无法直接连接到管道或线缆时，或不宜使用感应模式时，可使用发射机信号夹钳。将夹钳插入发射机的输出口，就可以将定位信号施加于绝缘带电导线。这对带电绝缘线缆而言尤为有用，因为不需要再关闭电源和断开线路。

 **警告！** 不要将夹钳用于非绝缘带电导体。

 **警告！** 将夹钳用于电力线缆或从电力线缆上移除夹钳之前，应确保夹钳始终与发射机相连。

若要定位或确认单个线路，可以将信号夹钳和定位仪的配件插座相连，并夹在单个管道或线缆上。

听诊器和定位仪信号夹钳

定位仪夹钳通过检查最强的定位信号，可在若干不同线缆之中找到目标线缆或管道。当线缆成束或紧扎在一起时，可能无法使用夹钳，这时应使用听诊器天线来追踪线缆。

若要使用听诊器或定位仪信号夹钳，应将其与定位仪的配件插座相连。然后定位仪将自动检测装置，并过滤无关的定位模式。

探头、Flexrods以及 FlexiTrace

探头是一种由电池供电的发射机，适合于追踪非金属管道。可将其固定在Flexrods上以推送至管道或导管，且其中有一些还可以吹送至整个管道系统。RD8100可以探测到多种探头频率，包括由flexiprobe™ P540c 推杆系统以及 flexitrax™ P550c 牵引探头发射的频率。

有关定位探头的详细指南，请参考操作手册。

FlexiTrace是一种可追踪的玻璃纖維杆，内置线缆导体，末端配有探头。FlexiTrace与发射机的输出端口相连，通常用于定位小口径非金属管道。用户可以选择定位线缆的整个长度，或仅定位线缆的末端。

FlexiTrace的最大额定功率为1W。当FlexiTrace与英国雷迪Tx-5(B)或Tx-10(B)发射机一起使用时，MAX P菜单中的输出限制必须设为1W，MAX V菜单中的输出电压限制必须设为LOW（低）。

Tx-1发射机无设置要求。

利用A字型进行故障查找

RD8100 PDL和PTL型号能够利用A字型配件准确探测线缆或管道护套的缺陷。因线缆护套受损致使信号传向地面，这样的故障信号可被Tx-5（B）或Tx-10（B）的A字型探测到。

可用发射机的万用表功能测量所连接管道或线缆的阻抗，从而查明故障性质。

有关故障查找的详细指导，请参考操作手册。

插座/带电线缆连接器

插座连接器与发射机的输出端口相连，将信号导入线路，并从本地电源插座到街道的供电线缆中追踪该信号。

带电线缆连接器可用于将信号导入带电线缆。仅具备恰当资质的人员才能使用本设备。

水下倍深天线

该天线与定位仪相连，用于定位水下深至100米/300英尺的管道和线缆。

 **警告：**水下天线仅可由具备充分许可和经验的人员在完整阅读操作手册后使用！

RD Manager电脑软件

RD Manager是RD8100定位仪系统的电脑配套软件，可以让您管理和自定义您的定位仪。RD Manager同样可用于检索和分析探测与使用数据、运行eCert校准、进行软件升级等。

您可以使用RD Manager来注册您的产品，获得两年延长质保，并通过执行一系列维修任务，例如调整日期和时间、激活和撤销当前有源频率，或通过设置功能，诸如CALSafe或StrikeAlert来设置您的定位仪。

RD Manager 与运行 Microsoft Windows 64 位操作系统的电脑兼容。如需下载 RD Manager，请访问网站 www.radiodetection.com/RDManager。

如果您尚未连网或希望获得CD-ROM格式的RD Manager，请您联系当地的英国雷迪办公室或代表人员。

如需了解更多有关RD Manager的信息，请参考RD Manager操作手册。

蓝牙无线连接







RD8100定位仪的标配包含蓝牙无线模块，能够和兼容设备相连，例如发射机（Tx-5B或Tx-10B型）、个人电脑、笔记本电脑或运行兼容程序的手持设备。

注意：RD8100定位仪无线功能需要遵守本国或当地规定。请咨询您当地部门了解更多信息。

 **警告！** 不要在无线连接技术可能存在危险的区域使用该连接。这些区域可能包括：石化设施，医疗场所或导航设备周围。

打开蓝牙

RD8100定位仪和配有蓝牙功能的发射机在运送时已默认禁用蓝牙无线连接模块。

1. 按下  键进入菜单。
2. 使用  或  键滚动至BT菜单。
3. 按下  键（定位仪）或  键（发射机）进入BT菜单。
4. 上下滚动至ON选项。
5. 按下  键，打开蓝牙，返回上一个菜单。

您可以关闭蓝牙以延长电池寿命，或在将无线连接视为危险的区域遵守相关规范。要关闭蓝牙，请遵照上述操作过程，在BT菜单中选择‘OFF’按钮。

与PDA或电脑配对

连接要求：







- 任何RD8100定位仪。
- 兼容的启用蓝牙功能的PDA或个人电脑或笔记本电脑。

注意：下面的流程描述了RD8100定位仪与PDA之间的配对过程。RD8100定位仪与个人电脑的配对步骤相同，而个人电脑或笔记本电脑配对设置与PDA步骤类似。有关和RD8100定位仪配对的方法，请查阅您的个人电脑或笔记本电脑的蓝牙配对说明。

请使用您的PDA蓝牙软件来配对RD8100定位仪和您的PDA。

注意：根据具体的PDA构造和型号，和您PDA配对的程序可能不尽相同。以下程序适用于大多数PDA。

在定位仪上：

1. 按下  键进入菜单。
2. 使用  或  键滚动至BT菜单。
3. 按下  键进入BT菜单。
4. 上下滚动至PAIR菜单。
5. 按下  键进入PAIR菜单。
6. 上下滚动至BT-PC选项。
7. 按下  键，定位仪将尝试与您的PDA连接。


在您的PDA上：

8. 从PDA的Start（开始）菜单，选择Settings(设置)，然后选择Connections Tab（连接选项卡），然后选择Bluetooth（蓝牙）图标。
9. 请确保打开蓝牙无线电，使PDA对其它设备可见。
10. 选择Devices（设备）选项卡，扫描新的匹配对象。
11. 建立与RD8100_XXXX设备的连接。
12. 如果询问密码，则输入1234。
13. 如果您的PDA需要，请参考SurveyCert手册了解高级设置。

重设连接

若您遇到有关RD8100蓝牙功能的问题，英国雷迪公司建议重设连接，然后再次配对您的设备。

1. 按下  键进入菜单。
2. 使用  或  键滚动至BT菜单。
3. 按下  键进入BT菜单。
4. 上下滚动至RESET菜单。

5. 按下  键，定位仪将清除所有当前连接。
6. 重新配对您的设备。

蓝牙错误代码

若使用定位仪向发射机或个人电脑或PDA执行蓝牙命令时出现错误，则LCD屏将显示错误代码以帮助您解决定位仪上所出现的问题。

代码如下所示：

BT 代码	说明
BT001	本装置未配置蓝牙
BT002	内部蓝牙错误
BT003	定位仪未与发射机配对
BT004	定位仪未与个人电脑/PDA配对
BT005	已配对但连接失败。可能需要重启
BT006	从发射机中收到的响应已损坏
BT007	从发射机收到的响应不确定
BT008	未从发射机收到任何响应
TX??	发射机无法调整至请求的频率


测量数据

RD8100型号定位仪能够记录多达1000条测量数据，并且可通过蓝牙选择性地将它们发送到外部设备。

如果定位仪为GPS型号，或通过GPS与运行SurveyCERT等兼容程序的PDA已配对，定位仪将在数据的时间与日期旁边添加位置数据，提供空间信息。

注意：需要打开内部GPS模块，并与GPS卫星系统连接。

保存测量数据

若要保存测量数据，按下  键。






若要获得准确的结果，在保存过程中，必须尽量保持定位仪的静止状态。

定位仪始终会将测量数据保存到内存存储器中。如果打开蓝牙，与某设备配对，并启用BT-PC，则定位仪还会尝试将保存的测量数据发送给运行SurveyCERT的配对PDA，或运行兼容程序的个人电脑。

删除测量数据

RD8100定位仪允许您删除所有测量数据。若删除日志，将清除RD8100内存，通常建议您在开始新探测的时候这样做。

注意：删除测量数据无法恢复！

1. 按下  键进入菜单。
2. 按下  或  键以选择LOG菜单。
3. 按下  键进入LOG菜单。
4. 上下滚动以选择DEL选项。
5. 按下  键进行选择，并返回到主菜单。

发送存储的数据到配对的PDA或个人电脑：






储存的数据可以无线转移到运行英国雷迪SurveyCERT程序的兼容PDA上，或装有兼容程序的PDA或个人电脑上。

SurveyCERT

SurveyCERT为英国雷迪公司推出的PDA应用程序，令实地探测人员的公用设施绘图更为轻松简单。

您可使用SurveyCERT将定位仪的探测数据存入PDA，供日后查看。SurveyCERT的PDA程序及其操作手册可在英国雷迪公司的网站上免费下载。

发送存储的数据至配对的PDA或个人电脑：

1. 确保已打开您配对的PDA，并运行SurveyCERT程序。
2. 按下  键进入菜单。
3. 使用  或  键滚动至LOG菜单。
4. 按下  键进入LOG菜单。
5. 上下滚动至SEND选项。
6. 按下  键，定位仪将尝试把您存储的测量数据发送至您的PDA。

还可以使用USB连接将存储的探测数据转移到RD Manager，由软件的内置SurveyCERT功能进行分析。有关如何提取存储测量数据的更多信息，请参考RD Manager操作手册。

RD Manager的SurveyCERT功能可用于后期探测分析以及与谷歌地图的对接，并可轻松导出至地理信息系统/地图系统。

自动记录使用数据

配备GPS的RD8100定位仪提供了一个强大的数据记录系统，该系统记录所有关键参数（包括GPS位置，若可用）以及内存中的所有警告，记录频率为每秒一份。

自动记录系统始终打开，无法禁用。如果按每天使用8小时来算，接收机的内存可存储500天以上的使用数据。

可使用RD Manager的个人电脑程序来提取日志，以进行使用分析和探测验证。欲了解更多运行相关信息，请参考RD Manager操作手册。

GPS

RD8100定位仪可与外部GPS模块配对，或使用其内部GPS模块（仅限GPS型号）来探测并存储其纬度、经度以及精确的UTC时间和位置数据。然后，可将该位置信息添加到测量数据或自动使用记录系统。

利用GPS数据，能够轻松地对数据进行测绘、导出，并将信息直接存入地理信息系统。

GPS菜单设置

GPS菜单中有5个选项：

- INT：选择该选项来使用内部GPS（若有）。
- EXT：选择该选项，从兼容的配对设备中使用GPS。
- OFF：选择该选项，以关闭内部GPS模块，保存电力。
- SBAS：设定SBAS（卫星增强系统）模式，来提升GPS精度。在打开状态时，GPS系统需要较长的时间来锁定。
- RESET：选择“YES”，以重设内部GPS（仅限GPS型号）。

iLOC

iLOC可以让您利用RD8100定位仪来远程控制发射机。利用iLOC，您可以调整输出频率、进行电源设置并使用SideStep。iLOC命令通过蓝牙模块发送，蓝牙模块可在450米/1400英尺的直线距离内工作。

iLOC是所有RD8100型号定位仪的标准功能，并且需要使用配备蓝牙功能的发射机（Tx-10B或Tx-5B）。

注意：在建设区域和电磁干扰较大的区域内使用，可能会降低iLOC的性能。

与发射机配对

须使用配备蓝牙功能的发射机才能实现配对，例如Tx-5B或Tx-10B。

在开始前，应关闭附近的所有蓝牙设备，因为这些设备可能会干扰到定位仪和发射机的配对过程。

在定位仪上：

1. 按下  键进入菜单。
2. 使用  或  键滚动至BT菜单。
3. 按下  键进入BT菜单。
4. 滚动至PAIR菜单，并按下  键进入。
5. 滚动至BT-TX选项。



注意：请务必在90秒内完成配对以防定位仪的蓝牙连接超时。


在发射机上：

6. 按下  键进入菜单。
7. 使用  或  键滚动至BT菜单。
8. 按下  键进入BT菜单。
9. 滚动至PAIR选项。

»«

开始配对过程：

10. 按下发射机上的  键，接着按下定位仪上的  键。
11. 发射机和定位仪将开始尝试配对。

在配对过程中，发射机和定位仪上的蓝牙图标会闪烁。配对最多需要一分钟时间。如果配对成功，发射机将显示  图标，而在连接期间定位仪的蓝牙图标也会常亮。

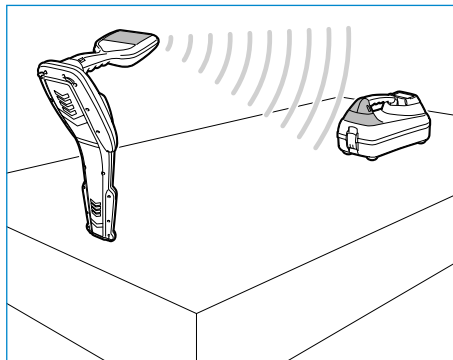
如果配对失败，应确保关闭附近的任何蓝牙设备，或使其不可见，然后重复配对过程。

当定位仪和发射机成功配对后，您可以使用iLOC，从定位仪来远程更改发射机的输出频率和功率级别。

使用iLOC

若要使用iLOC，定位仪和发射机须成功配对。要实现最佳性能：

- 尽量避免视线内有任何障碍物。
- 若可能，将发射机提升至离地面30-60cm（1-2英尺）处。
- 将发射机的后端对准定位仪。
- 将定位仪的屏幕对准发射机。



注意：若iLOC命令失败，应尽量靠近发射机，然后重复该过程。

更改频率

当发射机和定位仪配对后，您可以利用定位仪来远程更改发射机的输出频率：

1. 在定位仪上，按下 **(f)** 键，选择您想要的频率，直到屏幕显示该频率。
2. 按下 **(Tx)** 键，将新频率发送至发射机。
3. 若传输成功，定位仪将立即显示SEND，然后显示“OK”。
4. 若传输失败，定位仪将显示蓝牙错误代码。

若该过程失败，可能是因为您超出了范围或连接中可能存在错误。

尽可能靠近发射机，然后重试该过程。若仍然无法连接，则返回到发射机并重设连接。

调整功率

通过iLOC，您可以远程调整发射机的功率输出；您还可以将发射机设为待机模式，然后远程激活发射机。

1. 发射机的功率选项位于定位仪的TXOUT菜单中。
按住 **(Tx)** 键直至显示TXOUT菜单。
2. 按住 **(⊕)** 键进入功率级别菜单。
3. 使用 **(↑)** 或 **(↓)** 键在功率输出选项中上下滚动，选择：
 - STDBY：发射机待机模式，连接仍正常，但输出被禁用，以延长电池寿命。
 - LOW：低功率输出。
 - MED：中功率输出。
 - HIGH：高功率输出。
 - BOOST：临时将发射机功率输出增至最大值。
4. 当您选好您想要的模式后，请按下 **(f)** 键确认。

5. 按下 **(Tx)** 键，选择新设置，然后退出菜单。
6. 按下 **(Tx)** 键，将设置发送到发射机。

注意：利用iLOC更改发射机频率时，将保留所选的发射机功率设定。

SideStep

通过SideStep，您可以更改发射机上的输出频率。SideStep可以将所选频率更改多个赫兹，并自动设置定位仪的定位频率，以与发射机的输出频率匹配。

1. 在定位仪上，按下 **(f)** 键，选择您想要的频率，直到屏幕显示该频率。
2. 若要更改频率，请按住 **(f)** 键直至LCD上出现STEP。
3. 按下 **(Tx)** 键，将SideStep命令发送至发射机。
4. 若命令发送成功，定位仪上频率旁将显示星号 (*)，并且发射机频率下方将出现STEP。
5. 若要返回至标准定位频率，请按住 **(f)** 键。当星号 (*) 从显示器上消失，按下 **(Tx)** 键，将该命令发送至发射机。

CALSafe

当配备GPS的RD8100型号定位仪超过既定维护/标定日期时，经启用的CALSafe系统将不允许该定位仪继续工作。

在维护截止日期30日内，该功能将在设备启动时显示剩余天数。定位仪将在既定维护截止日期停止工作。

默认关闭CALSafe系统。您可以激活CALSafe功能，并使用RD Manager个人电脑软件编辑CALSafe的维修/标定截止日期。有关更多详细信息，请参考RD Manager操作手册。

培训

英国雷迪公司为大多数雷迪产品提供培训服务。我们有资质的指导人员将在您偏好的地点或英国雷迪公司总部对设备操作人员或其他人员进行培训。有关更多相关信息，敬请访问www.radiodetection.com，或联系您当地的英国雷迪公司代表。

维护和保养

RD8100定位仪和发射机功能强大、持久耐用，并不受气候影响。但您还可以通过遵循以下维护与保养指南，来延长您设备的使用寿命。

一般要求

将该设备存放在清洁干燥的环境中。

确保所有终端和连接插座清洁、无污物、无腐蚀且未损坏。

当本设备受损或有故障时请勿使用。

电池和供电

仅允许使用英国雷迪公司批准的可充电电池组、充电器以及电源。

若未使用可充电电池组，则仅允许使用优质的碱性电池或镍氢电池。

应根据贵公司的工作规范，以及/或贵国家的相关法律或准则来处理电池。

清洁

 **警告！** 当本设备通电或连接到任何电源时，包括电池、适配器以及带电线缆，不要尝试清洁本设备。

尽可能确保本设备清洁、干燥。

请使用柔软湿润的布料清洁本设备。不要使用研磨材料或化学物质，因为这些物质可能损坏外壳，包括反光标签。不要使用高压水流清洗设备。

若在污水系统中或可能存在生物风险的其它区域内使用本设备，请使用恰当的消毒剂。

软件升级

英国雷迪公司可能会不时发布软件升级以增强功能，并提高RD8100定位仪或发射机的性能。软件升级是免费的，且软件的升级将通过RD Manager个人电脑软件提供。

新软件版本的电子邮件提醒和通知会发送给所有注册用户。您也可以通过RD Manager软件升级界面检查您的产品是否为最新版本或对其进行升级。

注意：若要升级您产品的软件，您需要使用RD Manager创建一个账户，并连接在线网络。此外还可能需要选配的雷迪电源来更新您的发射机软件。

拆卸

在任何情况下都不要试图拆卸本设备。定位仪和发射机不包含用户可维护零件。

未经批准的拆卸将导致制造商的质保失效，并且可能会损坏设备或降低设备性能。

维修和维护

使用自检功能和eCert定期检查您的设备是否运转正常。

定位仪和发射机在设计上是不需要定期标定的。然而，和所有安全设备一样，建议每年至少在英国雷迪公司或其批准的维修中心对设备进行一次维修和校准。

注意，若由未经批准的维修中心维护，可能导致制造商的质保失效。

英国雷迪公司办公室和经销合作伙伴的详细信息可登录www.radiodetection.com进行查找。

英国雷迪公司的产品（包括本指南）均在不断的开发之中，因此会在不预先通知的情况下作出变更。有关RD8100定位仪或任何雷迪产品的最新信息，请访问www.radiodetection.com或联系您当地的英国雷迪公司代表。

Visit www.radiodetection.com

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