BlackBerry Radar

BLACKBERRY RADAR B ITJ100-1

December 2023

Container

Installation Guide

Table of contents

1 Overview

This guide provides detailed instructions for installing and activating new BlackBerry Radar B modules. It includes two main tasks:

Task 1: Get ready for installation (see Section 2)

Task 2: Install a BlackBerry Radar B (see Section 3)

- Match the module identifier with the asset identifier on the installation worksheet.
- Install the module onto the asset.

Complete BlackBerry Radar documentation is available online when you log in to BlackBerry Radar Dashboard. For instructions on how to configure the BlackBerry Radar Dashboard or how to activate newly installed devices, see the online documentation.

2 Get ready for installation

To get ready for installation, you need to obtain a worksheet where you can record the pairing of each BlackBerry Radar B module to its asset (that is, the trailer/container that the module will be installed on).

For detailed instructions, log in to the BlackBerry Radar Dashboard and access documentation from the main menu.

3 Installing BlackBerry Radar B modules

You may have a large number of BlackBerry Radar B modules to install. Follow the instructions in this section to:

- Match each module identifier to its asset identifier
- Install the module to the asset you wish to track.

3.1 Prepare to install

To complete the installation of the module to your assets, you will need the following components. The following components are contained in the module packaging.

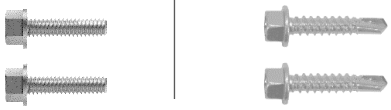
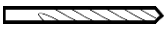
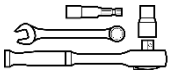
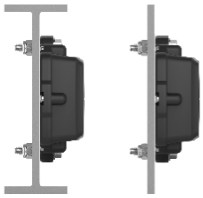
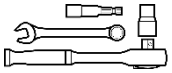
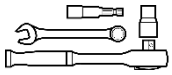
Radar B Module Package Contents

<table>
<tr><td colspan="2">Radar B Module
 
</td></tr>
<tr><td>x3 AA Energizer Ultimate Lithium L91 Batteries
(Installed in device)
 
</td><td>6 Screws
(Installed on device)
  </td></tr>
</table>

If you are missing any of the above components in your package, contact your BlackBerry Sales Representative.

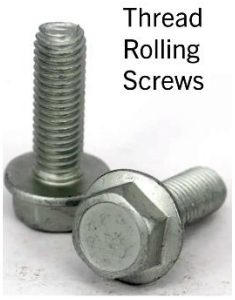
To attach the module to the asset you wish to track, you must supply your own fasteners. Depending on the construction of your mounting location, you may wish to use the following types of fasteners. Please Note: Your choice of fastener will influence the size of the tools required to create the mounting holes (i.e. drill bits) and install or remove the fasteners (i.e. wrenches/sockets/drivers). An example of this is provided below. The actual length of the fasteners will be determined by the thickness of your mounting surface.

<table>
<tr><td colspan="2">IMPORTANT: The maximum fastener thread diameter supported by this product is 3/16” (5mm).

#10 (i.e., #10-24 or #10-32) or M5 Fasteners, are recommended.</td><td> 
</td></tr>
<tr><td>Box Section
(+3mm wall thickness)
  </td><td>A) 2 thread rolling screws or B) 2 self-tapping screws
(5/16” head, #10-32 thread, 3/4” length)
(5/16” head, #10-16 thread, 1" length)
 
*For installation in narrow clearance areas, blunt-ended screws--like thread rolling screws--are recommended.</td><td>Drill Bit
  A) 11/64” (4mm)
  B) 5/32” (4mm)
Nut Driver/Socket/Wrench
  5/16” (8 mm)</td></tr>
<tr><td>I Beam/Panel Section
(with rear access)
  </td><td>2 hex bolts, nylon lock nuts, and 4 washers
(5/16” head, #10-24 thread 1” length I #10-24 nut, 3/8” width)
(8mm head, M5 x 0.8 thread, 25mm length I M5 x 0.8 nut, 8mm width)
  </td><td>Drill Bit
  3/16” (6mm)
Nut Driver/Socket/Wrench
  5/16” (8mm)
  3/8” (10mm)</td></tr>
</table>

Fastener selection considerations—Thread rolling screws

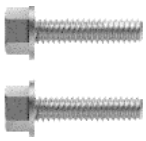
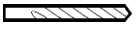
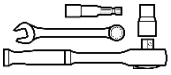
You may also wish to install your BlackBerry Radar B on your container and you may not have simultaneous access to both sides of your device to securely install the fastener without a partner. To support one-person installation, in this scenario, we recommend using thread rolling screws.



Thread rolling screws create their own threads within the thickness of the asset's installation surface. These threads allow the device to be secured to the asset, without the use of a secondary fastener, like a lock nut (although some thread rolling screws can be used with some lock nuts, for extra holding opportunity).

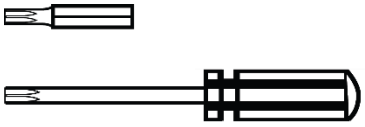
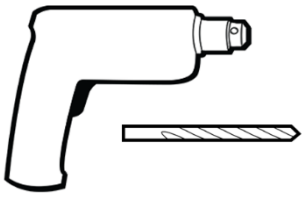
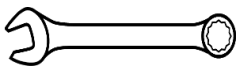
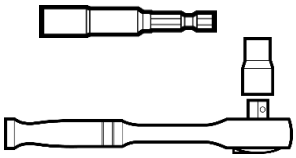
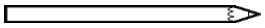
As you will need to supply the fasteners, the length of the thread-rolling screw will be determined by the depth of the installation surface and the depth of the Radar B Mounting flange. The drill bit diameter will also be determined by the thread diameter of the selected fastener. REMEMBER: the diameter of the hole drilled into the installation surfaces must be smaller than the fastener's thread diameter. Below is an example.

IMPORTANT: The maximum fastener thread diameter supported by this product is 3/16" (5mm). #10 (i.e., #10-24 or #10-32) or M5 Fasteners, are recommended.	

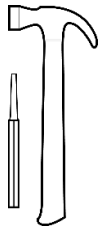
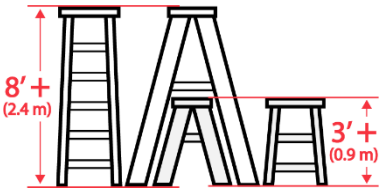
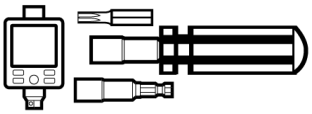
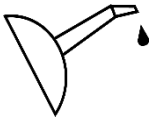
Container Walls	2 Thread Rolling Screws (5/16" head, #10-32 thread, 3/4" length) (8 mm head, M5 x 0.8 thread, 19mm length)	Drill Bit
		 11/64" (4 mm) Nut Driver/Socket/Wrench  5/16" (8mm)

3.2 Installation tools

Required tools to complete the installation:

Torx (T15) or Hexalobular (X15) Screwdriver or Bit 	**Drill and Drill Bits** 	**Wrench**  *Required only if nuts and bolts are used.
Nut Driver or Socket Wrench with Socket*  *Nut Driver + Drill offers fastest installation. If no Nut Driver is available, a socket wrench and socket may be used as a substitute.	**Safety Glasses** 	**Pencil or Pen** 

Recommended tools to complete the installation:

Pocket Level 	**Towel** 	**Hammer and Punch** 	**Ladders***  *Tall ladder for installation on taller vehicles and containers. Small ladder for installation inside of containers or the exterior of smaller vehicles.
Torque Screwdriver/Adapter with Socket and Bits* (scale range of 0.4 N-m to 4.5 N-m, 4 in-lb to 40 in-lb)  *To check compliance with torque specifications for fasteners.		**File** 	**Cutting Lubricant* (Recommended)**  *Recommended for faster drilling speed on thicker metals and longer drill bit life.

3.3 Matching a module identifier to an asset identifier

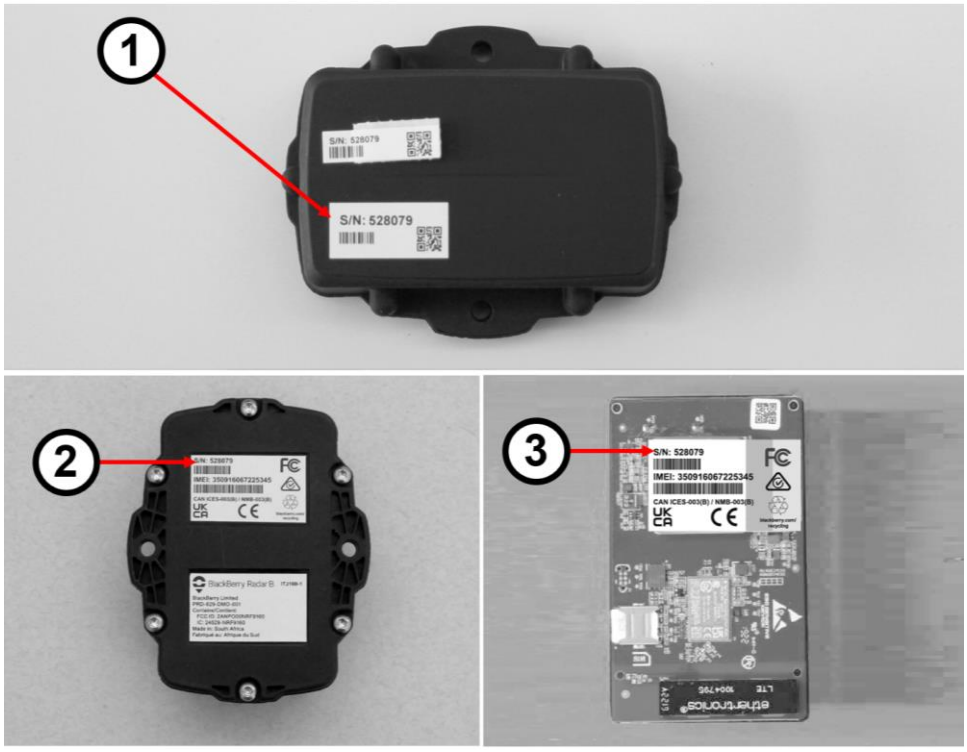
In order to track an asset, the Radar B module that is installed on the asset must be associated with the asset in the BlackBerry Radar Dashboard. It is, therefore, very important to keep a clear record of which module is installed on which asset.

The Dashboard application tracks modules and assets using 'identifiers'. The asset identifier is the name or number of the asset you wish to track. The asset identifiers are entered into the application when you add the assets and will be listed on your installation worksheet. The identifier for each Radar B module is printed on three labels—one attached to the PCB, outer housing, and the battery door. The module identifier also serves as the serial number (S/N) for the module.

To match a module identifier with an asset identifier:

Locate the module identifier for your device. The module identifier is shown in three places.

1. External Placement—Temporary S/N label and Permanent S/N label, attached to the side of the outer housing.
2. External Placement—Certification Label attached to the rear of the device.
3. Internal Placement—Permanent main product label, attached to the PCB.



Once you are ready to install the module to the asset, remove the partially attached label from the front surface of the inner housing and place it on your worksheet, next to the asset identifier the module will be paired with.

3.4 Module installation

You may install the module on any flat, vertical or horizontal surface that offers enough mounting area for the module. When selecting a mounting location, carefully consider how the asset will be used during its normal, day-to-day operation.

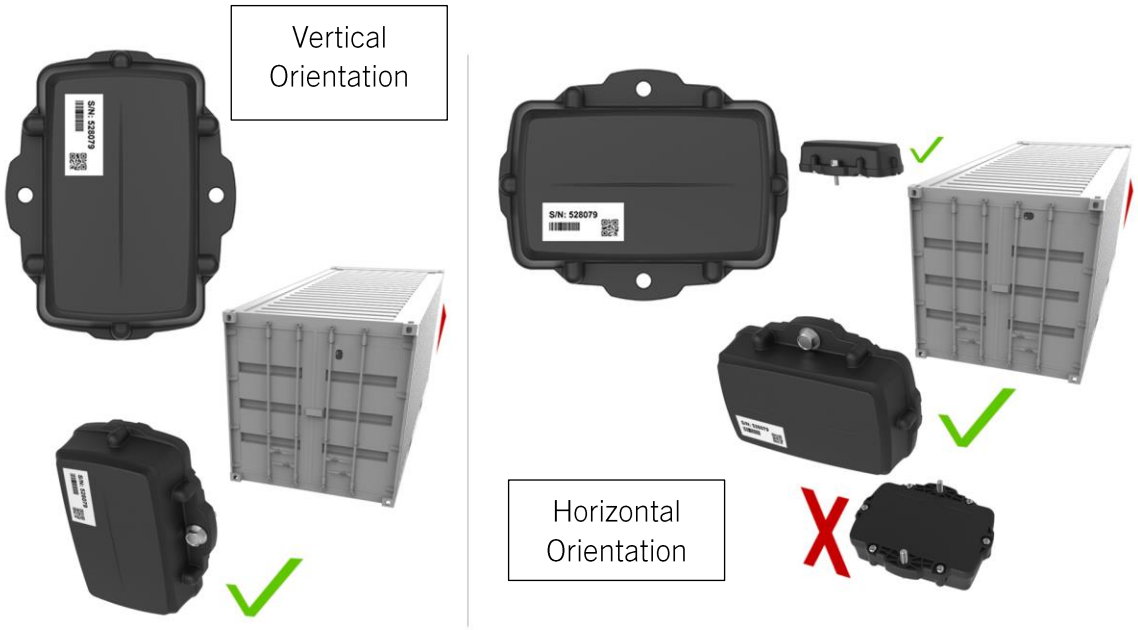
Avoid installing the module inside a completely enclosed metal box.
Avoid installing in a location that will result in elevated temperatures

Do not place the module in a location where it is susceptible to damage from:

- Normal usage activities, such as loading or unloading cargo.
- Moving parts of the asset.
- Road debris.

IMPORTANT: For accurate tracking, orientation matters.

1. You may install the module horizontally or vertically.
2. Full 360° rotation around vertical axis are supported.
3. You may also rotate the module 90 degrees along the horizontal axis, and mount on an upward facing surface of the asset, with a clear view to the sky. This is helpful for installing on roofs, fender surfaces, etc.
   Where possible, try to orient the GPS antenna towards the sky where possible (battery door screw heads facing down)
4. Do not install the module on the asset with the front of the module facing the ground. This will result in reduced product performance.



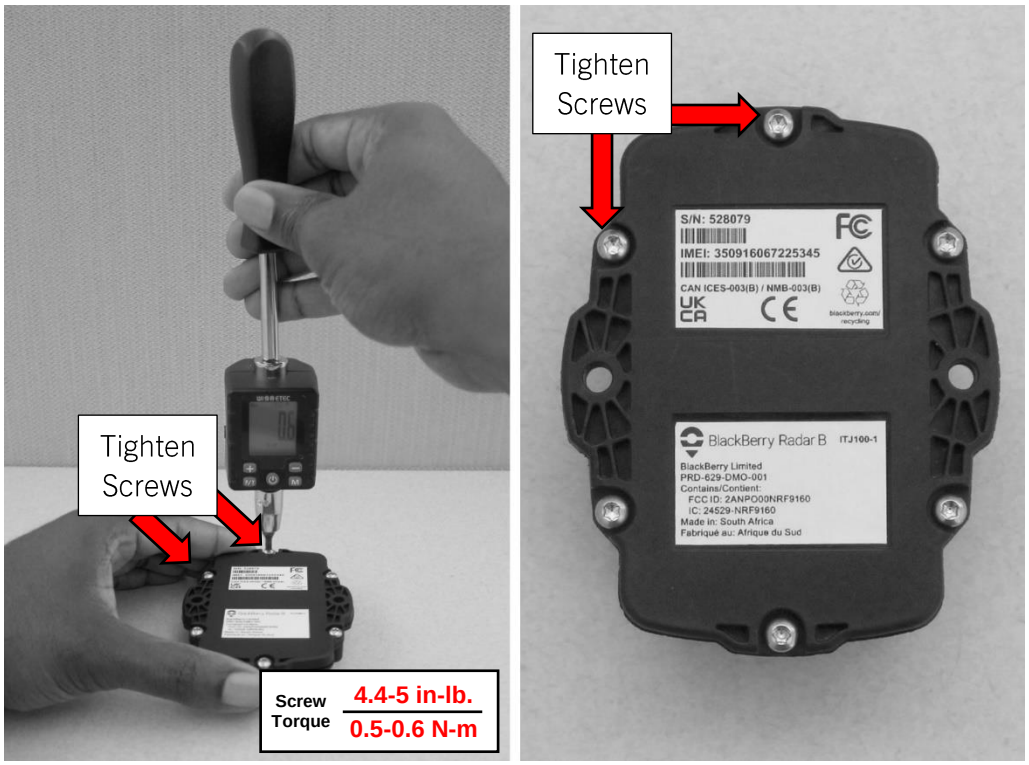
3.4.1 Prepare module for installation—Module activation

IMPORTANT: Please do not perform the module activation process until you are ready to install and associate the BlackBerry Radar modules on your asset. Once the module is activated, please complete the module installation and association, as soon as you can, to conserve battery life.

1. Remove the module from the package and from the plastic bag.

2. Locate the Pull Tab and pull to remove it completely from the device. This will activate the module.

3. Fully tighten the 2 screws next to the pull tab. Recommended screw torque is 4.4-5 in-lb. (0.5-0.6 N-m). The other four screws are pre-tightened from the factory.



IMPORTANT: The silicone seal is responsible for maintaining the integrity of the housing against ingress. When sealing the housing, we are looking for the following conditions:

a. Even pressure along all points of the seal
b. A uniform gap between the housing lid and base (approx 1mm)

The module is prepared for installation on the asset.

3.4.2 Installing the module on an asset

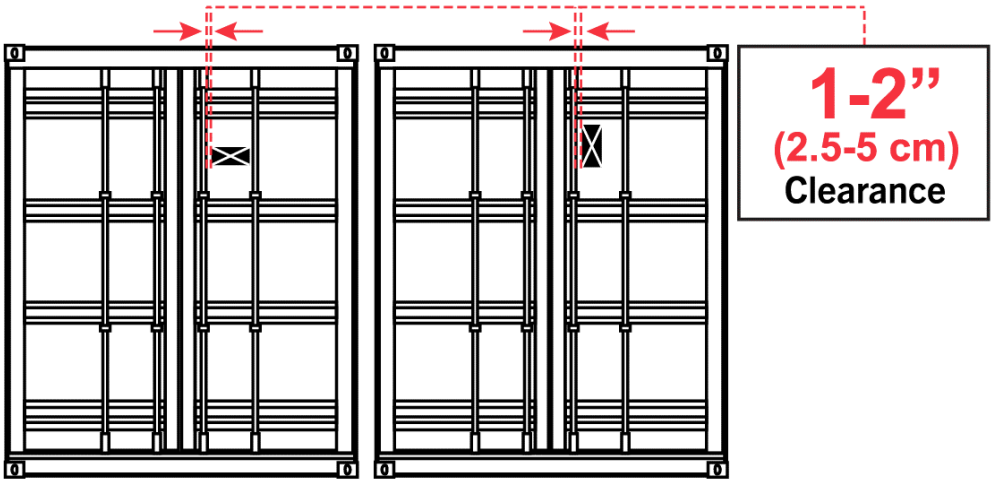
1. As indicated in Section 3.3 of this guide, record the module identifier and the asset identifier the module will be paired with. For your convenience, you may quickly create a record of the module and asset identifier pairings by removing the partially attached label from the inner housing of the module and placing it on the installation worksheet, next to the asset that will be tracked by the module.

The following sections of this guide will illustrate recommended installation methods for various asset scenarios.

3.4.3 Container installation procedure

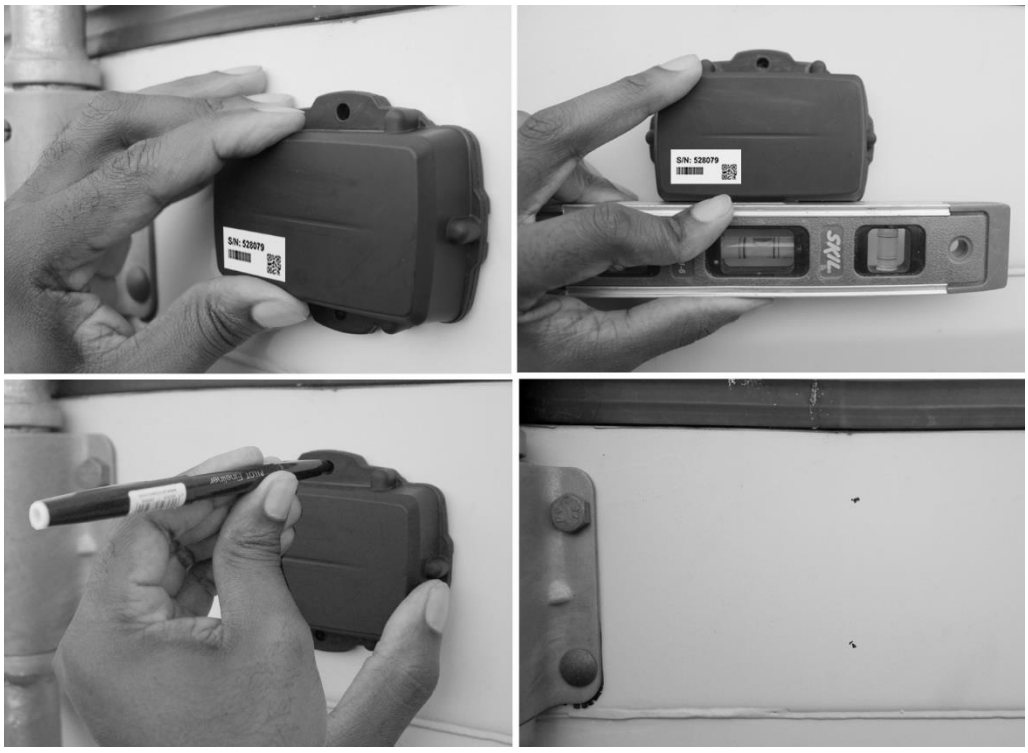
To monitor the location of your container with your BlackBerry Radar B module, we recommend mounting the device on the door. Recommended module placement is as follows.

- The module should be placed as high on the asset as possible for optimum antenna performance. The exact placement height will be influenced, in part, by various factors including: the height of the ladder used for the install, construction, etc.
- We recommend placing the module on the **right-hand** door and as close to the inside edge of this door as the door construction allows. If your door has external locking bars, ensure there is approximately 1-2" (2.5-5cm) of clearance space between the left side of the unit and the right edge of the locking bar.
  - Installing on the door provides access to both sides of the installation surface. This helps make it easy to apply nuts to the rear of the fastener if you're using conventional nuts and bolts.
  - Most individuals are right-handed and installing on this door is easier for most individuals.

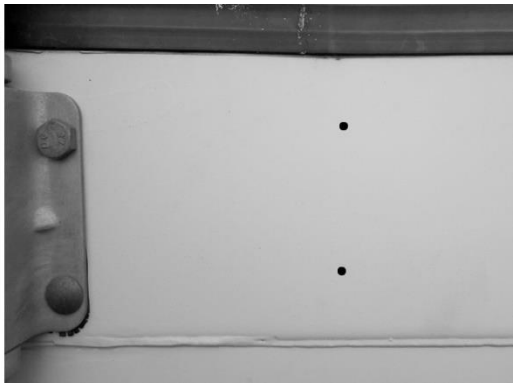


1. As indicated in Section 3.3 of this guide, record the module identifier and the asset identifier the module will be paired with. For your convenience, you may quickly create a record of the module and asset identifier pairings by removing the partially attached label from the inner housing of the module and placing it on the installation worksheet, next to the asset that will be tracked by this module.

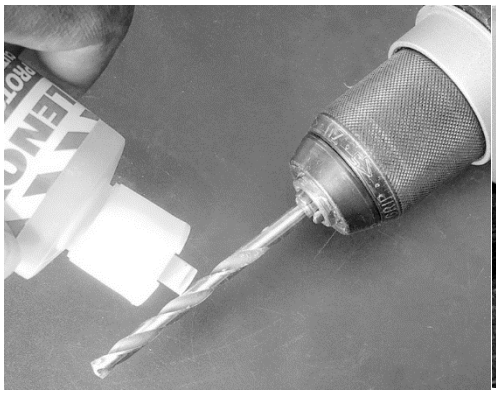
2. After selecting the best installation location for your device, place the module. Ensure the device is level. Use a pencil or marker to mark the holes for drilling.



3. Using a drill bit, drill a hole through each of the previously created markings. This will create two holes you will use to mount the module. If there are any burrs around the holes, remove them. Also, remove any dust or debris left over from the drilling or de-burring operations.

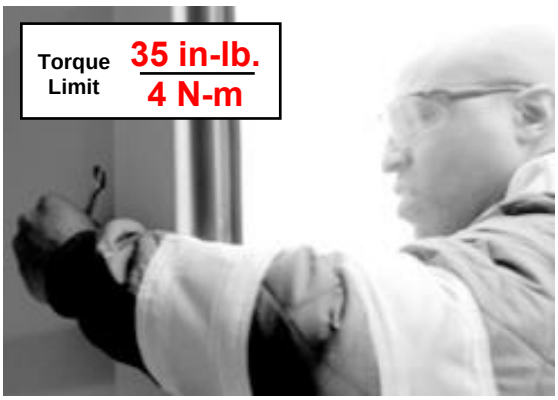


Drilling tips for intermodal installations
Due to the thicker, harder steel used on intermodal containers, you may wish to follow these suggestions.
Tip 1: To shorten drilling time and prolong the life of your drill bit, you may wish to use cutting tool lubricant during the drilling process.
Tip 2: For most precise hole drilling, before drilling your hole, you may wish to use a punch and hammer to help place the drill bit. This will prevent the bit from "walking" during the drilling operation.



4. Place the module on the door, aligning the holes on the module with the holes you drilled into the door.

5. Insert your fastener of choice into the holes and use the appropriate tools to secure the module to the asset.



Do not over-tighten the fastener. Do not tighten fastener beyond 35 in-lb. (4 N-m).

6. Close both doors. Installation is complete.

4 Removing BlackBerry Radar B modules

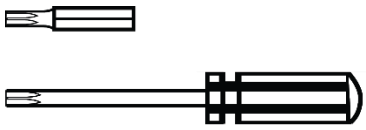
Use this procedure if you need to remove your BlackBerry Radar B module for servicing or recycling.

For more information on obtaining service for your devices, or recycling and safe disposal of your devices and batteries, contact your BlackBerry representative, or visit the following:

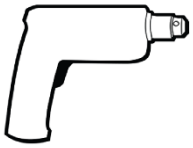
blackberry.com/RadarSupport--for information on service and the recycling and safe disposal of your device and battery.

4.1 Removal Tools

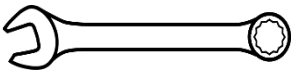
Torx (T15) or Hexalobular (x15) Screwdriver or Bit



Drill

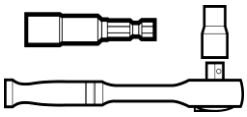


Wrench



*Required only if nuts and bolts are used.

Nut Driver or Socket Wrench with Socket*



*Nut Driver + Drill offers fastest removal. If Nut Driver is unavailable, a socket wrench and socket may be used.

Safety Glasses

4.2 Module removal

1. Remove the module from the asset by removing the two fasteners from the ends of the module and remove the module.

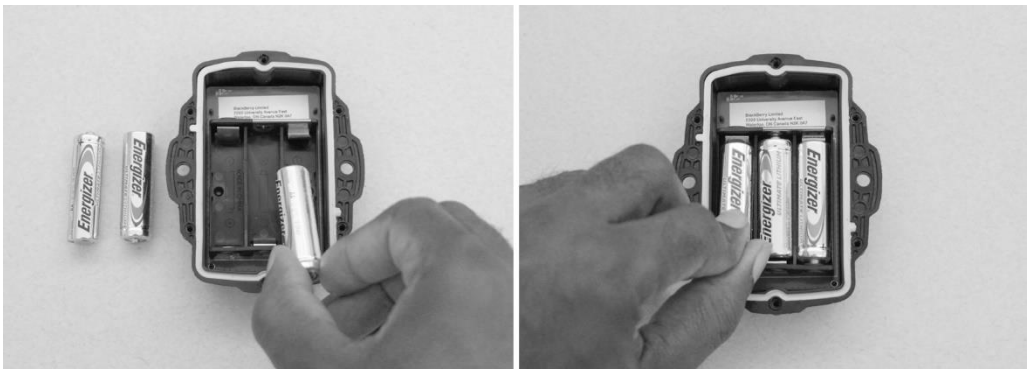
4.3 Battery removal and replacement

Battery removal and replacement

1. Remove the six screws from the back of the product and remove the battery door from the module to access the batteries. Retain the screws as they will be required to re-secure the battery door to the outer housing

IMPORTANT: The silicone seal is responsible for maintaining the integrity of the housing against ingress. When opening the housing, for any reason--be sure to confirm the silicone seal is in good condition before closing the housing again.

2. Remove the old batteries and replace with new batteries. We strongly recommend the use of Energizer Ultimate Lithium L91 AA batteries to ensure good performance.



3. Close the housing, and gently squeeze it shut. Foam on the lid will compress against the batteries, holding them firmly in place.

4. Tighten the 6 screws to a uniform tightness. Recommended screw torque must be 4.4-5 in-lb. (0.5-0.6 N-m).

IMPORTANT: The silicone seal is responsible for maintaining the integrity of the housing against ingress. When sealing the housing, we are looking for the following conditions:

a. Even pressure along all points of the seal
b. A uniform gap between the housing lid and base (approx 1mm)

5 Support

If you run into any problem during the installation process, contact the BlackBerry Radar support team at 1-844-RADAR-BB.

Legal notice

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Published in Canada