



BLACKBERRY RADAR R2

ITE100 – 1

January 2022

Dry Van, Insulated Trailers (Roll Up Doors)
Cargo Percentage

Installation Guide

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1 Overview

This guide provides detailed instructions for installing and activating new BlackBerry Radar R2 modules. It includes three main tasks:

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

Task 2: Install a BlackBerry Radar R2 module (see Section 3)

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

Task 3: Uninstall a module (see Section 4)

- Remove the module from the asset.
- Remove/replace the battery and prepare the device for shipping.
- Post-removal surface repair.

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 R2 module to its companion BlackBerry Radar H2 module and its asset (that is, the trailer/container that the modules 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 R2 modules





You may have a large number of BlackBerry Radar R2 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

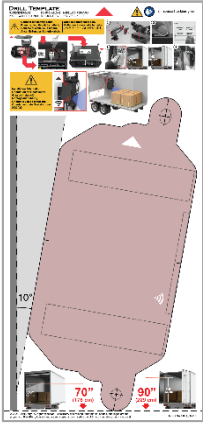
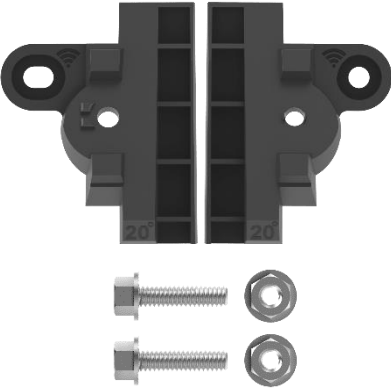
To complete the installation of the module to your assets, you will need the following components. The following components are contained in the module packaging.

Radar R2 Module Package Contents

<div>Radar R2 Module</div> <div></div>	<div>Drill Template (Not for use with Side Mount Installs)</div> <div></div>	<div>Lithium Metal Battery</div> <div></div>	<div>Fastener Bag (4 screws / device)</div> <div></div>
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Radar R2 20° Side Mount Tilt Bracket Accessory Kit Package Contents

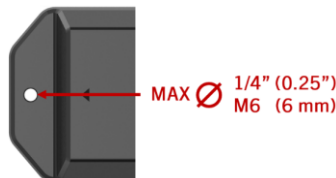
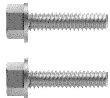
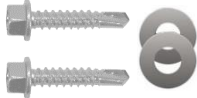
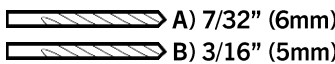
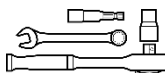


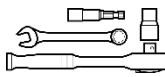


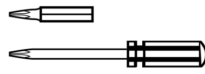


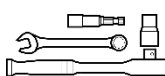

*NOTE: Radar R2 20° Side Mount Tilt Bracket Accessory **required** for Roll Up Door Installations. 20° Accessory Kits are available from your BlackBerry Representative.*

<div>Side Mount Drill Template</div> <div></div>	<div>Radar R2 20° Tilt Brackets and Fasteners (2 brackets and 4 fasteners per device)</div> <div></div>
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If you are missing any of the above components in your package, contact your BlackBerry Sales Representative.

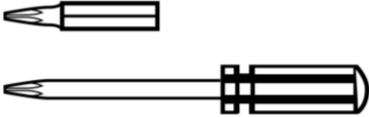
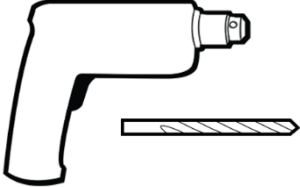

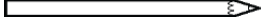
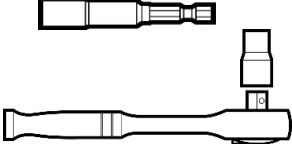


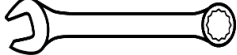
Fastener Considerations—User-Supplied Fasteners

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.

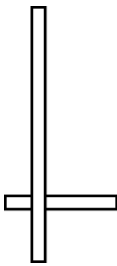
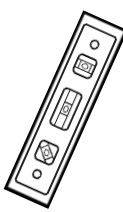

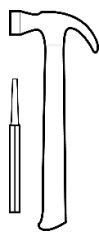
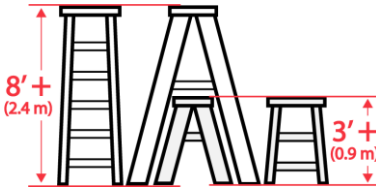
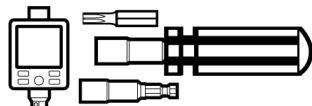



IMPORTANT: The maximum fastener thread diameter supported by this product is 1/4" or M6 (6 mm). For most secure fastening, we do not recommend using fasteners with a diameter less than that of a 1/4" or M6 fastener.		
Box Section (+3mm wall thickness)	A) 2 thread rolling screws (3/8" head, 1/4"-20 thread, 3/4" length)  B) 2 self-tapping screws and washers (3/8" head, 1/4"-14 thread, 1-1/4" length)  *For installation in narrow clearance areas, blunt-ended screws--like thread rolling screws--are recommended.	Drill Bit  Nut Driver/Socket/Wrench  3/8" (10mm)
Panel Section (with rear access)	2 hex bolts, nuts, and 4 washers (7/16" head, 1/4"-20 thread, 1/4"-20 nut) (11mm head, M6 thread, 50mm length, M6 nut) 	Drill Bit  Nut Driver/Socket/Wrench  7/16" (11mm)
Panel Walls (wood/composite core)	2 wood screws and washers (#10 wood screw, Phillips PH2 Head, 1" length) (5.0mm wood screw, Phillips PH2 Head, 25 mm length) 	Drill Bit  Screwdriver 
Insulated Trailer Wall	2 hex bolts, washers, and well nuts Bolt: 7/16" head, 1/4"-20 thread, 1-1/2" length Well Nut Insert: 1/4"-20 thread 	Drill Bit  Nut Driver/Socket/Wrench  7/16" (11mm)
Accessory Adhesive Kits For installations where drilling is not desired. Available from your BlackBerry Representative. NOTE: Not for use on bare wood surfaces.		

3.2 Installation tools

Required tools to complete the installation:

Phillips (PH2) Screwdriver or Bit 	Drill and Drill Bits 	Tape  Pencil or Non-Permanent Marker 
Nut Driver or Socket Wrench with Socket*  <p>*Nut Driver + Drill offers fastest installation. If no Nut Driver is available, a socket wrench and socket may be used as a substitute.</p>	Safety Glasses 	Tape Measure  Wrench  <p>*Required only if nuts and bolts are used.</p>

Recommended tools to complete the installation:

T-Square 	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.	70% Rubbing Alcohol 	File 	Cutting Lubricant* (Recommended)  *Recommended for faster drilling speed on thicker metals and longer drill bit life.	

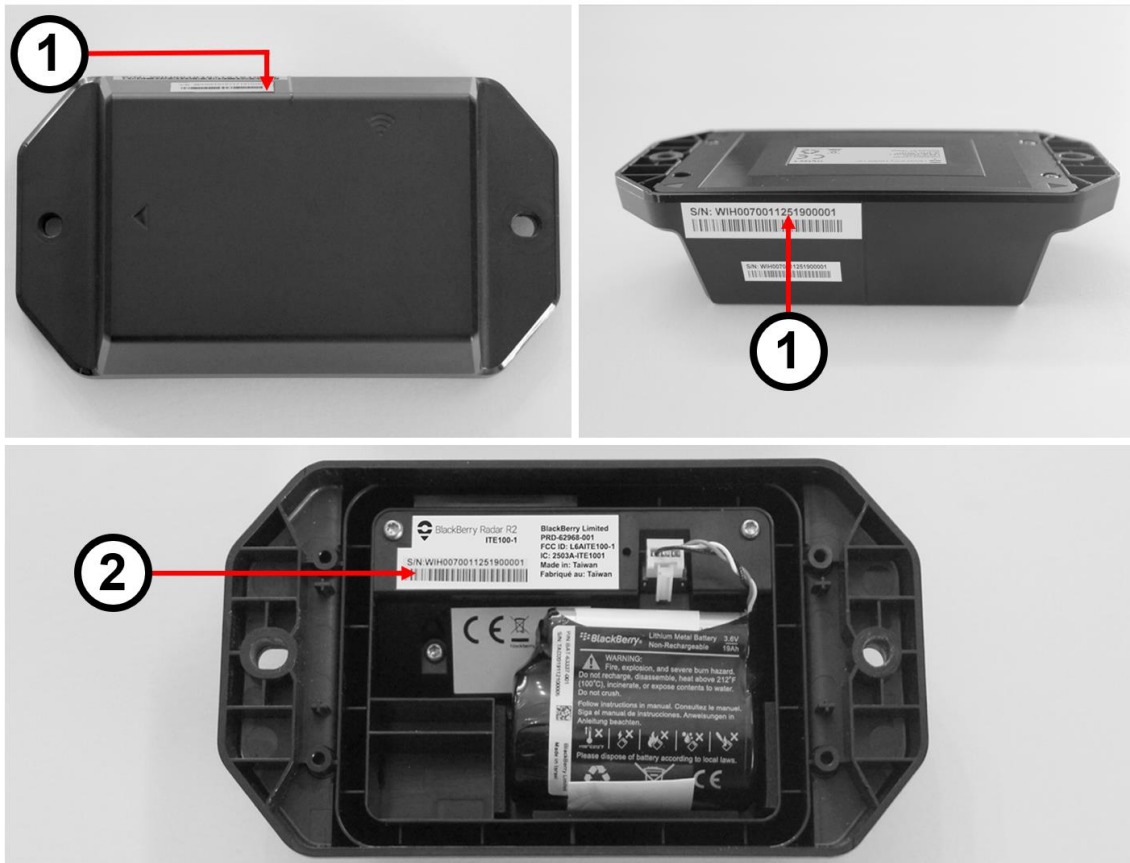
3.3 Matching a module identifier to an asset identifier


In order to track an asset, the BlackBerry Radar R2 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 BlackBerry Radar R2 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 R2 module is printed on three labels—two labels attached to the front surface of the outer housing and the other label inside the battery compartment. The module identifier also serves as the serial number (S/N) for the module.

To match a module identifier with an asset identifier:

1. Locate the module identifier for your device. The module identifier is shown in two places.
 1. Externally—temporary S/N label and permanent exterior S/N label, attached to the front of the outer housing,
 2. Internally—permanent main product label, in the battery compartment.





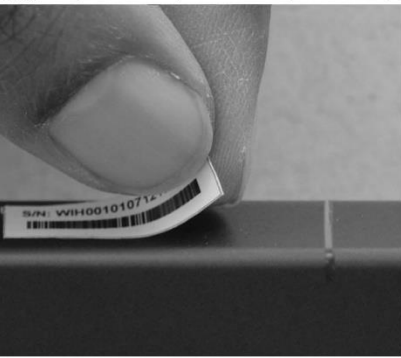
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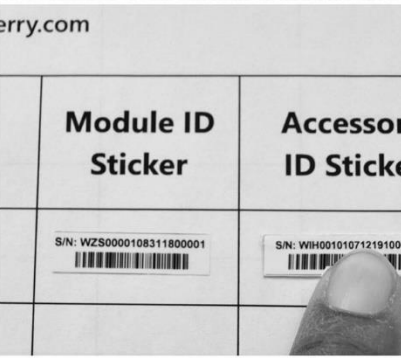
BlackBerry Radar

Date: November 22, 2020
Installer: ccorley@blackberry.com

Installation Worksheet


Asset ID	Module ID Sticker	Accessory ID Sticker	Mileage (Optional)
ZG7419			
New Asset again			
Completely New Asset			
KR8369			
CCU 1000T 0001			








Date: No
Installer

Radar H2 Column



Radar R2 Column



Asset ID	Module ID Sticker	Accessory ID Sticker	Mileage (Optional)
ZG7419			

3.4 Module installation

To monitor cargo loading status with your BlackBerry Radar R2, you must install the module on the **left** wall of the trailer, just ahead of the overhead door tracks.

If you would also like to monitor door open and door closed events, you will need to install the Radar H2 on the exterior of the trailer door.

When selecting a mounting location for either module, carefully consider how the asset will be used during its normal, day-to-day operation.

Do not place the modules in a location where they are susceptible to damage from:

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

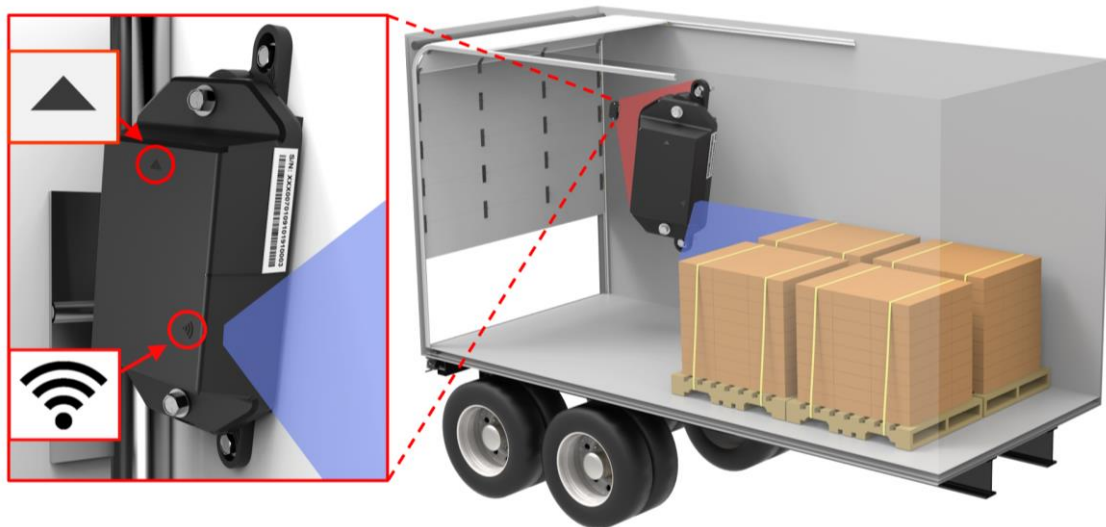
IMPORTANT: For accurate cargo detection, orientation matters.

1. You must install the Radar R2 module vertically.

NOTE: Vertical orientation is mandatory for trailer with roll-up doors.

2. For accurate cargo loading status detection, you must install the Radar R2 modules at the end of the trailer where the cargo is loaded and unloaded.
3. When installing the Radar R2 module in the vertical orientation, always ensure the module is installed with the triangle icon pointing towards the ceiling of the trailer and the signal icon pointing towards the cargo area that will be monitored.
4. For accurate cargo detection, please ensure no items are stored on the left wall ahead of the Radar R2 module. Any items in front of the device's sensing area will affect the cargo reporting.

This diagram illustrates the supported installation orientations for the BlackBerry Radar R2 module.



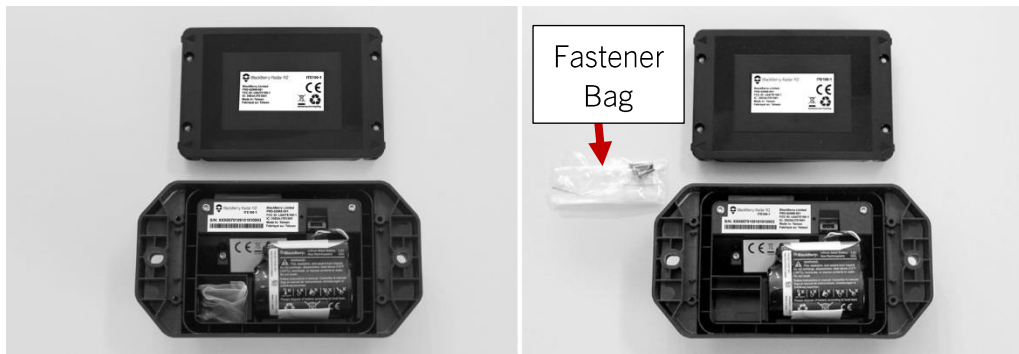
3.4.1 Prepare module for installation—Battery connection

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

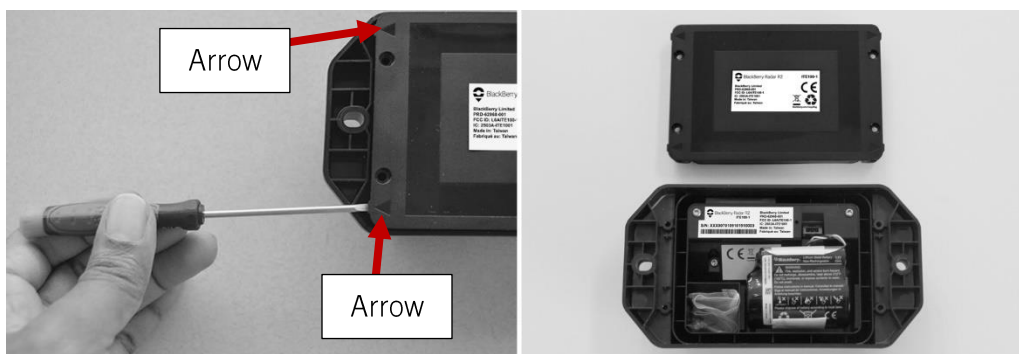
1. Remove the module from the package and from the plastic bag.



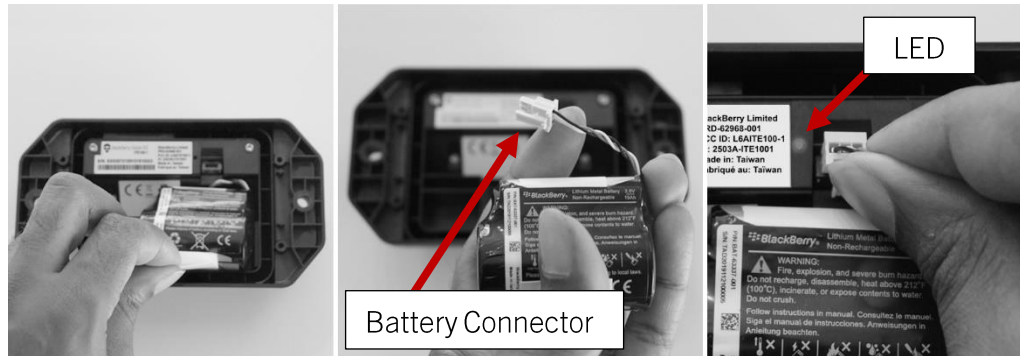
2. Remove the battery door from the rear of the device. Remove the fastener bag from the device and keep nearby. You will require these screws to secure the battery door to the outer housing and complete the module assembly process.



Tip: If you find it difficult to remove the inner housing from the outer housing, you may insert a tool--such as a screwdriver--near the arrows embossed into the door and lift to separate the door from the housing.



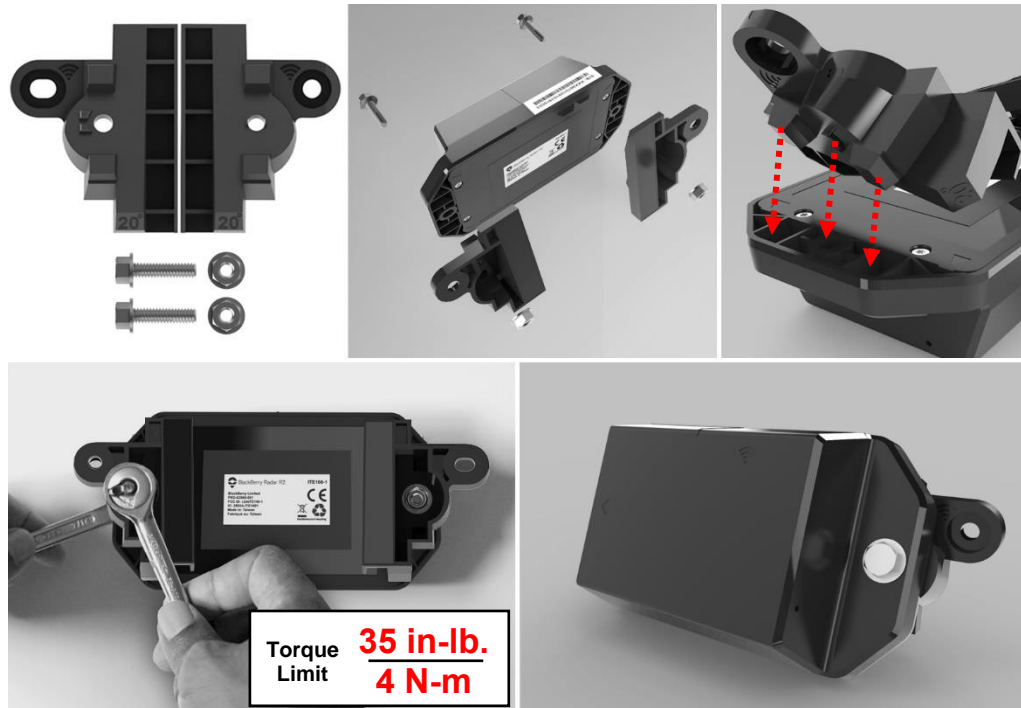
- Remove the battery from the housing to reveal the battery cable connector. Return the battery to the housing and connect the battery cable to the battery connector. The LED will blink to indicate the module is active. NOTE: It can take up to 5 seconds for the blink sequence to begin. Please be patient. Once you see the LED blink, you may continue to the next step.



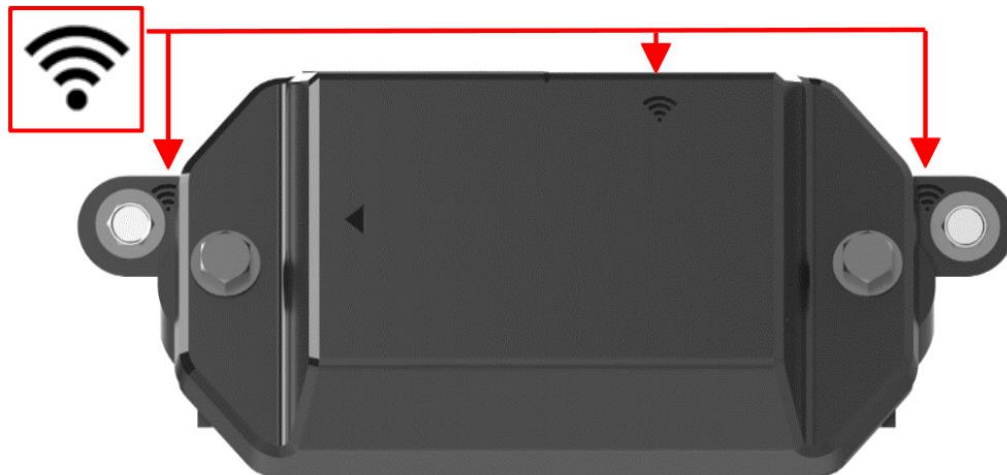
- Fully install the battery door. Locate the Fastener Bag and remove the four screws. Using a Phillips (PH2) screwdriver, install the screws to secure the battery door.
IMPORTANT: Screw torque must be 7-8 in-lb. (0.8-0.9 N-m).



5. Locate the Radar R2 20° Tilt Brackets and Fasteners.
- Place the brackets on the rear of the Radar R2 module, ensuring the holes on the R2 20° Tilt Bracket Accessory are aligned with the holes on the Radar R2 module and the bracket's guide tabs are seated within the rear openings of the module.
 - Secure the brackets to the module with the supplied fasteners.



IMPORTANT: Ensure the signal icon on each Radar R2 20° Tilt Bracket is placed in the same orientation as the signal icon on the Radar R2 module.



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 pairings by removing the partially attached label from the front of the module and placing it on the installation worksheet, next to the asset that will be tracked by the module.



Tip: For modules that have previously been transferred to new assets, the temporary S/N label may no longer be in place. If this is the case, you will need to write the module identifier (S/N) for each module on the installation worksheet.

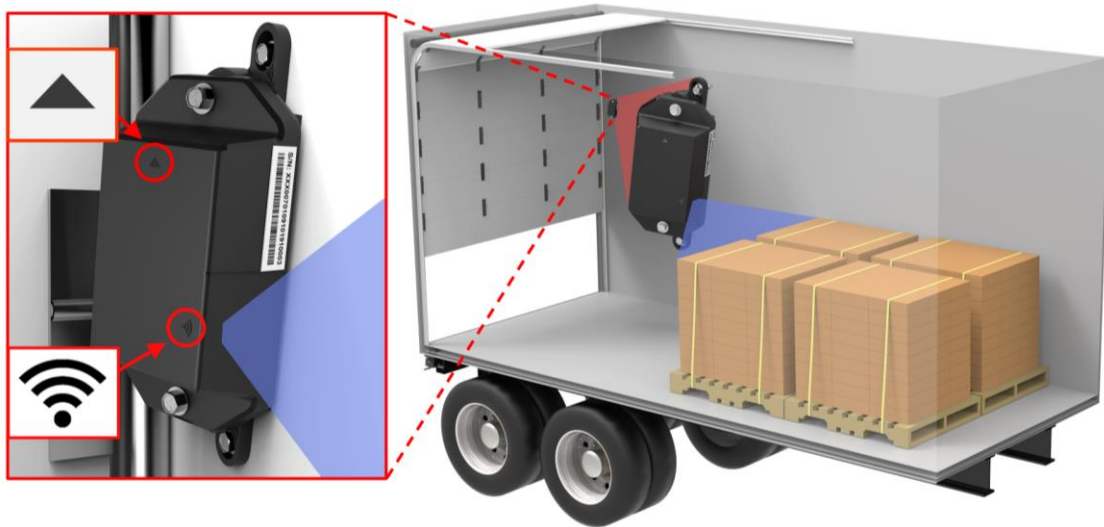
Date: November 22, 2020 Installer: ccorley@blackberry.com		
Asset ID	Module ID Sticker	Accessory ID Sticker
ZG7419	WZS0000108311800001	W1H001010712191006F

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

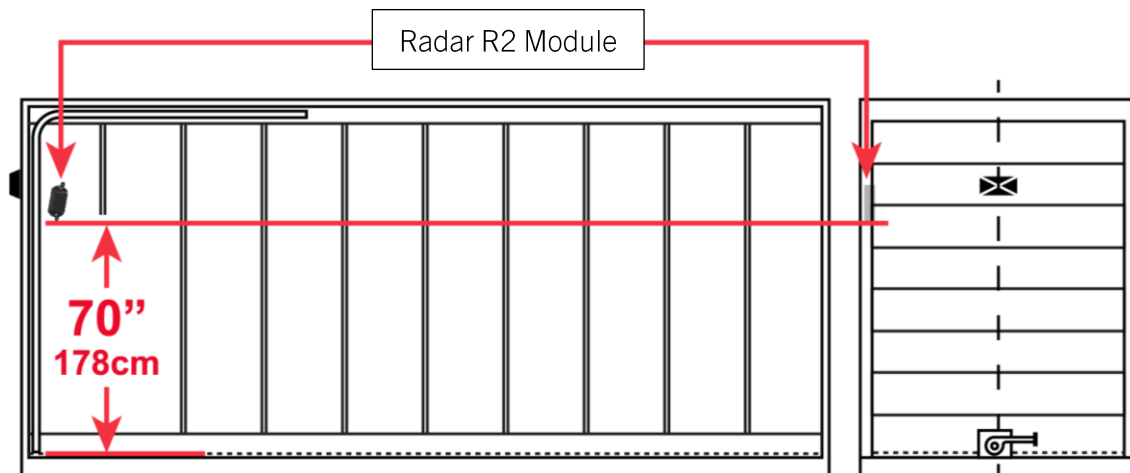
3.4.3 Roll up door installation procedure

If you wish to monitor cargo load status or with your BlackBerry Radar R2 module, you must mount it on the **left** wall of the trailer. The attachment method you will use will depend on the construction of the trailer, and other associated factors like wall thickness, etc.

Roll Up Doors: The module must be installed vertically on **left** side wall of the trailer, just ahead of the overhead door tracks. Ensure the triangular arrow on the Radar R2 module is pointed towards the ceiling and the signal icon on the Radar R2 module is pointed towards the cargo that will be monitored.



IMPORTANT: When installing the BlackBerry Radar R2 module on an asset with Roll Up Doors, the bottom of the module must be installed 70" (178 cm) above the floor. This is important for cargo detection accuracy.



Fastener selection considerations

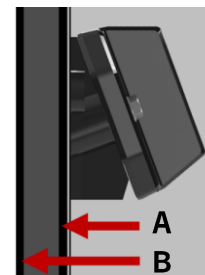
- If your trailer is insulated (i.e., a reefer or heater) and you wish to avoid thermal losses caused from drilling through the wall, completely, we recommend the following options:
 - Limiting the depth of drilling and using Well Nuts, along with shorter bolts, to secure the device to the asset.
 - Attach to the asset using the accessory Adhesive Kit. Accessory Adhesive Kits are available from your BlackBerry representative. **NOTE:** Accessory Adhesive Kits are not for use on bare wood surfaces.



- If you will install your device on the side wall of the trailer, and you wish to avoid drilling through the wall, completely, we recommend the following options:
 - If the wall's surface is metal, plastic fiberglass, etc.--attach to the asset's side wall using the accessory Adhesive Kit. Accessory Adhesive Kits are available from your BlackBerry representative. **NOTE:** Accessory Kits are not for use on bare wood surfaces.
 - If the wall's surface is wood, attach to the asset's side wall using wood screws. **NOTE:** Ensure that the screws are short enough not to protrude beyond the external surface of the mounting surface.



IMPORTANT: If you will use the adhesive kit for your installation, and the surface you will mount to uses laminated construction, please ensure the mounting surface (A) is firmly laminated to the substrate (B). If the mounting surface is not firmly laminated to the wall substrate, you may receive inaccurate cargo status readings.



Wall Placement—Fastener Mounting

Follow these instructions if you are installing the module on a trailer with roll up (overhead) doors.

NOTE: In this example the wall of the trailer is plywood.

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 pairings by removing the partially attached label from the rear housing of the module and placing it on the installation worksheet, next to the asset that will be tracked by this module.

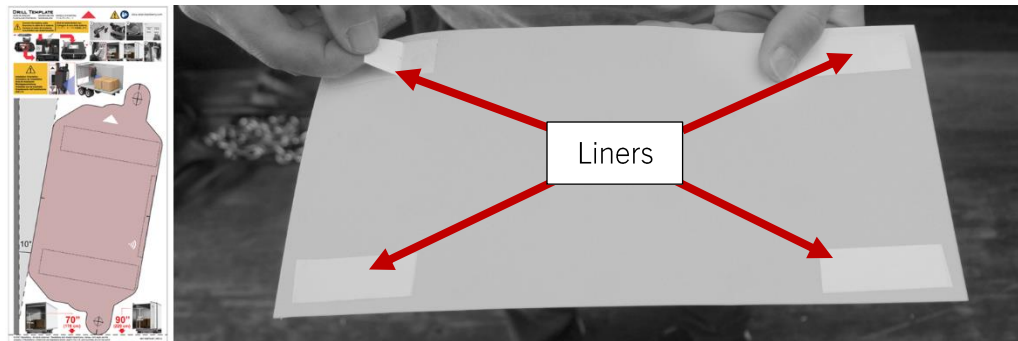


2. Mark the height where the device will be installed on the side wall of the container.
IMPORTANT: The module must be installed on the left wall of the container, just ahead of the overhead door tracks.
 - The bottom of the R2 device and bracket assembly should be 70" (178 cm)* above the interior floor.
 - The R2 device and bracket assembly should be tilted forward 10°. This 10° tilt angle is automatically included in the template.

Tip: When you are marking the line on the wall, we recommend continuing the mark along the wall for approximately 4" (10 cm) to accommodate the width of the installation template.

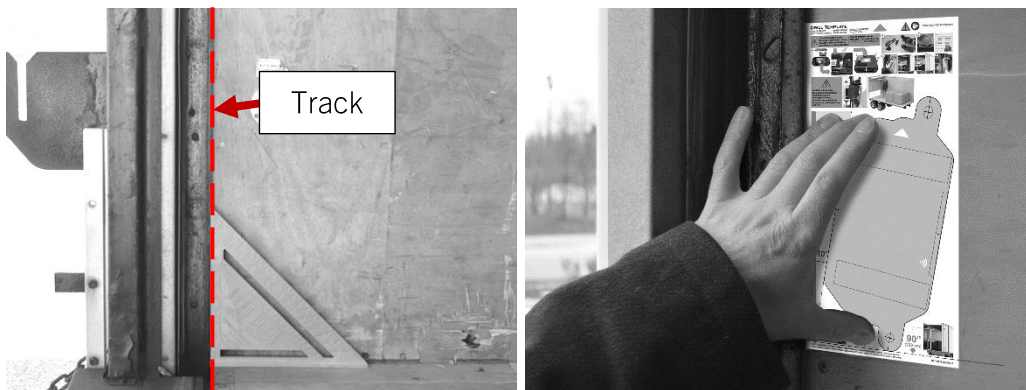


3. Locate the “Side Mount” Install template that came with the 20° bracket. Remove the liners from the rear of the template and place the template on the wall. The adhesive ensures the template stays on the wall for accurate drilling of your holes.

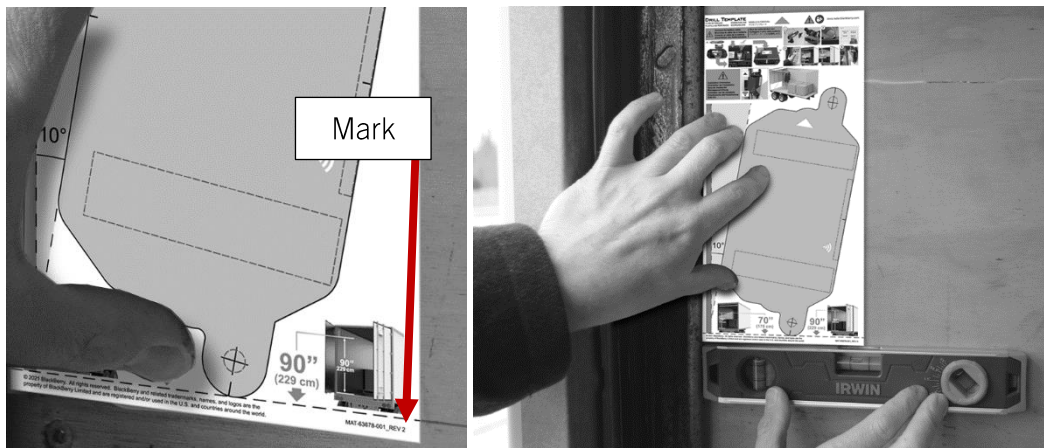


It is recommended that you install the module as level as possible on the asset. To help ensure the module is straight, you may try one of the following techniques.

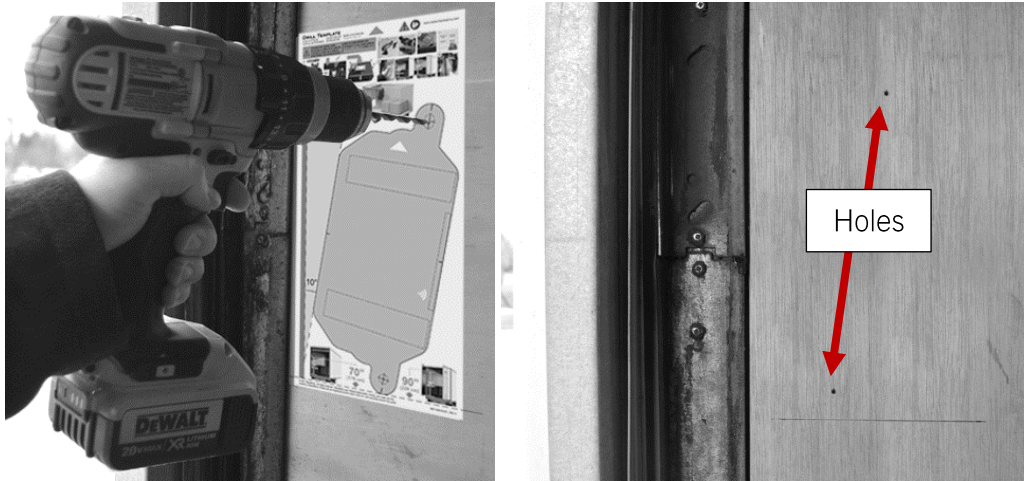
Technique 1: Using a square or level, confirm the door’s track is perfectly vertical (perpendicular to the floor). If the track is perfectly vertical, align the rear of the module to the front edge of the door’s track.



Technique 2: Visually, align the dotted line near the bottom of the template to the mark you created on the wall. Using a square or level, confirm that the template is level and the bottom edge of the template is parallel to the floor.



4. Using a drill bit, drill a shallow hole through each of the marked holes. This will create two holes you will use to mount the Radar R2 bracket and device to the asset.



Drilling tips for side wall installations

Here are some tips to help you determine the best drilling strategy for your trailer construction and selected fasteners.

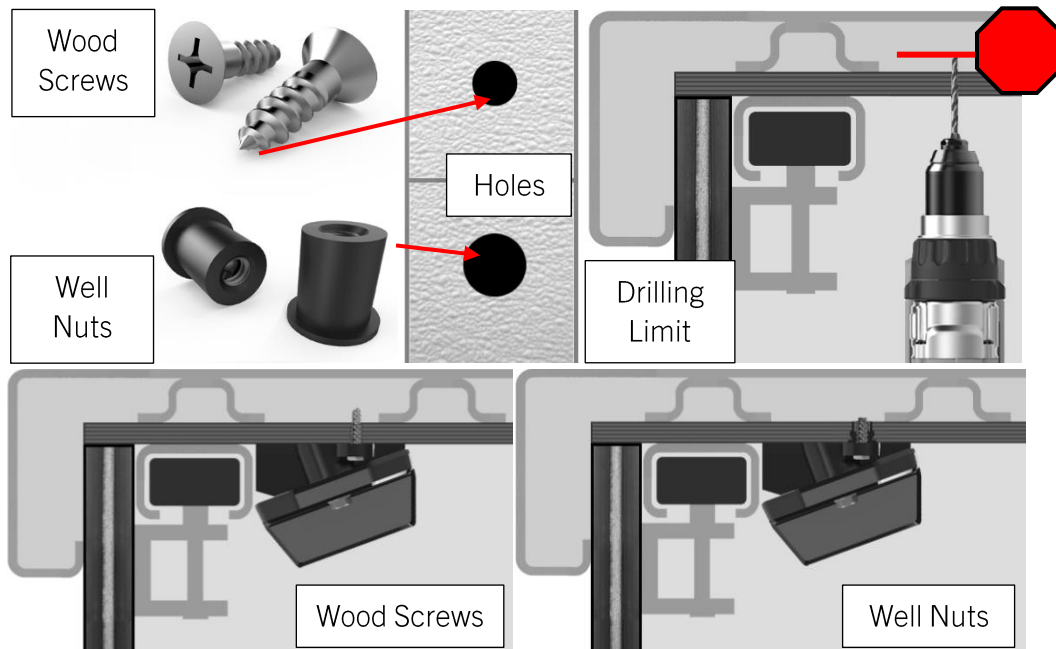
IMPORTANT: To avoid drilling completely through the wall of the asset, we recommend limiting the depth of the drilling.

Tip 1. Wood Screws, Thick Wall Section (Plywood or Composite side walls):

Drill a pilot hole slightly smaller diameter than your fastener. Limit the depth of the drilling, to avoid breaking through the wall.

Tip 2. Well Nuts, Thick Wall Section (Insulated Trailers):

Drill a hole large enough in diameter to accommodate your well nut. Limit the depth of the drilling, to avoid breaking through the wall.



5. Place the module on the wall, aligning the holes on the 20° bracket with the holes you drilled into the wall.



6. Insert your fastener of choice into the holes and fasten the module to the wall using one of the approaches below.

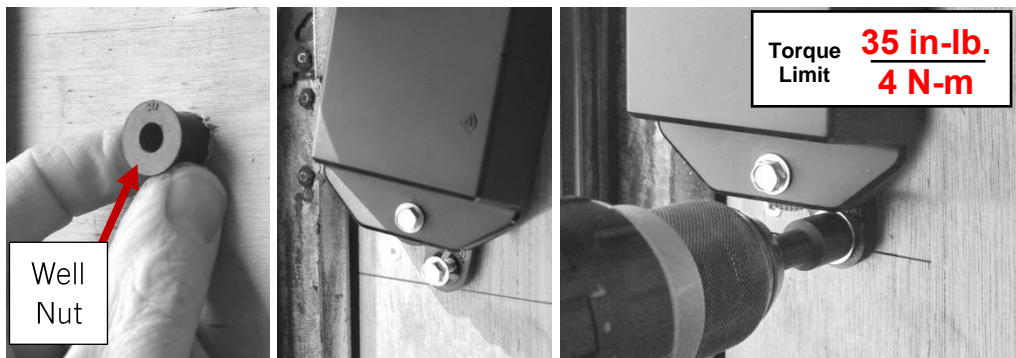
Wood Screws

- Having drilled a pilot hole slightly smaller than your fastener, use a screwdriver or drill and driver bit and nut driver to drive the screw to the wall.



Well Nuts

- Insert the Well Nuts into the holes. Align the holes on the 20° bracket to the well nuts, then insert the fasteners. Secure the module to the asset.
- Do not tighten fastener beyond 35 in-lb. (4 N-m) to avoid damaging the well nut.



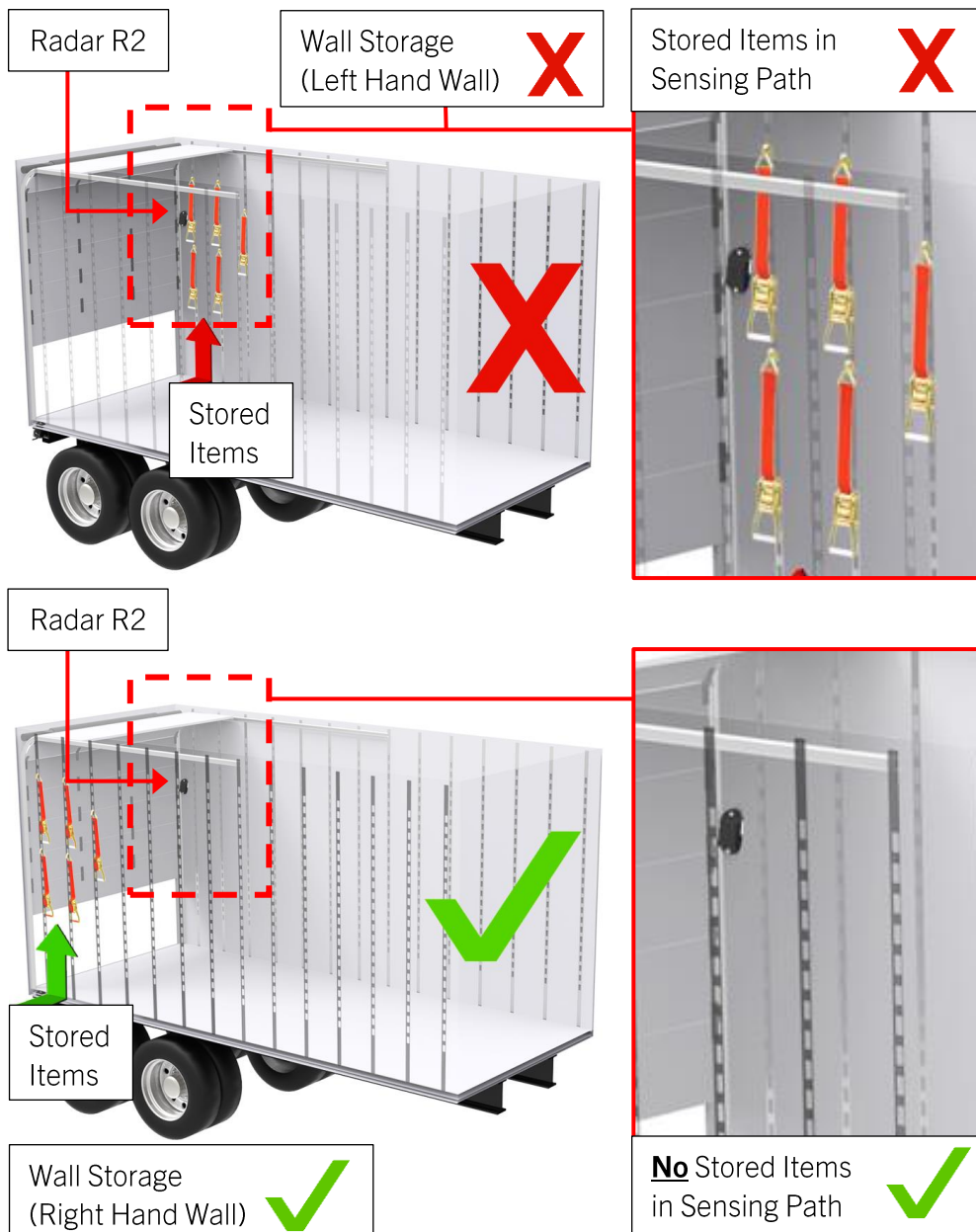
Tips for well nut installation

Tip 1: For fastest installation, we recommend using a drill and nut driver to install the bolt into the well nut. To avoid over tightening, use the lowest speed to install the bolt.

Tip 2: To avoid spinning the well nut during the install, we recommend pressing the module against the wall while installing each fastener.

7. If there are items that are stored on the left wall of the asset, please move them to the right-hand wall of the asset.

IMPORTANT: Ensure no items that will be stored on the left wall of the trailer, in front of the Radar R2 module. Any items in front of the device's sensing path will affect the cargo reporting.



8. Close the doors. Installation is complete.



Wall Placement--Adhesive Mounting

Follow these instructions if you plan to install the module in temperatures **above 0°C (32°F)**, using the available accessory adhesive kit. **NOTE:** Adhesive is not for use on bare plywood surfaces.

1. Assess the installation surface to determine the surface preparation recommended for your installation surface, to maximize adhesion of your adhesive. Perform the appropriate steps for your installation surface.
 The following chart illustrates recommended surface preparation techniques for various installation surface materials.

Installation Surface Material	Recommended Surface Preparation Procedure
Bare metals (Steel, Aluminum)	Lightly sand with 180-240 grit sandpaper to remove any surface oxidation or surface contaminants. Remove dust and debris. Clean with 70% alcohol to remove any remaining surface contaminants.
Painted metals (Steel, Aluminum)	Clean with 70% alcohol to remove any surface contaminants.
Plastics or Composites	Clean with 70% alcohol to remove any surface contaminants.

2. 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 pairings by removing the partially attached label from the module's front housing and placing it on the installation worksheet, next to the asset this module will track.



3. Mark the height where the module will be installed on the side wall of the container.
- IMPORTANT:** The module must be installed on the **left** wall of the container, just ahead of the overhead door tracks.
- The bottom of the R2 device and bracket assembly should be 70" (178 cm)* above the interior floor.
 - The R2 device and bracket assembly should be tilted forward 10°. This 10° tilt angle is automatically included in the template.

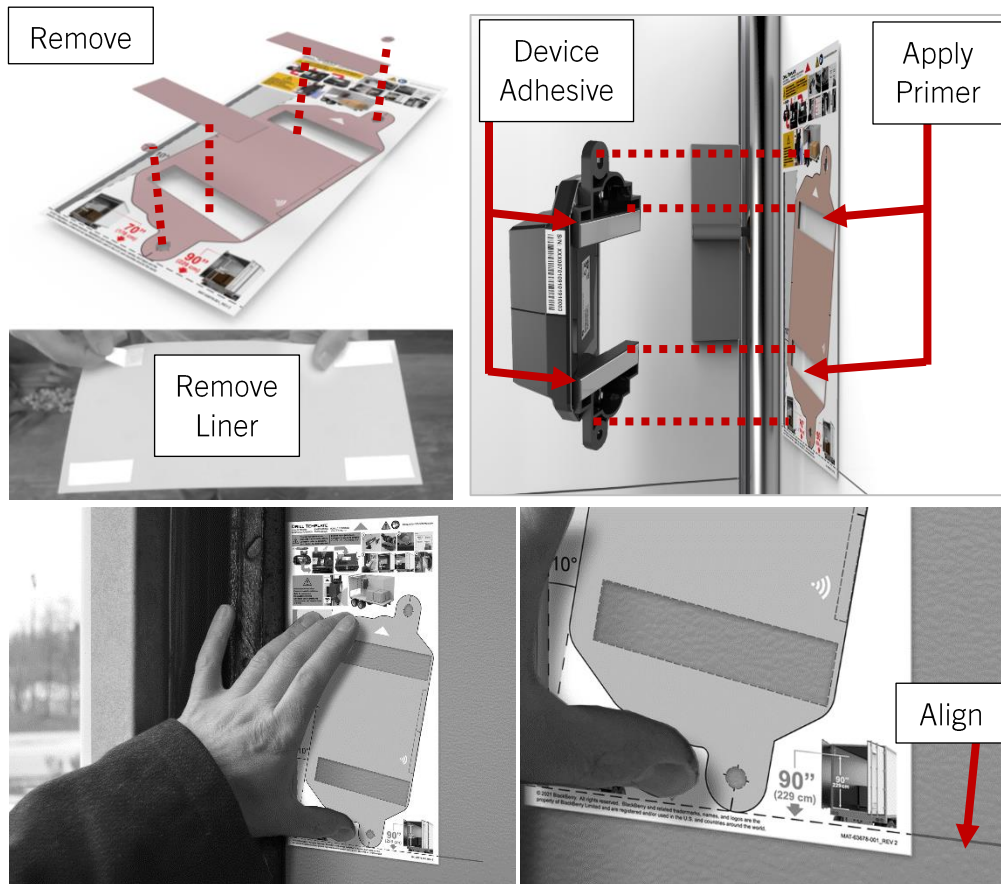
Tip: When you are marking the line on the wall, we recommend continuing the mark along the wall for approximately 4" (10 cm) to accommodate the width of the installation template.



4. Locate the alcohol pad that was included in your adhesive kit. Open the package and thoroughly clean both substrates where the 3M VHB tape will be applied (back of the 20° Tilt Bracket and the installation surface). Wipe dry with a clean cloth.



- Remove the perforated sections from the template. This will create precise boundaries that will identify areas where the 3M VHB Universal Primer will be applied to the wall (see Step 6). Remove the adhesive liner from the rear of the template and place the template onto the wall. Align the dashed line near the bottom edge of the template to the line on the wall.



- Locate the 3M VHB Universal Primer ampule that was included in your adhesive kit. Apply the primer to the back of the 20° Tilt Bracket, where the tape will be applied.
IMPORTANT: If the module will be installed on a plastic surface, also apply the primer to the installation surface. This will improve adhesion on plastic surfaces.



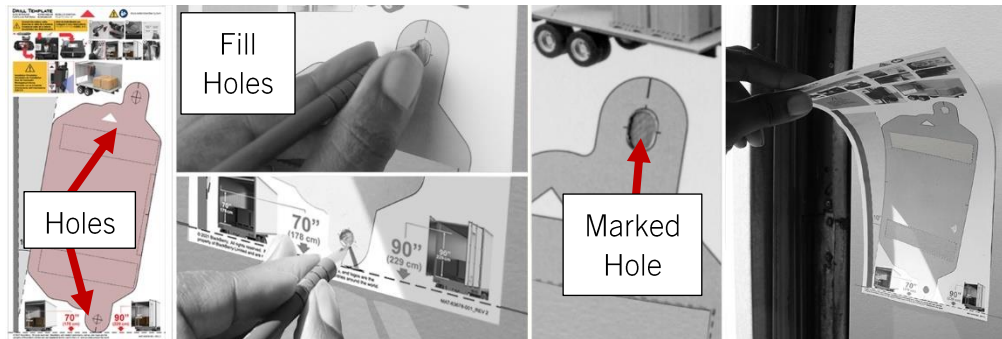
To apply the primer:

- A) Crack the ampule at the “Crush at Dot” icon to release the primer and saturate the felt applicator tip, at the end of the tube.
- B) Once the primer has saturated the applicator, rub the felt tip where the tape will be applied to the 20° Tilt Bracket, on the rear of the module. If installing the module on a plastic surface, apply primer to the installation surface.



Tip: If you have removed the perforated sections from the Installation Template, apply the primer within the openings. These openings will precisely identify areas where the 3M VHB Universal Primer will be applied to the installation surface.

7. Once the primer is applied to the surface, locate the screw holes on the template. Fill the screw holes with your marking tool. This will create reference marks you will use to accurately locate the R2 on the wall after the adhesive is applied to the module. When the marking operation is complete, remove the template from the wall.



8. Remove the white extended liner from the back of the tape. Apply to the battery door. Using firm pressure (minimum of 15 psi) to ensure adhesive bonds to battery door.

IMPORTANT: Minimum application temperature for the tape is **0°C (32°F)**. Initial tape application to surfaces at temperatures below **0°C (32°F)** is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally good.



9. Remove the clear liner. Align the holes on the 20° bracket to the areas you marked on the wall and place the module on the prepared mounting surface. Apply firm pressure (15 psi) to the module for 30-45 seconds to ensure the adhesive bonds to the surface.







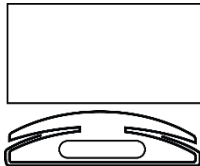
10. Installation is complete.



Adhesive Mounting—Cold Weather Adhesive Installation Procedure

Follow these instructions if you must install your Radar R2 module in cold temperatures, using the available accessory adhesive kit, and have trouble getting the adhesive to adhere. Initial tape application to surfaces at temperatures below **0°C (32°F)** is not recommended. **NOTE:** Adhesive is not recommended for use on bare woods, like plywood.

Recommended Cold-Weather Installation Tools:

<p>Cordless Heat Gun and Attachments</p>  <p>*Raise installation surface temperature for improved adhesion.</p>	<p>Non-Contact Thermometer</p>  <p>*Check surface temperature for adhesive installation.</p>	<p>Towel</p> 	<p>70% Rubbing Alcohol</p> 	<p>Sandpaper and Sanding Block</p>  <p>*Remove surface oxidation. Bare metal surface prep.</p>
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Pre-Install Device Preparation

Before heading outdoors to your asset, it is recommended to complete these steps in a warm, indoor environment with a temperature between 59-77°F (15-25°C).

1. Locate the alcohol pad that was included in your adhesive kit. Open the package and thoroughly clean the area where the 3M VHB tape will be applied. Wipe dry with a clean cloth.



2. Locate the 3M VHB Universal Primer ampule that was included in your adhesive kit. Apply the primer to the back of the module, where the tape will be applied.
IMPORTANT: When installing in cold weather, it is recommended to use the primer on the battery door and your asset's installation surfaces. To ensure you have fresh installation surface primer to use on your asset's installation surfaces, conserve your primer by using one primer ampule to prime multiple devices.

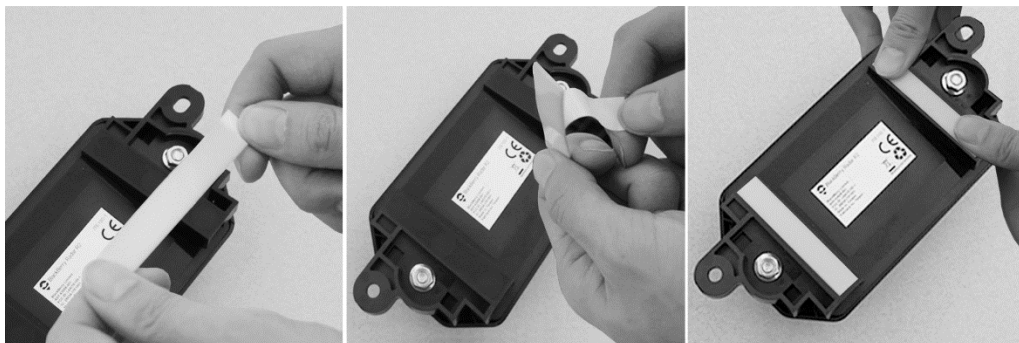


To apply the primer:

- A) Crack the ampule at the “Crush at Dot” icon to release the primer and saturate the felt applicator tip, at the end of the tube.
- B) Once the primer has saturated the applicator, rub the felt tip where the tape will be applied to the module.



3. Remove the white extended liner from the back of the tape. Apply to the battery door. Using firm pressure (minimum of 15 psi) to ensure adhesive bonds to battery door.



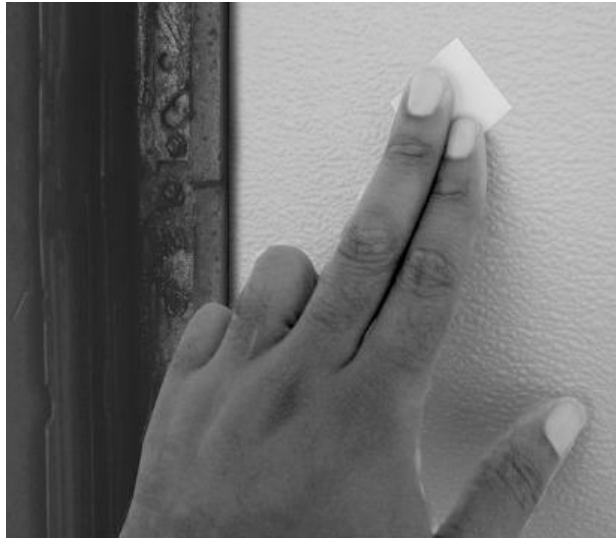
Asset Installation

4. Assess the installation surface to determine the surface preparation recommended for your installation surface, to maximize adhesion of your adhesive. Perform the appropriate steps for your installation surface.

The following chart illustrates recommended surface preparation techniques for various installation surface materials.

Installation Surface Material	Recommended Surface Preparation Procedure
Bare metals (Steel, Aluminum)	Lightly sand with 180-240 grit sandpaper to remove any surface oxidation or surface contaminants. Remove dust and debris. Clean with 70% alcohol to remove any remaining surface contaminants.
Painted metals (Steel, Aluminum)	Clean with 70% alcohol to remove any surface contaminants.
Plastics or Composites	Clean with 70% alcohol to remove any surface contaminants.

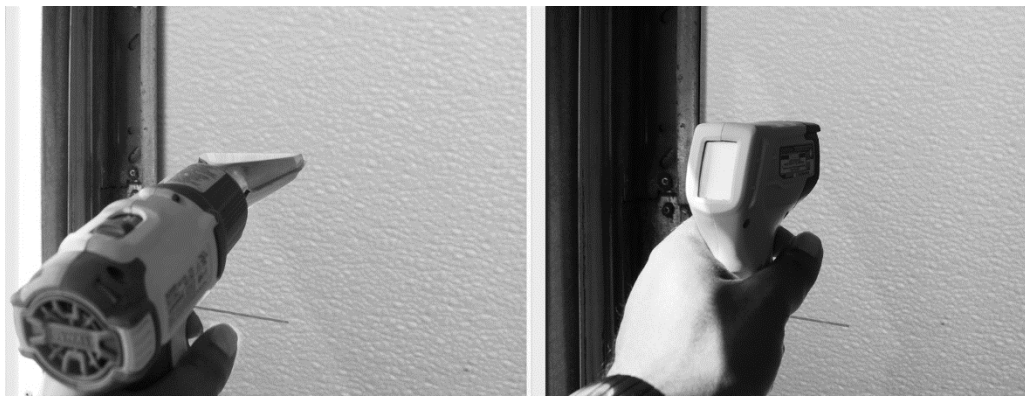
The following images illustrate the surface preparation procedure for a painted metal and plastic mounting surface.



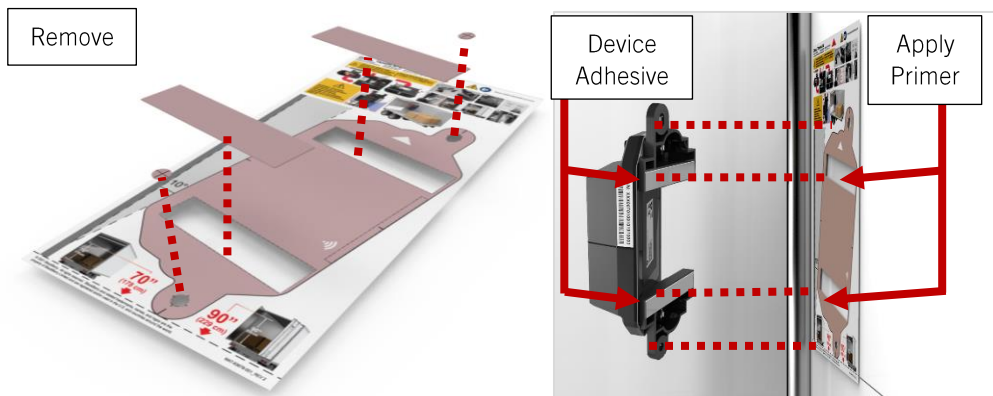
5. Mark the height where the module will be installed on the side wall of the container.
Tip: When you are marking the centerline on the trailer, we recommend continuing the mark along the ceiling for approximately 4" (10 cm).



6. Using the heat gun, raise the temperature of the of the installation surface. For best adhesion, the recommended installation surface temperature target is 68° F (20° C).
Tip: In most cold weather conditions, this installation surface temperature target is sufficient to allow the time to complete the subsequent steps, while remaining warm enough to improve adhesion for the adhesive.



7. Remove the perforated sections from the template. This will create precise boundaries that will identify areas where the 3M VHB Universal Primer will be applied to the wall (see Step 8B). Place the template onto the wall. Align the dashed line near the bottom edge of the template to the line on the wall.



8. Locate the 3M VHB Universal Primer ampule that was included in your adhesive kit. Apply the primer to the installation surface.

IMPORTANT: If the module will be installed on a plastic surface, also apply the primer to the installation surface. This will improve adhesion on plastic surfaces. This step is also recommended to improve cold weather adhesion for bare metal and painted metal surfaces.



To apply the primer:

- A) Crack the ampule at the “Crush at Dot” icon to release the primer and saturate the felt applicator tip, at the end of the tube.
- B) Once the primer has saturated the applicator, rub the felt tip where the tape will be applied to the module. If installing the module on a plastic surface, apply primer to the installation surface.



9. Remove the clear liner. Align the front edge of the module to the mark and place the module on the prepared mounting surface. Apply firm pressure (15 psi) to the module for 30-45 seconds to ensure the adhesive bonds to the mounting surface.



10. Installation is complete.



4 Removing BlackBerry Radar R2 modules

Use this procedure if you need to remove your BlackBerry Radar R2 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:

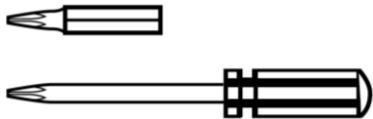

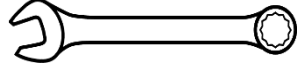
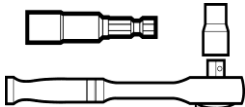

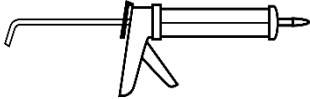
blackberry.com/RadarSupport--for information on service and the recycling and safe disposal of your device and battery.

Note: If you plan to ship your Radar R2 module, or Radar R2 battery, please be aware that the **battery, and the module when shipped along with the battery**, is considered Fully Regulated Class 9 Dangerous Goods in all modes of transportation (Air, Ocean, and Ground) and must only be shipped in special UN certified Dangerous Goods packaging. If you are returning the battery, or battery with module to BlackBerry, you may request this UN-certified packaging from BlackBerry. The Radar R2 module, when shipped **without** the battery, is not considered Dangerous Goods and can be shipped in any package.

Also, any person who handles, offers for transport, or transports Dangerous Goods must be adequately trained and hold a training certificate; or perform those activities in the presence and under the direct supervision of a person who is adequately trained and who holds a training certificate.

Products that are considered Dangerous Goods can only move on carrier accounts that are approved for Dangerous Goods and are subject to Dangerous Goods surcharges. The Radar R2 module, when shipped without the battery, are not subject to these surcharges.

4.1 Removal Tools

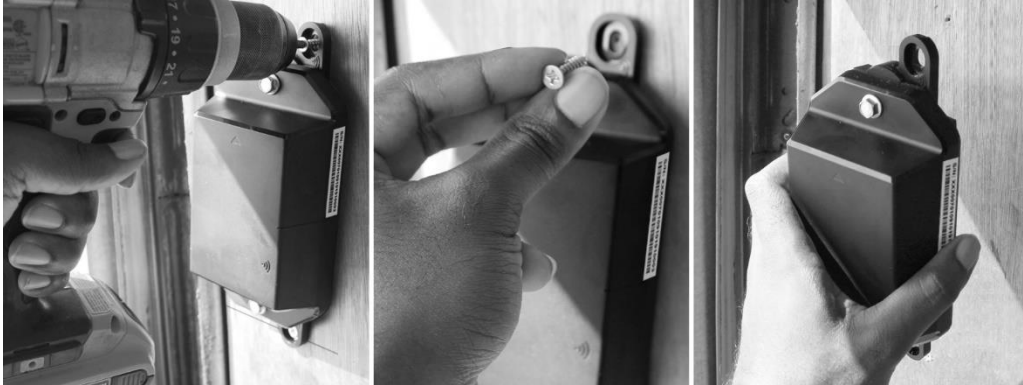
<p>Phillips (PH2) Screwdriver or Bit</p> 	<p>Drill</p> 	<p>Wrench</p>  <p><small>*Required only if nuts and bolts are used.</small></p>
<p>Nut Driver or Socket Wrench with Socket*</p>  <p><small>*Nut Driver + Drill offers fastest removal. If Nut Driver is unavailable, a socket wrench and socket may be used.</small></p>	<p>Safety Glasses</p> 	<p>Caulking Gun and Polyurethane Sealant</p>  <p><small>*Recommended for sealing holes.</small></p>

4.2 Module removal

Module removal approach will be determined by the installation method used.

Fastener Mounting Removal

1. If you have used fasteners in your installation, remove the fasteners from the asset and the module from the asset.



Adhesive Mounting Removal

1. Insert a tool between the bottom edge of the module and the mounting surface. Pry gently to separate the module from the installation.



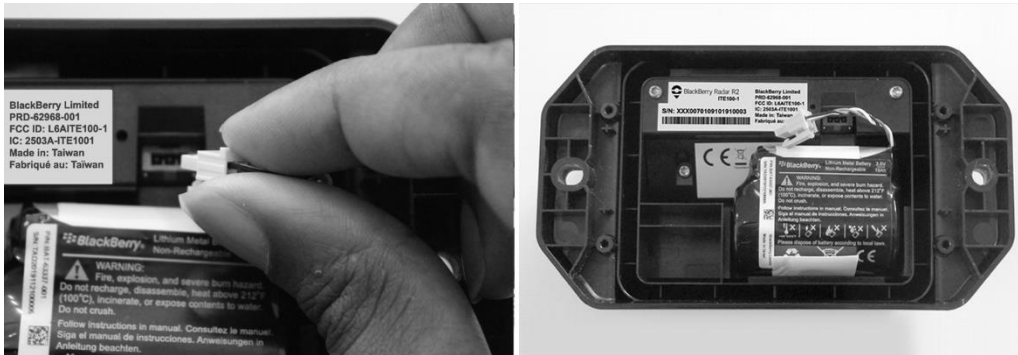
4.3 Battery removal and replacement

Battery removal

1. Remove the four screws from the back of the product and separate the inner housing from the outer housing to access the battery. Retain the screws as all screws will be required to re-secure the inner housing to the outer housing.



2. Disconnect the battery cable from the battery connector.



3. Remove the battery from the battery compartment by grasping the pull tab and lifting the battery out of the compartment.

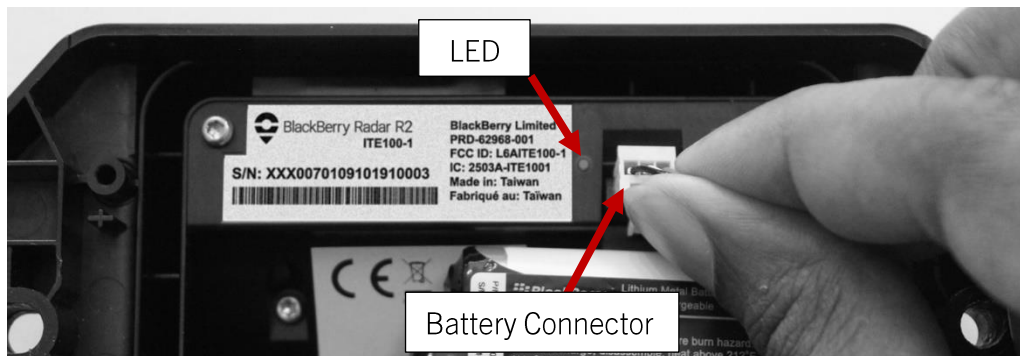


Battery replacement

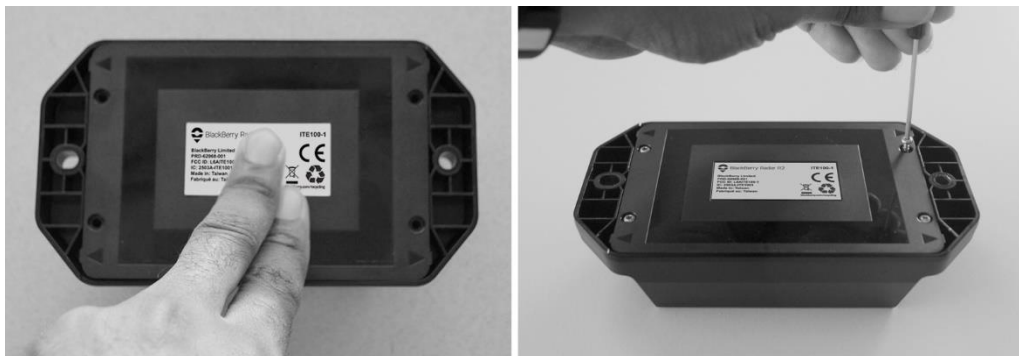
1. Place the battery into the battery compartment.



2. Connect the battery cable to the battery connector. The LED will blink to indicate the module is active. **NOTE:** It can take up to 5 seconds for the blink sequence to begin. Please be patient. Once you see the LED blink, continue to the next step.



3. Fully install the battery door. Locate the four battery door screws. Using a Phillips PH2 screwdriver, install the screws to secure the battery door.

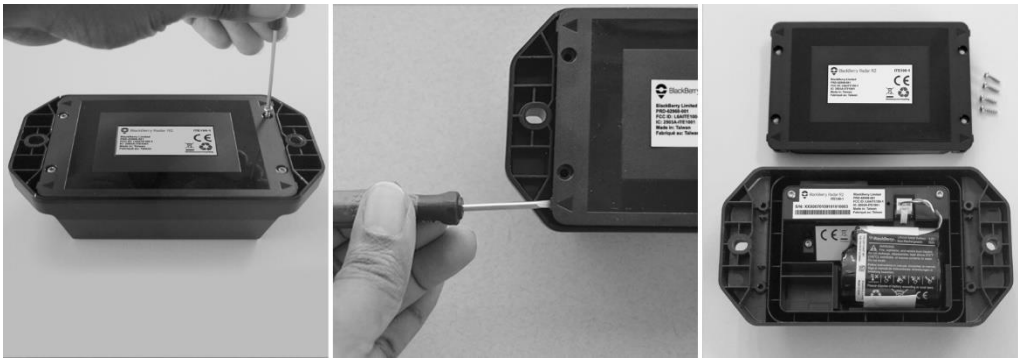


Preparing battery for shipment

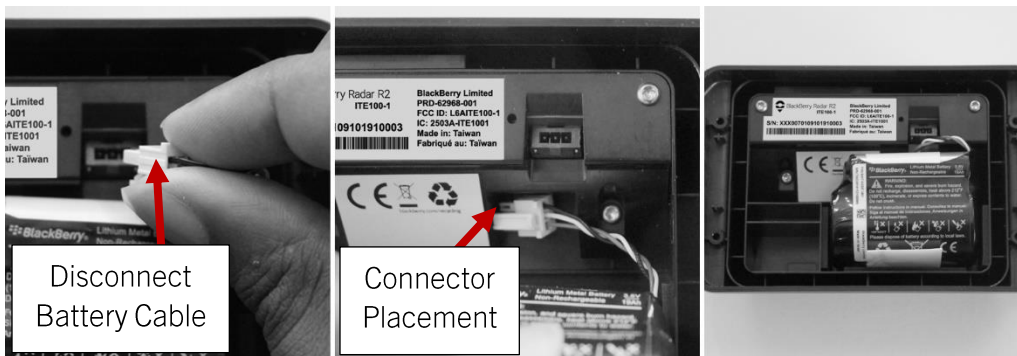
If you do need to ship the battery, along with the module, please follow this procedure.

IMPORTANT: Never ship the module with the battery cable connected. Battery must be shipped inside the module with battery cable disconnected and the battery connector placed under the battery.

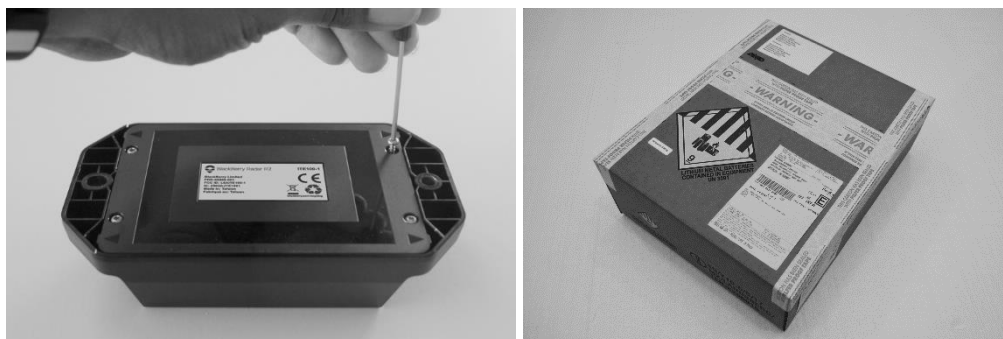
1. Remove the four screws from the battery door. Insert a tool at the arrows and lift upward to remove the battery door. Retain the screws as they will be required to re-secure the battery door to the rear housing.



2. Ensure the battery cable is disconnected from the battery connector. Lift the battery and tuck the connector under the battery. Return the battery to the battery nest.



3. Place the battery cover onto the module and install the screws. Module is now ready to be placed in the UN certified Dangerous Goods packaging.



4.4 Surface repair

After the module has been removed from the door, there will be holes in the door. There are various techniques that can be used to repair the holes. This section will discuss some approaches you may wish to use.

Method 1: Hole Plugs

1. With the module removed, measure the size of the holes.



2. Source a set of nylon or rubber plugs, of the appropriate diameter, to fill the holes. These plugs can be sourced from hardware or auto supply stores. Insert the plugs into the holes.

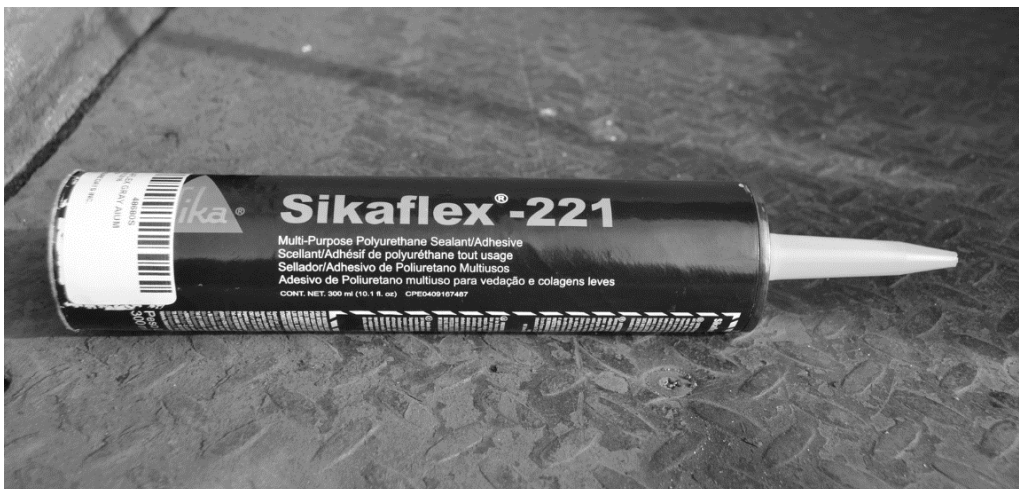


Method 2: Sealant

1. With the module removed, you'll have two holes.



2. Fill the holes with a weatherproof sealant. If desired, you may use 100% Silicone Exterior Grade caulk or Polyurethane Sealant.



Tip: For an improved appearance, you may use a sealant that matches the surface's color.

Method 3: Fasteners

1. With the module removed, you'll have two holes.



2. Drive the screws into the holes.



5 Support

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

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Published in Canada