BlackBerry Radar

BLACKBERRY RADAR-M

ITA100-1

February 2020

Chassis Bracket

Installation Guide

Table of Contents

1 Overview 3

2 Get ready for installation 4

3 Installing BlackBerry Radar-M Modules 5

3.1 Prepare to install 5

3.2 Installation tools 6

3.3 Matching a module identifier to an asset identifier 7

3.4 Module installation 9

4 Removing BlackBerry Radar-M Modules 21

4.1 Removal tools 21

4.2 Module removal 22

5 Support 26

Legal notice 27

1 Overview

This guide provides detailed instructions for installing BlackBerry Radar-M to the Chassis Bracket. It includes three main tasks:

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

- Enter assets into the BlackBerry Radar Dashboard
- Download the installation worksheet

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

- Match the module identifier with the asset identifier on the installation worksheet
- Installing the BlackBerry Radar-M device to the Chassis Bracket
- Install the BlackBerry Radar-M and Chassis Bracket Assembly to the trailer/container

Task 3: Activate the installed module (see Section 4)

- Associate the module identifier with the asset identifier in the BlackBerry Radar Dashboard
- Track the asset on the Dashboard map

Complete BlackBerry Radar documentation is available online when you log in to the BlackBerry Radar Dashboard. For instructions on how to configure the BlackBerry Radar Dashboard or how to modify your configurations, see the online Admin Guide. For instructions on how to use the BlackBerry Radar to view data, see the online User's Guide.

2 Get ready for installation

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

For instructions on how to download the worksheet:

- Log in to BlackBerry Radar Dashboard
- Access documentation from the main menu

3 Installing BlackBerry Radar-M modules

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

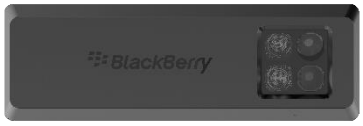
- Match each module identifier to its asset identifier
- Install each module to the accessory mounting bracket
- Install the module and bracket assembly to your asset.

Note: You must install each hardware module and bracket assembly horizontally. Vertically positioned modules are not supported.

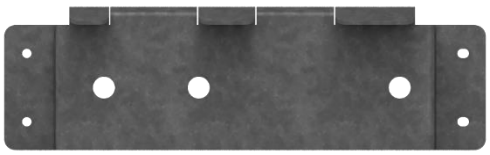
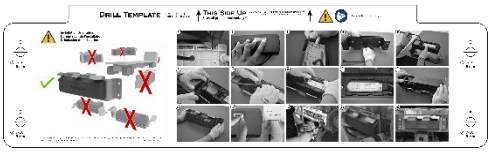
3.1 Prepare to install

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

Device Package Contents

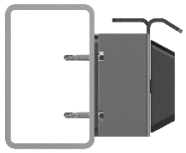
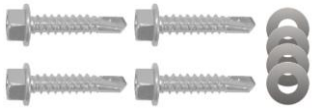
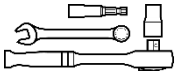
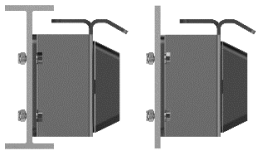
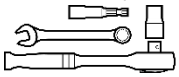
External module	
Internal module	
Two screws--M6 x 65	

Chassis Bracket Package Contents

Chassis bracket	
Chassis bracket drill template	

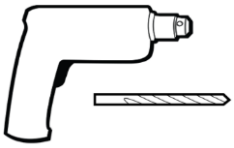
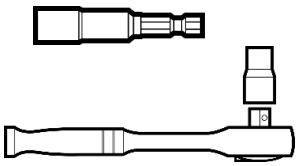
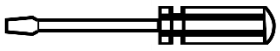
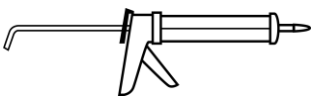
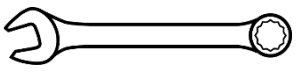
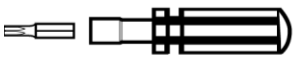
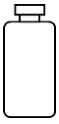
If you are missing any of the above components in your package, contact your BlackBerry Sales Representative.

To attach the bracket to the equipment you wish to track, you will need to supply four 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 (drill bits) and install or remove the fasteners (i.e. wrenches/sockets/drivers). An example is provided below.

Box Section 	**4 self-tapping screws and washers** (3/8" head, 1/4"-14 thread, 1-1/4" length) 	**Drill Bit** 3/16" (5mm) **Nut Driver/Socket/Wrench**  3/8" (10mm)
I-Beam or Panel Section 	**4 bolts, nuts, and washers** (7/16" head, 1/4"-20 thread, 1" length 1/4"-20 nut) (11mm head, M6 thread, 25mm length, M6 nut) 	**Drill Bit** 1/4" (6mm) **Nut Driver/Socket/Wrench**  7/16" (11mm)

3.2 Installation Tools

Required tools to complete the installation:

Allen Key or Hex Drive Bit (5 mm) 	**Drill and drill bits** 	**Cutting Lubricant* (Recommended)** *Recommended for faster drilling speed on thicker metals and longer drill bit life.
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** 	**Large Screwdriver (Flathead)** 
	Caulking Gun and Polyurethane Sealant 	**Wrench**  *Required only if nuts and bolts are used.
Metal Putty Knife 	**Torque Driver with Hex Bit*** (scale range of 1 N-m to 5.5 N-m, 8 in-lb to 49 in-lb) 	**70% Rubbing Alcohol** 	**Towel**

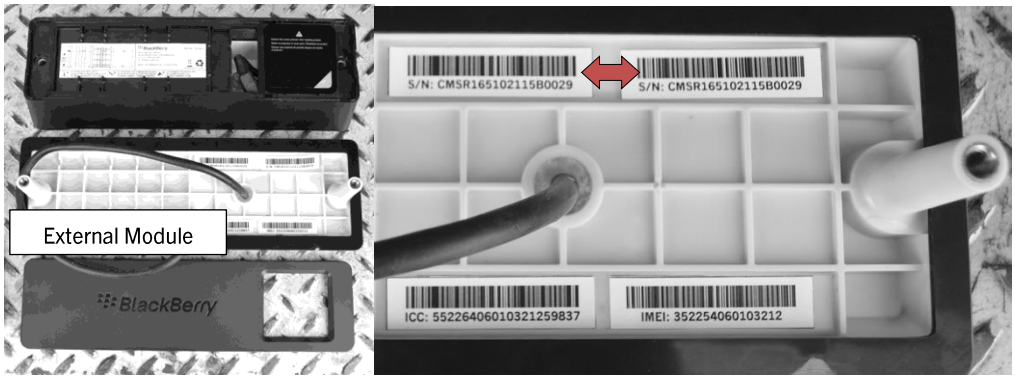
3.3 Matching a module identifier to an asset identifier

To track an asset (trailer/container), the Radar-M 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 Radar-M module is installed on which asset.

The Dashboard application tracks modules and assets using 'identifiers'. The asset identifiers are entered into the application when you add the assets and are listed on your installation worksheet. The identifier for each Radar-M device is printed on two labels attached to the back of the external module. The module identifier also serves as the serial number (S/N) for the device.

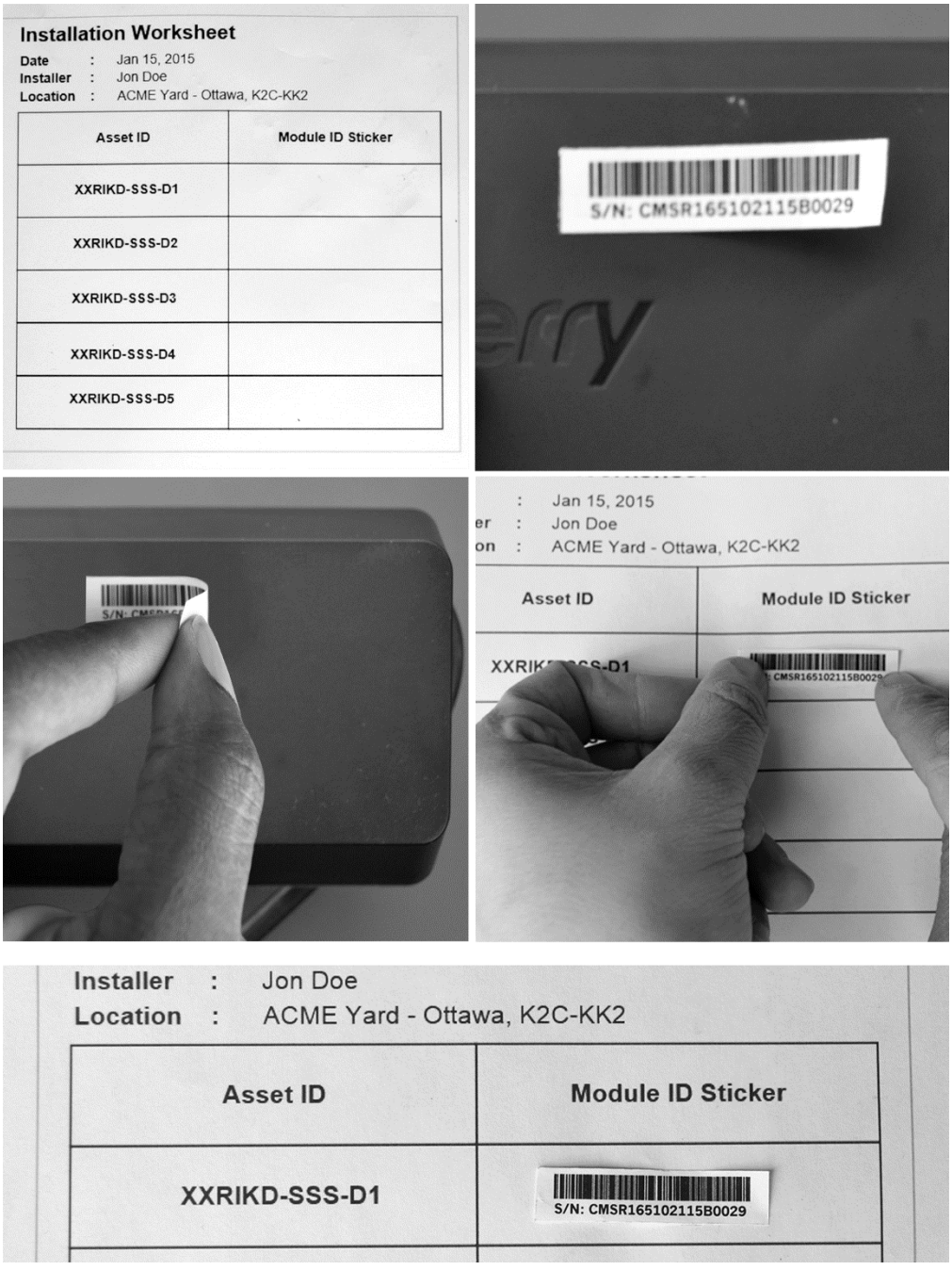
To match a module identifier with an asset identifier:

1. Locate the module identifier for your device. The module identifier is printed on two labels attached to the back of the external module.



2. Remove the partially attached label from the rear of the external module and place it on the outer surface of the external module. Following this approach will allow you to easily identify the module after it's assembled to the bracket. This is especially helpful if you are assembling a group of modules to brackets, prior to installing them on assets.

3. Once you are ready to install the assembly to the asset, be sure to bring your installation worksheet. Remove the partially attached label from the outer surface of the external module and place it on your worksheet, next to the asset identifier the device will be paired with.



3.4 Module installation

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

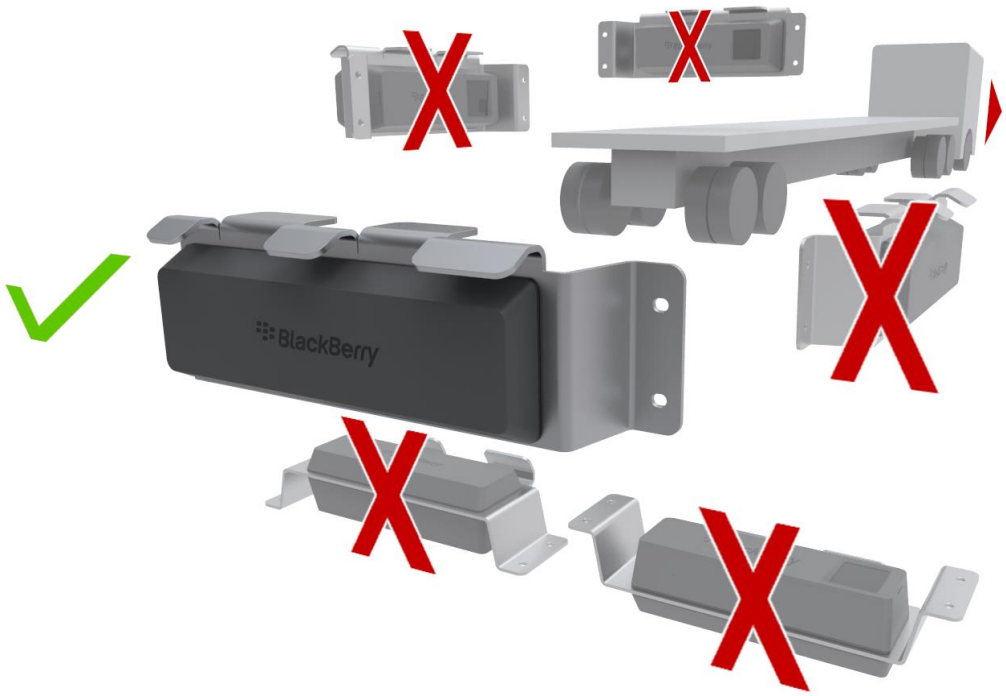
Do not place the assembly in a location where it is susceptible to damage from:

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

IMPORTANT: For accurate tracking, orientation matters.

- You must install each hardware module horizontally. Vertically positioned modules are not supported.
- Product must always be installed with the outer surface of the external module facing the rear of the asset. This will ensure the system reports the direction of travel, accurately.

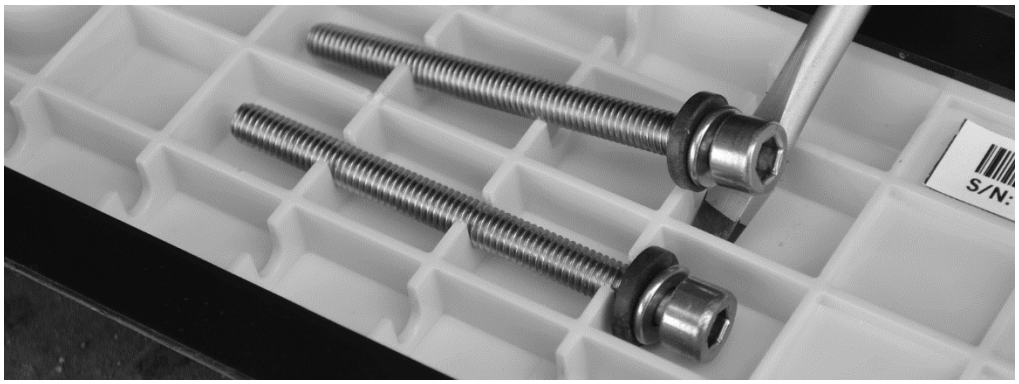
This diagram illustrates the proper installation orientation for the chassis bracket assembly.



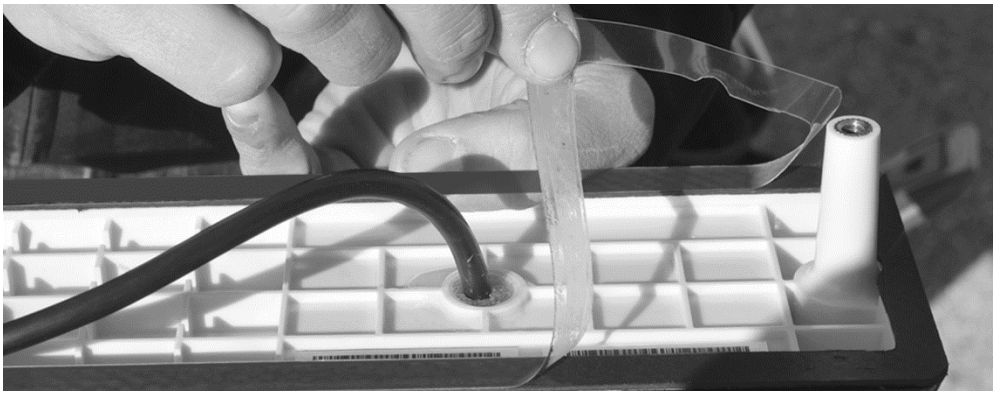
1. Remove the device from the package. Remove the cardboard spacers and place them in the device box.

2. Separate the internal module from the external module. To completely separate the two modules, you will need to guide the cable connector through the hole on the rear of the internal module.

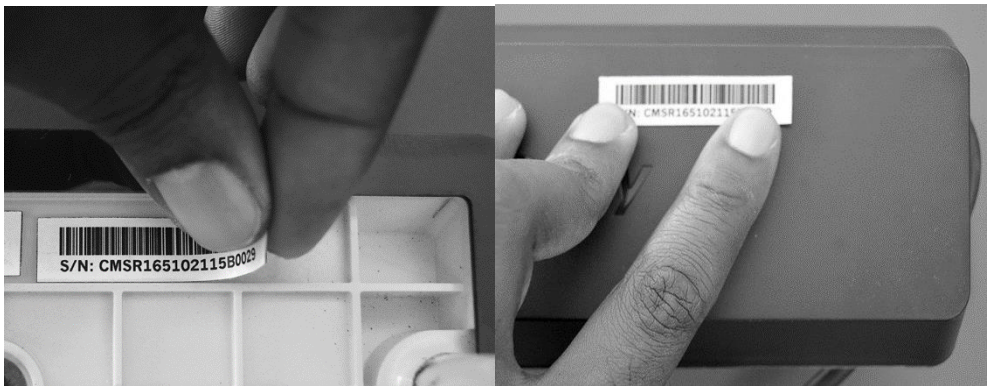
3. Remove the screws from the external module. Keep them nearby as you will need them to assemble the two modules to the chassis bracket.



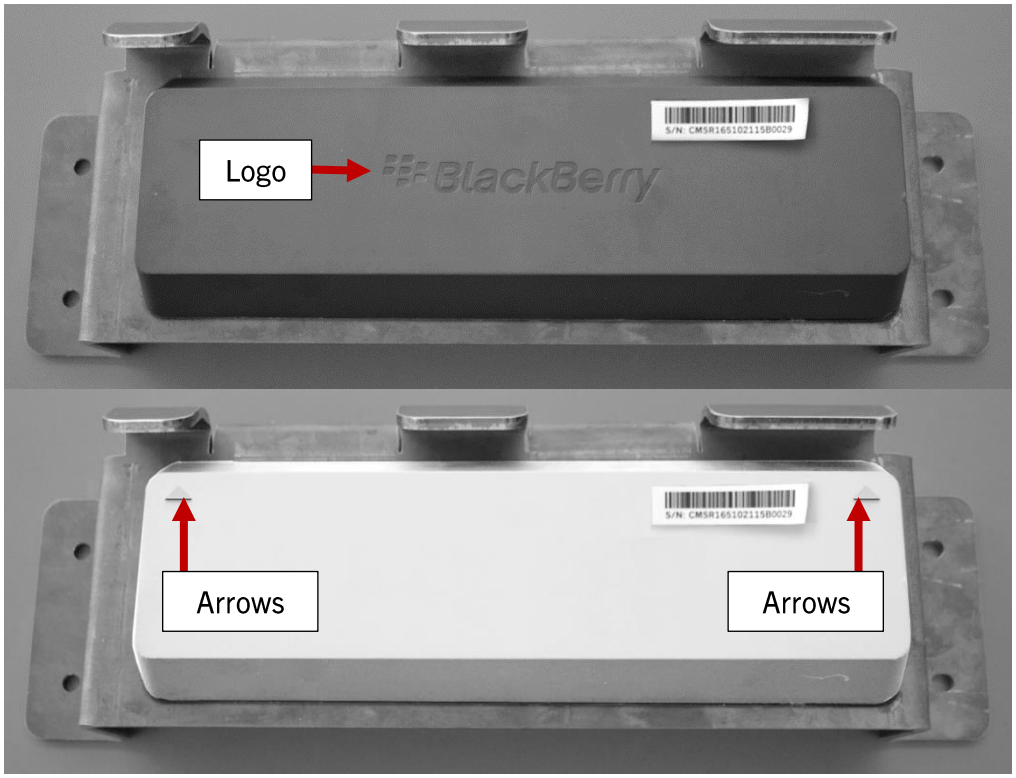
4. Remove the adhesive liner from the rear of the external module.



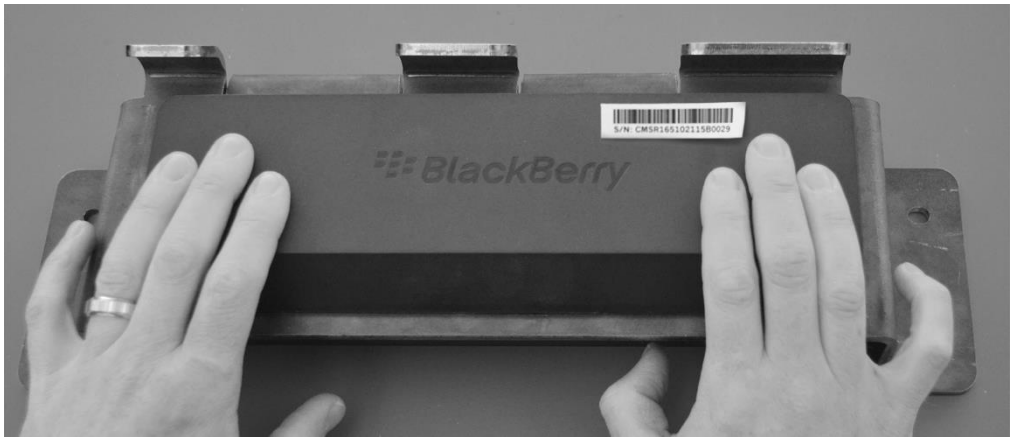
5. Remove the partially attached label from the top right corner of the external module and place it on the outer surface of the external module.



6. Guide the cable connector and the cable through the middle hole of the chassis bracket. Insert the screw bosses into the remaining two holes. Depending on your model, you can confirm proper orientation by:
   A. Ensuring the BlackBerry logo on the external module appears, as shown.
   B. If your device does not have a logo, ensure the arrows are pointing up.



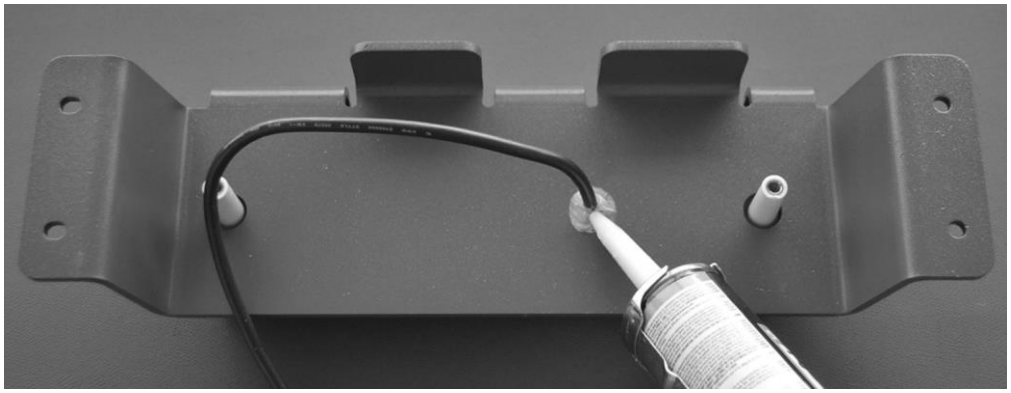
7. Apply firm pressure to the external module for 30-45 seconds to ensure it adheres to the bracket. The adhesive will hold the external module in place while you complete the installation.



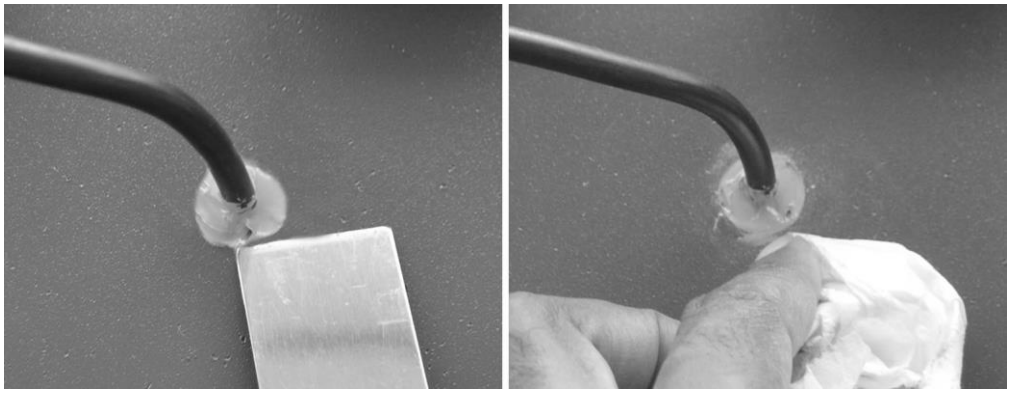
Note: To provide protection against water ingress, fill the hole around the cable with polyurethane sealant. Following this procedure will prevent water that accumulates along the edge of the device and bracket surface from falling behind the external module and entering the device along the cable path.

Polyurethane Sealant Example

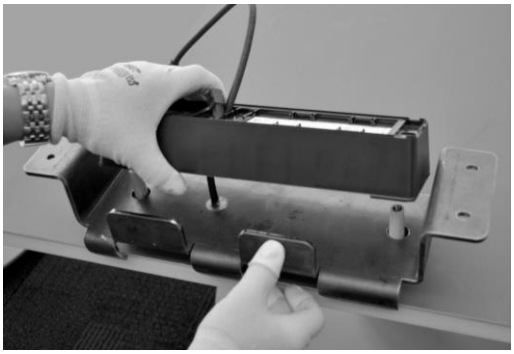
8. From the rear of the bracket, locate the hole with the cable. Dispense the polyurethane sealant in the hole, around the entire cable.



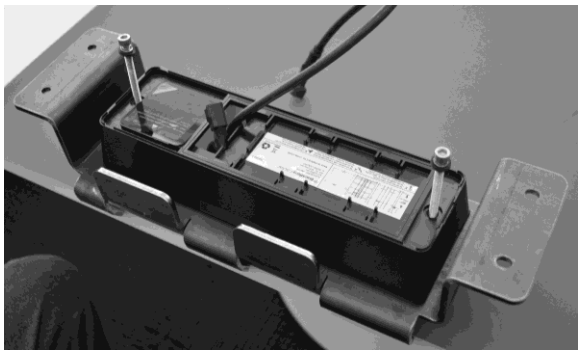
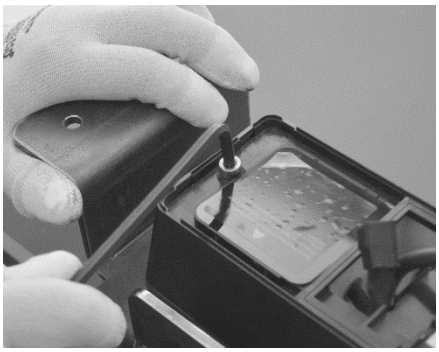
If the sealant expands on to the internal door surface, be sure to remove the excess sealant from the bracket surface. To successfully complete the installation, it is important the device is installed flush to the installation surface. Excess sealant can be removed with a putty knife, and a towel saturated with alcohol.



9. From the rear of the bracket, locate the cable, and guide the cable connector through the hole at the rear of the external module. Guide battery module along the cable, towards the bracket, and place the module onto the screw bosses.

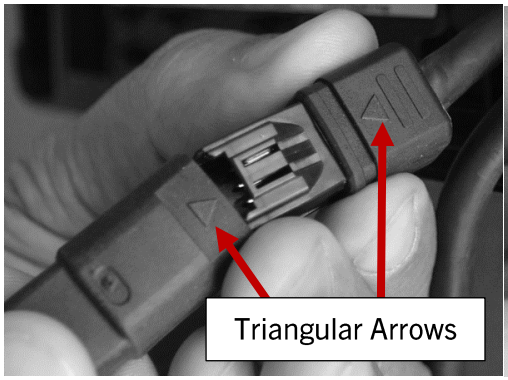


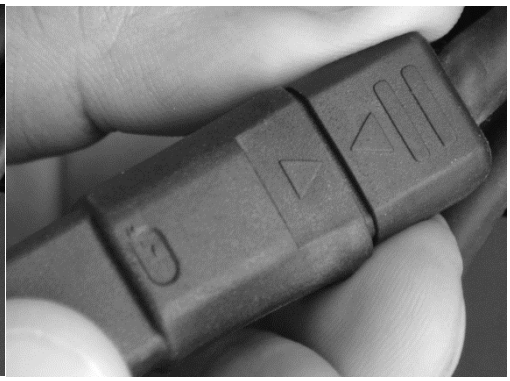
10. Place the screws into the screw bosses. Use the screws to fasten the modules to the bracket.

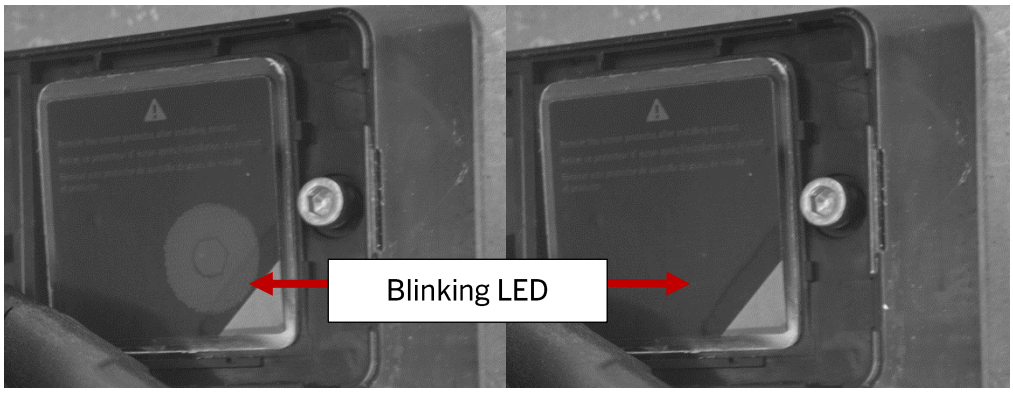
Tip: For faster screw installation, you may install a 5 mm Hex Bit or a T-30 Torx bit on a cordless drill. If you use a drill to tighten the device, please use caution to avoid over tightening the screws. Do not exceed 48 in-lb. or 5 N-m.

11. Connect the cables by following these steps:
    - Locate the triangular arrows on each connector. Position the cables so those features are pointing to each other.
    - Push the cables together. You will hear an audible click once the connector's locking features engage.



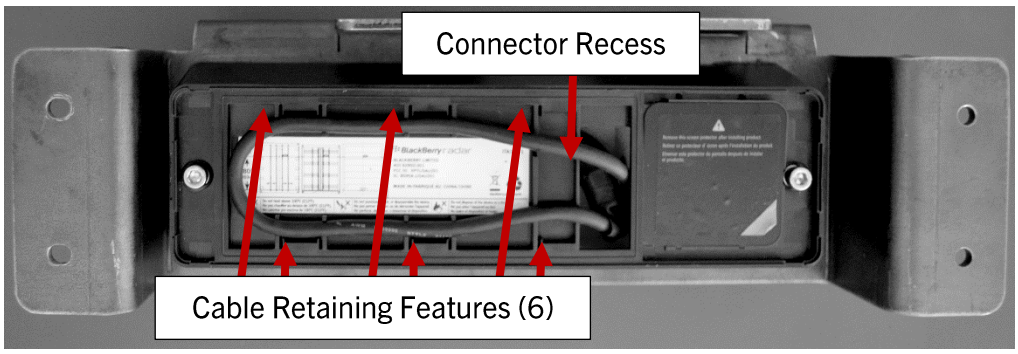


12. After completing the cable connection, the LED will blink for approximately ten seconds. This blinking LED indicates the device is powered on. **Please note:** it can take 20-30 seconds after the cables are connected for the LED to start blinking.

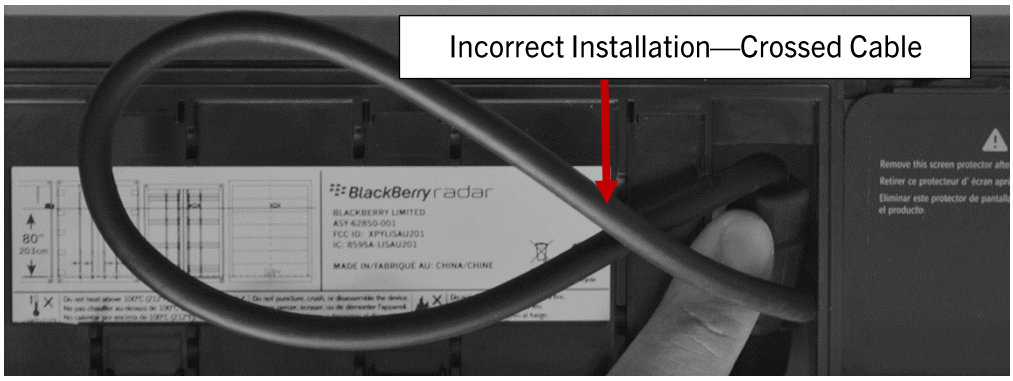


NOTE: For installations using the chassis bracket, you may leave the lens overlay in place to protect the lens, as the sensors for load detection (located under the overlay) will not be used in these installations.

13. Stow the cable connectors in the cable connector recess. Secure any excess cable in the cable retaining features.

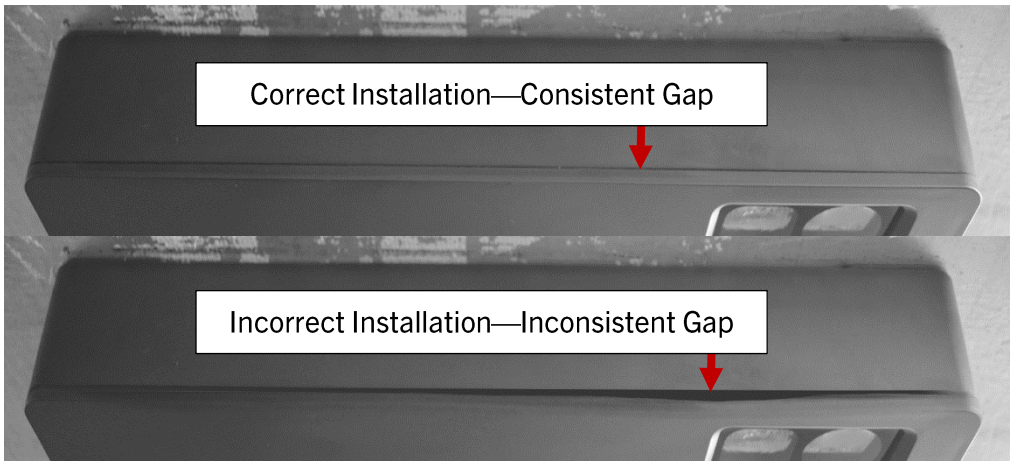


Tip: When placing the cable connectors inside the cable connector recess, take care to avoid crossing the cable over itself. Doing so can make it more difficult to secure the cable and attach the lid.



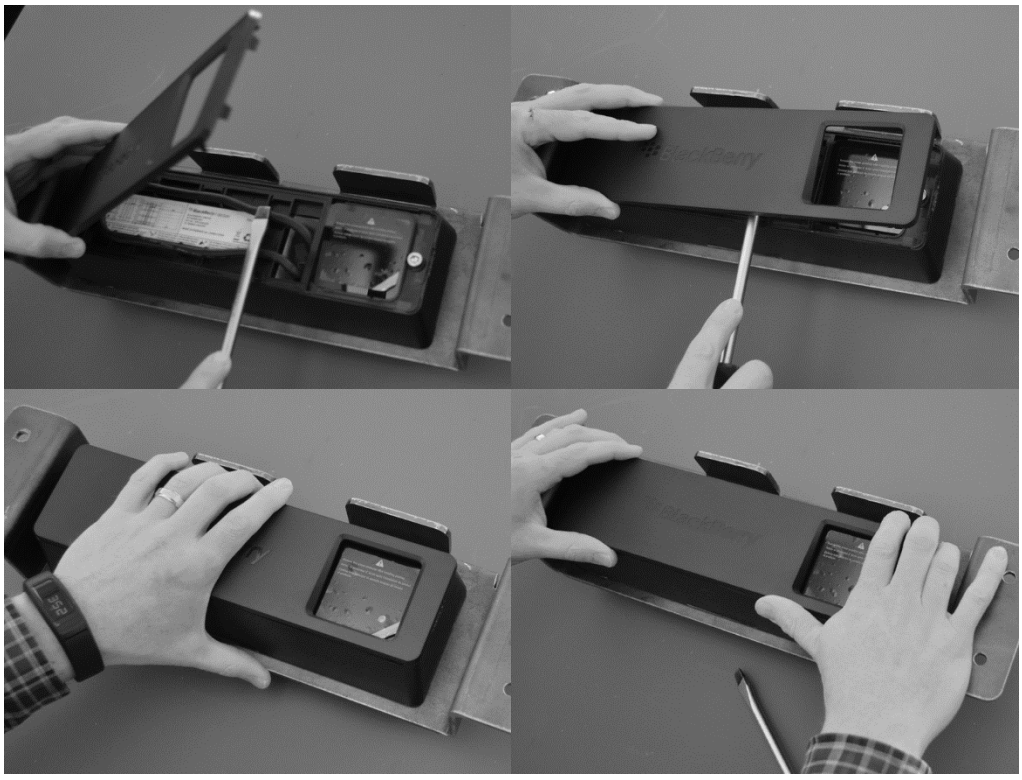
14. Install the lid onto the internal module. Ensure lid is completely attached to the device and all snaps have been completely engaged.

The following pictures show the difference between a properly installed lid, where all snaps are engaged, and an improperly installed lid.

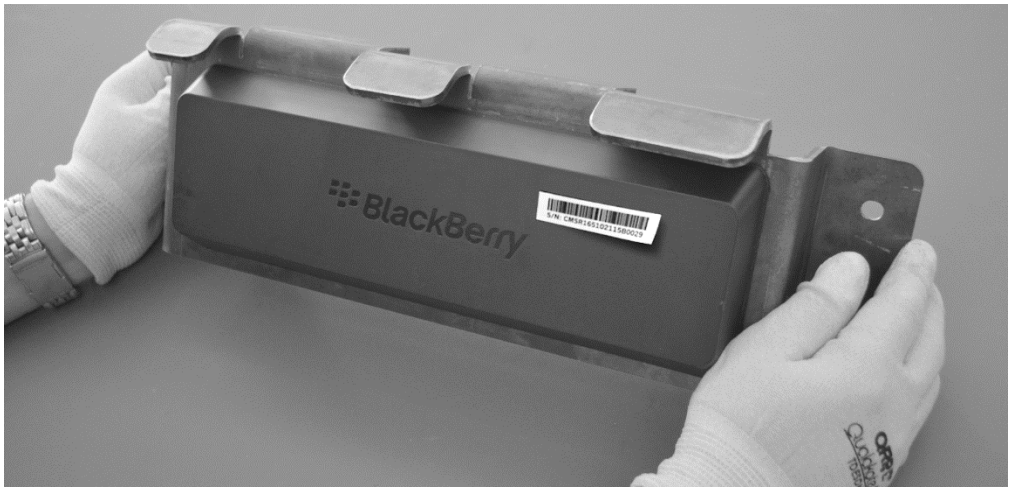


Tip: If you are finding it difficult to install the lid due to cable interference, you may try the following technique.

15. Using a screwdriver, or your finger, apply enough force to prevent the cable from lifting. While holding the cable in place, begin to attach the lid to the device. Starting from the left side and working across the device to the right, snap the lid into place.

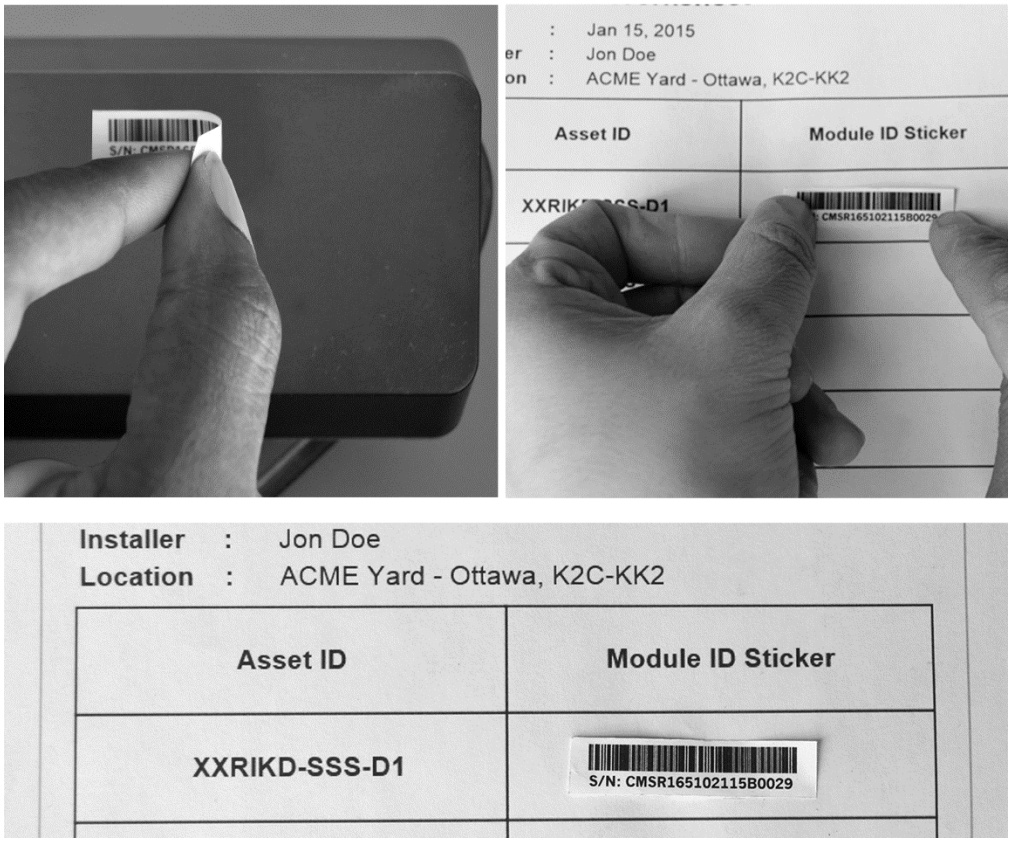


16. The device modules are now attached to the chassis bracket, forming the chassis bracket assembly. In the next section, you will learn how to attach the chassis bracket assembly to your asset.

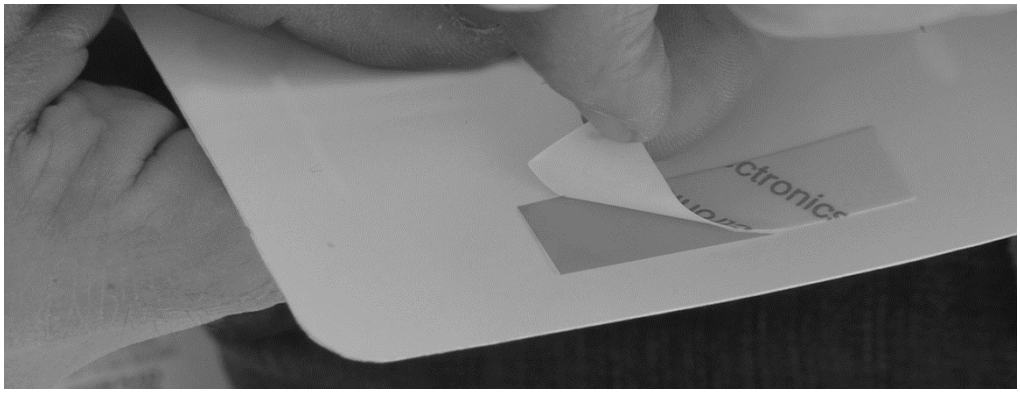


3.4.1 Mounting the Chassis Bracket Assembly to the Asset

17. Once you have reached the asset on which you will install the device, transfer the module identifier label from the external module and place on your installation worksheet.



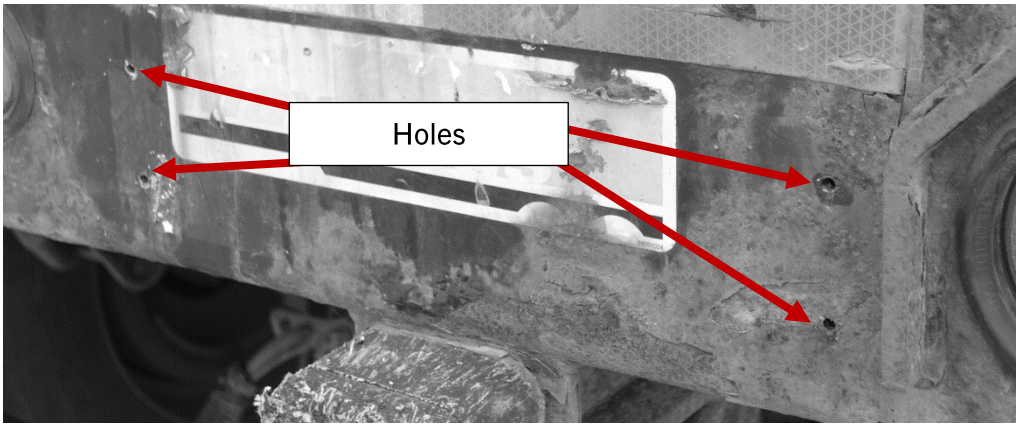
18. Remove the adhesive liner from the drill template. The adhesive ensures the template remains on the mounting surface for accurate drilling of your holes.



19. Place the template in the desired mounting location. Using a drill bit, drill a hole through each crosshair indicator on the template.

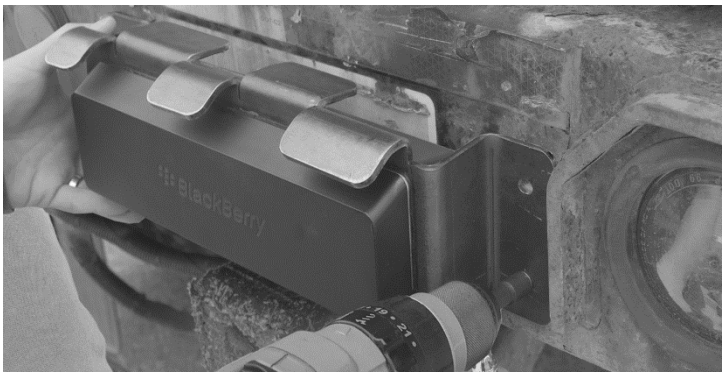
Note: To shorten drilling time and prolong the life of your drill bit, you may wish to use cutting tool lubricant during the drilling process.

20. Remove the template. You now have four holes in the mounting surface. If there are any burrs around the holes, remove them at this time. Also, remove any dust or debris left over from the drilling or de-burring operations.

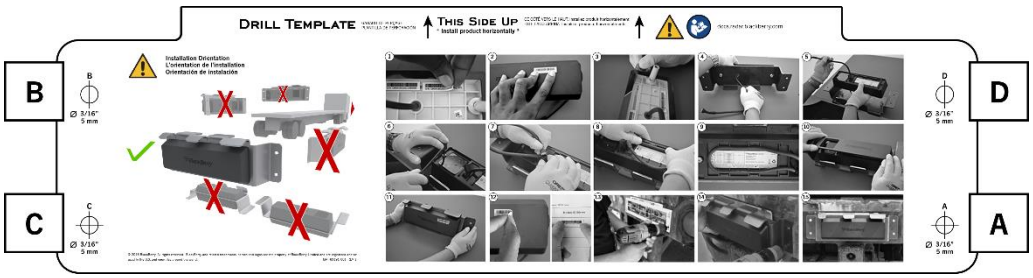


21. Place the chassis bracket assembly on the mounting surface, aligning the holes on the bracket with the hole on the asset. Place the washer on the fastener, then insert the fastener into the hole on the bracket and the hole in the asset. Use the fasteners to attach the chassis bracket assembly to the asset.

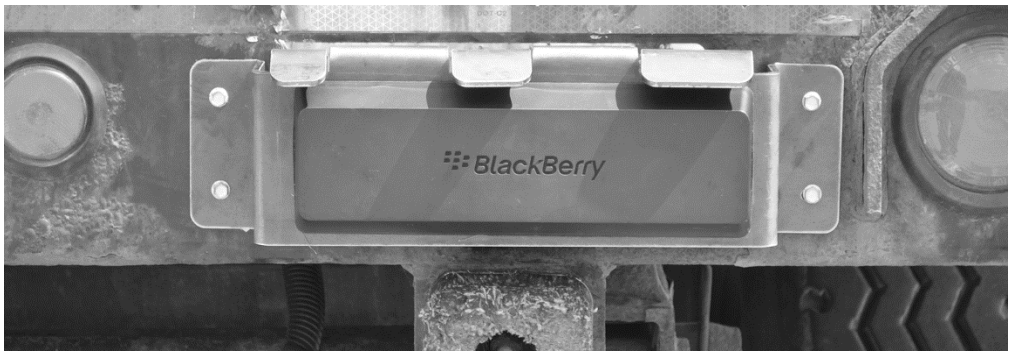
> **Note:** Depending on your asset's construction you may wish to use the following fastener types to complete the installation.
> Self-Tapping Screws—best for mounting onto boxed sections
> Nuts and Bolts—best for mounting on surfaces with open cross-sections



Tip: To help make installation easier, you may install the fasteners according to the sequence indicated on the template. This installation sequence will best support the weight of the bracket assembly, while you are installing the other fasteners.



22. Installation is now complete.



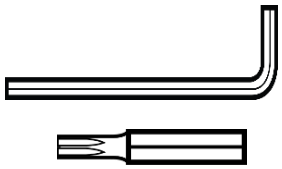
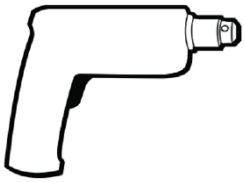
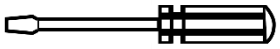
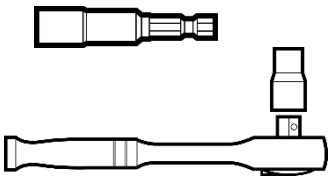
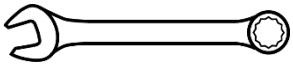
4 Removing BlackBerry Radar-M modules

Use this procedure if you need to remove your Radar-M device and chassis bracket 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

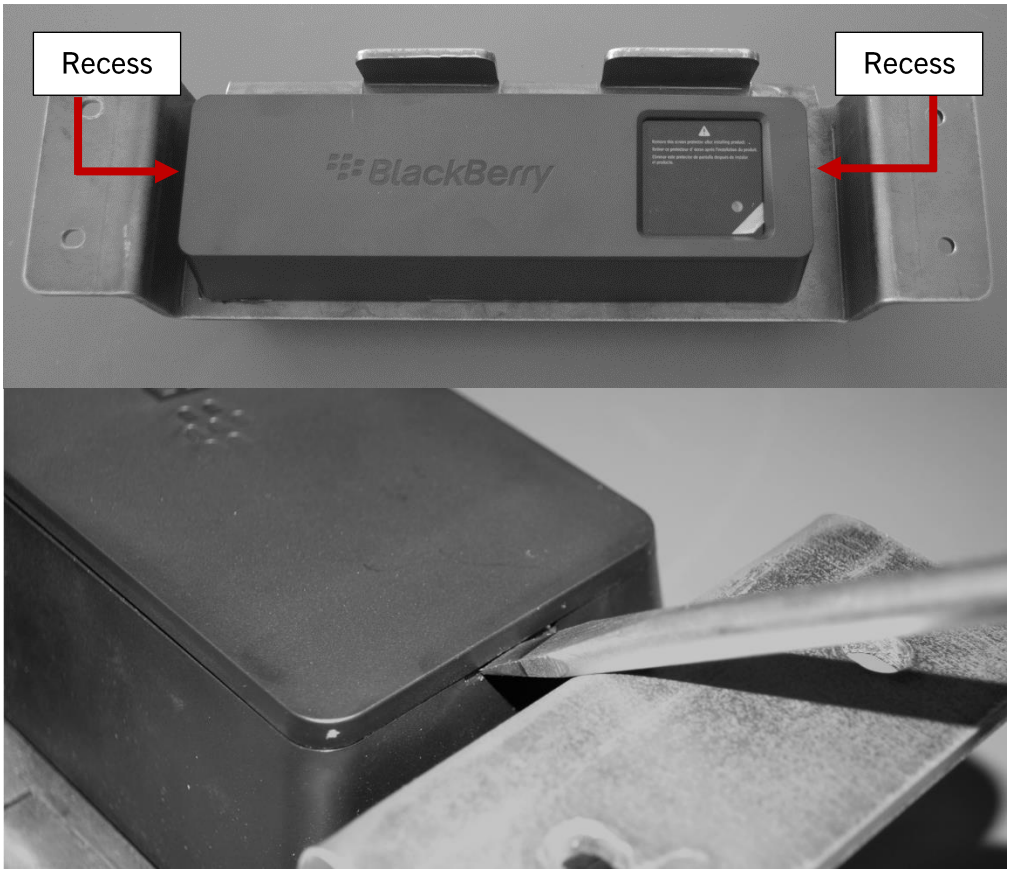
Required tools to complete the removal:

<table>
<tr>
<td>Allen Key or Hex Bit (5 mm)
  </td>
<td>Drill
  </td>
<td>Metal Putty Knife
 </td>
</tr>
<tr>
<td rowspan="2"></td>
<td rowspan="2"></td>
<td>Large Screwdriver (Flathead)
  </td>
</tr>
<tr>
<td>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.</td>
<td>Safety Glasses
 </td>
<td>Wrench
 
*Required only if nuts and bolts are used.</td>
</tr>
</table>

4.2 Module removal

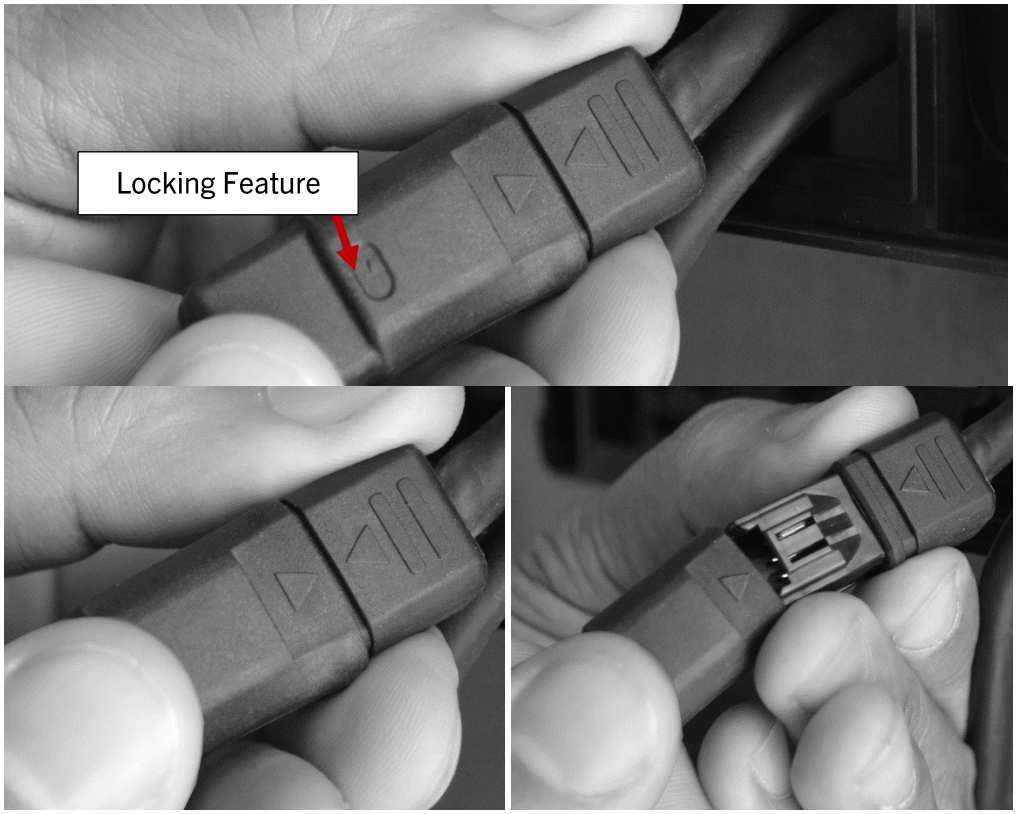
1. Remove the chassis bracket assembly from the asset by removing the four fasteners from the corners of the bracket.

2. Position the chassis bracket assembly with the internal module facing up. Remove the lid by inserting a large, flat head screwdriver into to the recesses on the side of the internal module and applying upward pressure.

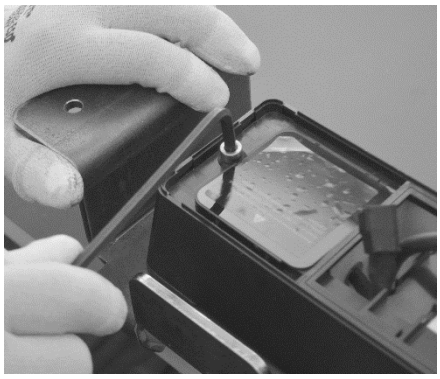
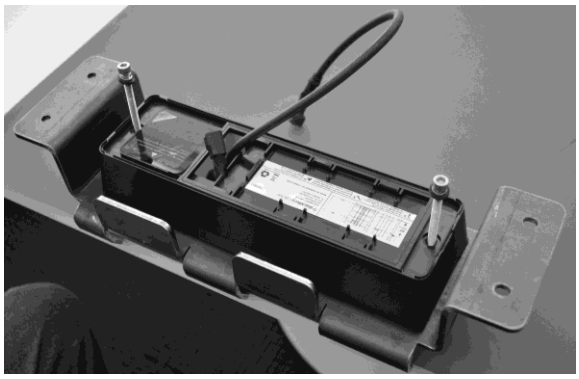


3. Remove the cable from the cable retaining features and remove the cables from the cable connector recess.

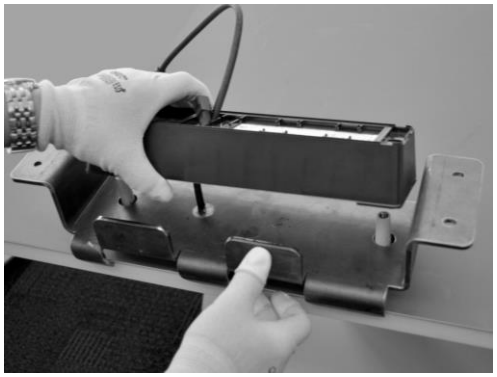
4. Disconnect the cables.
    - Position the connectors so the indicator marks are facing you. This will assist you in identifying the location of the connector lock release feature. This feature is the pill-shaped depression near the end of the connector jacket.
    - Press and hold the connector lock release feature while pulling the cables apart. This will disengage the connector lock, allowing you to disconnect the cables.



5. Remove the screws from the device.
   Tip: For faster screw removal, you may use a 5mm Hex bit or a T-30 Torx bit on a cordless drill.

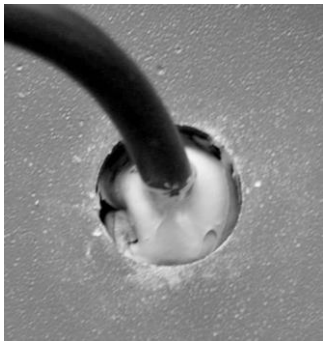
6. Remove the internal module from the bracket. Guide the device along the cable and the connector through the hole on the internal module.



Sealant Removal Procedure

From the rear of the bracket, check for sealant in the hole around the cable. When you find the sealant, follow the following steps to separate the sealant from the bracket to remove the cable.

- Insert a flat head screwdriver around the outer edge of the sealant.
- Press the screwdriver completely through the sealant.
- Repeat this procedure around the entire diameter of the sealant to ensure the outer edge of the sealant is completely separated from the bracket material.



7. Separate the external module from the bracket using the following technique.

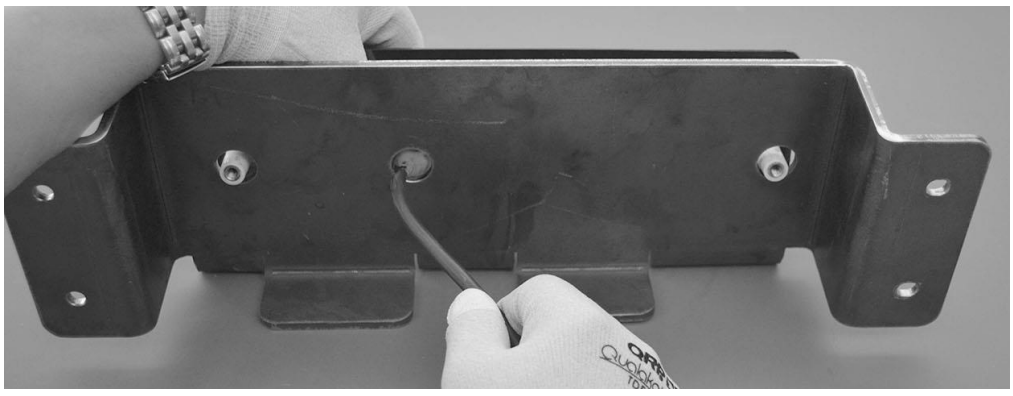
> **IMPORTANT:** Do not attempt to separate the device from the bracket using a heat gun. This can damage the device.
>
> Avoid striking the device with a hammer. Repeated strikes with a tool can damage the device.

At the bottom corners of the external module, insert a tool between the back of the external module gasket and the bracket surface. Apply gentle upward pressure on the tool to separate the module from the bracket. Repeat until external module is separated from the bracket. When using this approach, please exercise caution to avoid greatly damaging the sealing gasket.

Tip: A wide flat blade, made from durable material (e.g., a metal putty knife) works well for this purpose.

> **IMPORTANT:** Do not attempt to separate the device from the bracket using a heat gun. This can damage the device.

Remove the external module from the bracket. Guide the cable and the connector through the hole on the bracket. This completes the device removal.



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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