BlackBerry Radar

BLACKBERRY RADAR H2M IS ITH100 – 1

June 2023

Containers

Installation Guide

Table of contents

1 Overview

This guide provides detailed instructions for installing and activating new BlackBerry Radar H2M IS modules. It includes three main tasks:

Task 1: Get ready for installation (see Section 2)
Task 2: Install a BlackBerry Radar H2M IS 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 6)

- Remove the module from the asset.
- Prepare the device for shipping.
- Post-removal door 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 Safety and Product Information

Before you start using the BlackBerry Radar H2M IS™ device (herein after referred to as device), review the safety and regulatory information provided in this document. Keep this document in a safe place so that you can refer to it whenever you need it.

In some countries there may be restrictions on using wireless devices with encryption software. Check with your local authorities for the restrictions in your area.

To find the latest safety and product information, visit:
docs.radar.blackberry.com/guides/user_guide_safety

Important safety precautions

	Do not use the device or magnet near medical devices, including pacemakers and hearing aids, because they might malfunction and cause serious harm or death to you or others.
	Do not dispose of the device, in a fire because this might cause an explosion resulting in serious injury, death, or property loss.
	Do not attempt to install the device or open the device when an explosive atmosphere is present.
	The device is designed to be operated in temperatures between -40 and 85°C (-40 and 185°F). Store device in temperatures between 10 and 30°C (14 and 86°F) and 0-50% humidity. Do not expose the device to temperatures above 100°C (212°F). Use of the device outside of the recommended temperature range could cause damage to the device or lithium-metal battery.
	Do not submerge the device in water.
	Do not puncture, crush, or expose battery to severe physical shock. Do not attempt to disassemble battery pack. Do not short-circuit the battery or allow metallic or conductive objects to contact the battery terminals.
 	Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
	Exposure to some chemicals may degrade the sealing properties of materials used in the device. Avoid exposing your device to these chemicals.
	This equipment is not suitable for use in locations where children are likely to be present.
	Keep device magnets away from small children. Potential choking hazard.

Product information: BlackBerry Radar H2M IS ITH100-1

Intrinsic safety warnings

Warning markings
WARNING—DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
WARNING—POTENTIAL ELECTROSTATIC CHARGING HAZARD—SEE INSTRUCTIONS
WARNING – DO NOT REMOVE OR REPLACE WHILE CIRCUIT IS LIVE UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS OF FLAMMABLE GASES OR VAPORS

Mechanical properties:

Weight: Approximately 1069 g (37.7 oz.)
Size: (L x W x H): 314 x 97 x 43.5 mm (12.4 x 3.8 x 1.7 in.)

Electrical Rating / Battery specifications:

Battery operated device
Non-rechargeable lithium-metal battery, Non-user replaceable
7.2V, 38Ah nominal

Environmental properties:

Enclosure Type: IP67/IP69K
Operating Temperature Range: -40 to 85°C (-40 to 185°F)
IECEX/ATEX/cETLus Temperature Range: -40 to 70°C (-40 to 158°F)

Hazardous locations

Hazardous location markings		
IECEX	**ATEX**	**cETLus**
Ex ia IIC T4 Ga	CE 2903	Class I, Division 1, Groups A, B, C, D ; T4
Ex ia IIIC T135°C Da	Ex II 1GD	Class I, Division 2, Groups A, B, C, D ; T4
	Ex ia IIC T4 Ga	Class II, Division 1, Groups E, F, G ; T4
	Ex ia IIIC T135°C Da	Class I, Zone 0, AEx ia IIC T4 Ga
		Zone 20, AEx ia IIIC T135°C Da
		Ex ia IIC T4 Ga
		Ex ia IIIC T135°C Da

Relevant standards

Standards	
IECEx	**Subject**
IEC 60079-0:2017 Ed. 7	Part 0: Equipment – General requirements
IEC 60079-11:2011 Ed. 6	Part 11: Equipment protection by intrinsic safety ''i''
ATEX	
EN IEC 60079-0:2018	Part 0: Equipment – General requirements
EN 60079-11:2012	Part 11: Equipment protection by intrinsic safety ''i''
cETLus	
CSA C22.2 No. 60079-0:2019 UL 60079-0:2019	Part 0: Equipment – General requirements
CSA C22.2 No. 60079-11:2014 CSA C22.2 No. 60079-11:2013	Part 11: Equipment protection by intrinsic safety ''i''
UL 913- 8th Edition ANSI/ISA–12.12.01–2000	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations

Radio specifications:

Radio specification	**MAX radio conducted power information (EIRP):**
LTE B1: 1920~1980 MHz	LTE B1: 26.90 dBm
LTE B2: 1850~1910 MHz	LTE B2: 26.63 dBm
LTE B3: 1710~1785 MHz	LTE B3: 27.20 dBm
LTE B4: 1710~1755 MHz	LTE B4: 26.06 dBm
LTE B5: 824~849 MHz	LTE B5: 25.39 dBm
LTE B8: 880~915 MHz	LTE B8: 24.80 dBm
LTE B12: 698~716 MHz	LTE B12: 22.72 dBm
LTE B13: 777~787 MHz	LTE B13: 23.97 dBm
LTE B20: 832~862 MHz	LTE B2: 24.92 dBm
LTE B25: 1850~1915 MHz	LTE B25: 26.29 dBm
LTE B26: 814~849 MHz	LTE B26: 22.84 dBm
LTE B28: 703~748 MHz	LTE B26: 23.93 dBm
LTE B66: 1710~1780 MHz	LTE B66: 27.40 dBm
LTE B85: 698~716 MHz	LTE B85: 23.97 dBm
869.85 MHz	869.85 MHz: 9.04 dBm
915 MHz: 902~928 MHz	915 MHz: 18.97 dBm
2.4 GHz: 2405~2480 MHz	2.4 GHz: 16.55 dBm

Bands for FCC/ISED include: B2/B4/B5/B12/B13/B25/B26/B66/B85.
869.85 MHz will be used for CE frequency band and 915 MHz will be used for FCC and ISED frequency band.

Operating temperature and humidity

The BlackBerry Radar H2M IS device is designed for the following temperature and humidity ranges:

Operation:	**Storage:**
Temperature: (-40 to 85°C) -40 to 185°F	Temperature: -10 to 30°C (14 to 86°F)
Humidity: 0-100%	Humidity: 0-50%

Battery safety

The device contains a non-rechargeable, Lithium Metal battery. Do not attempt to recharge the battery.

To preserve the Intrinsic Safety of the device, the battery is not user replaceable. If your device requires a battery replacement, please contact your BlackBerry representative to coordinate battery replacement for your devices.

The battery might present a fire, explosion, chemical burn, or other hazard if mistreated. Do not put the battery in contact with liquids. Do not heat the battery above 100°C (212°F). Heating the battery above 100°C (212°F) could cause the battery to catch fire or explode.

Antennas

Use only the supplied integrated antennas. Unauthorized antenna modifications or attachments could damage the device and might violate U.S. Federal Communications Commission (FCC) or other regulations.

Repair and maintenance

Do not attempt to modify, disassemble, or service the device. Do not attempt to recharge, or replace, the battery. Only qualified service personnel should perform repairs, or battery replacements, to the device.

Failure to observe all safety instructions contained in the user documentation for the device will void the Limited Warranty and might lead to suspension or denial of services to the offender, legal action, or both.

Device, magnet, and battery disposal

	Do not dispose of the device, magnet, or battery, in household waste bins or in a fire. Please dispose of magnets in accordance with the laws and regulations in your area. All permanent magnets should be thermally demagnetized prior to disposal or placed in a steel container prior to disposal so the magnets do not attract waste disposal equipment or refuse container.

	The device and battery are recyclable where facilities exist. This symbol is not intended to indicate the use of recycled materials. The Lithium Metal Batteries used in BlackBerry Radar can pose risk of fire, explosion and severe burn hazard if mishandled or damaged. These batteries should never be placed in regular waste and must be recycled through appropriate e-waste or battery recycling channels. Ensure you dispose of your BlackBerry Radar device and its battery in accordance with the laws and regulations in your area. If you have an **existing waste management partner**, please consult with them regarding disposal, or visit BlackBerry.com/RadarSupport for more information. Only use BlackBerry battery BAT-63705-001 or BAT-63705-002 in the BlackBerry Radar H2M IS Device. Refer to the BlackBerry Radar Battery Information Sheet for details on dimensions, weight, and Lithium content per battery. Safety Data Sheets can be provided upon request.

Compliance information

Exposure to radio frequency signals

The device radio is a low-power radio transmitter and receiver. It is designed to comply with Federal Communications Commission (FCC) and Innovation, Science and Economic Development Canada (ISED), and The Council of the European Union guidelines and limits, as well as other relevant international guidelines regarding safety levels of radio frequency exposure for wireless devices. These guidelines were developed by independent scientific experts, governments, and organizations including the Institute of Electrical and Electronics Engineers Standard (IEEE), National Council on Radiation Protection and Measurements (NCRP), and International Commission on Non-Ionizing Radiation Protection (ICNIRP).

FCC compliance statement (United States)

This device complies with Part 15 of the Federal Communications Commission (FCC) Rules under FCC ID: L6AITH100-1. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION:
Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

NOTE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This

equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Innovation, Science and Economic Development Canada certification

This device complies with Innovation, Science and Economic Development Canada (ISED) license-exempt RSS standard(s). Operation is subject to the following conditions:
(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.

This device complies with ISED RSS 130, RSS 132, RSS 133, RSS 139 and RSS-GEN under Certification Number 2503A-ITH1001.

Le présent appareil est conforme aux Innovation, Sciences et Développement économique Canada (ISED) applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout broillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

L'appareil est conforme aux normes ISED RSS 130, RSS 132, RSS 133, RSS 139 et RSS-GEN sous le numéro d'agrément 2503A-ITH1001.

Radiation exposure statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 23 cm between the radiator and your body.

Déclaration d'exposition aux radiations:

Cet équipment est conforme aux limites d'exposition aux ravonnements ISED établies pour un environnement non contrôlé. Cet équipment doit être installé et utilisé à plus de 23 cm entre le radiateur et votre corps.

Class B compliance

This device complies with the Class B limits for radio noise emissions as set out in the interference-causing equipment standard entitled "Information Technology Equipment (ITE)--Limits and methods of measurement," ICES-003 of Innovation, Science and Economic Development Canada.

EU + UKCA regulatory conformance

Hereby, BlackBerry declares that the radio equipment, BlackBerry Radar H2M IS ITH100-1 is in compliance with: Directive 2014/53/EU and UK Radio Equipment Regulations 2017 SI 2017/1206.

The full text of the EU + UKCA declarations of conformity is available at the following internet address: docs.radar.blackberry.com/guides/user_guide_conformity.

Additional regulatory conformance

Specific details about compliance to the standards and regulatory bodies for the device may be obtained from BlackBerry.

3 Get ready for installation

To complete the installation of your module, you will require a smartphone with internet access to download the BlackBerry Radar Installation App. This app will allow you to record the pairing of each BlackBerry Radar H2M IS module to its asset (that is, the container that the device will be installed on) and its associated BlackBerry Radar accessories.

For detailed instructions on the BlackBerry Radar Installation App, log in to the BlackBerry Radar Dashboard and access “Documentation” from the main menu.

If you are unable to utilize the BlackBerry Radar Installation App during your installation, you need to obtain a worksheet where you can record the pairing of each BlackBerry Radar H2M IS module to its asset and associated BlackBerry Radar accessory devices.

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.

4 Installing BlackBerry Radar H2M IS modules

You may have a large number of BlackBerry Radar H2M IS 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.

4.1 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 H2M IS Module Package Contents

Radar H2M IS Module

Drill Template

Radar H2M Container Accessory Package Contents

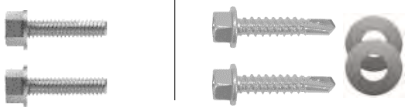
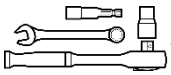
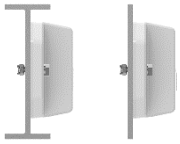
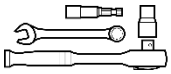
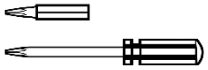
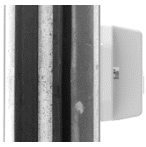
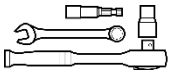
NOTE: Radar H2M Container Accessory only required if mounting inside angled container corrugation. These accessories are available from your BlackBerry Representative.

Radar H2M Container Accessory

(***Required*** for mounting inside angled container corrugation geometry.

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. **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). Also, the actual length of the fasteners will be determined by the thickness of your mounting surface. An example of these points is provided, below.

<table>
<tr><td colspan="2">IMPORTANT: The maximum fastener thread diameter supported by this product is ¼" or M6 (6 mm).
For most secure fastening, we do not recommend using fasteners with a thread diameter less than ¼" or M6.</td><td> 
</td></tr>
<tr><td>Box Section
(+3mm wall thickness)
  </td><td>A) 2 Thread Rolling Screws or B) 2 Self-Tapping Screws and Washers
(3/8" head, 1/4"-20 thread, 3/4" length)
(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.</td><td>Drill Bit
A) 7/32" (6mm)
B) 3/16" (5mm)
Nut Driver/Socket/Wrench
 
3/8" (10mm)</td></tr>
<tr><td>Panel Section
(with rear access)
  </td><td>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)
  </td><td>Drill Bit
1/4" (6mm)
Nut Driver/Socket/Wrench
 
7/16" (11mm)</td></tr>
<tr><td>Panel Walls
(wood/composite core)
  </td><td>2 Wood Screws and Washers
(#10 wood screw, Phillips PH2 Head, 1" length)
(5.0mm wood screw, Phillips PH2 Head, 25 mm length)
  </td><td>Drill Bit
1/8" (3mm)
Screwdriver
  </td></tr>
<tr><td>Insulated Trailer Wall
  </td><td>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
  </td><td>Drill Bit
1/2" (13mm)
Nut Driver/Socket/Wrench
 
7/16" (11mm)</td></tr>
</table>

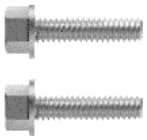
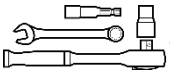
Fastener selection considerations—Thread rolling screws

You may also wish to install your BlackBerry Radar H2M IS on your container where 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 H2M 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 10-20% smaller than the fastener's thread diameter. Below is an example.

IMPORTANT: The maximum fastener thread diameter supported by this product is ¼" (0.25") or M6 (6 mm). For most secure fastening, we do not recommend using fasteners with a thread diameter less than ¼" or M6.	

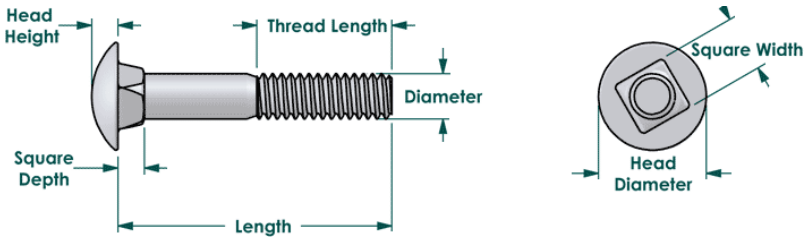
Container Walls	2 Thread Rolling Screws	Drill Bit
	(3/8" head, 1/4"-20 thread, 3/4" length) (10 mm head, M6 thread, 19mm length) 	 7/32" (6 mm) Nut Driver/Socket/Wrench  3/8" (10mm)

Fastener selection considerations—Carriage bolts

For added security, of your installation you may wish to use carriage bolts. Carriage bolts add to the security of an installation by removing the ability to apply a tool to the external part of the fastener—requiring access to the rear of the installation to remove the fastener assembly. If the asset is padlocked, access to the removable fastener is denied.

Carriage Bolts

Carriage bolts are like standard bolts, but with a different head. The head of a carriage bolt is a domed shape with a square shank protruding from its flat side. The square shank on the base is inserted into the square slots on the module. The square slot holds the bolt in place when a nut is fastened onto it--while a standard bolt would require a tool to hold the bolt for fastening the nut.



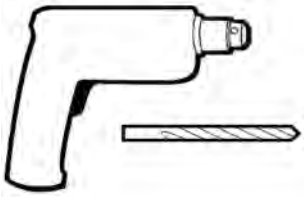
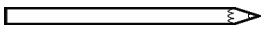
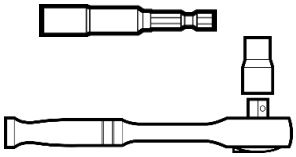
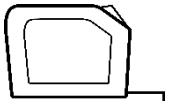
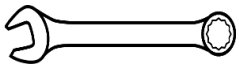
As you will need to supply the fasteners, you may determine which fastener is most suitable for your needs. Note: Your choice of fastener will influence the size of the tools required to create the mounting holes (i.e. drill bits) and install or remove the fasteners (i.e. wrenches/sockets/drivers). Likewise, the actual length of the fasteners will be determined by the thickness of your mounting surface and the fasteners selected. Below is an example.

IMPORTANT: The maximum fastener thread diameter supported by this product is ¼" (0.25") or M6 (6 mm). The maximum head diameter is 0.74" (19 mm) Recommended square width is 0.245"-0.26" (6.2-6.6mm)	

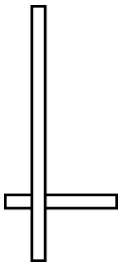
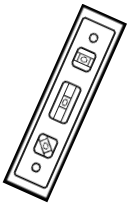
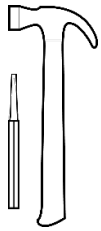
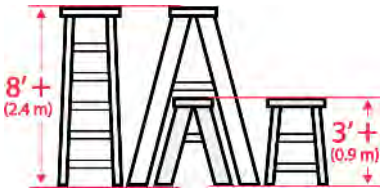
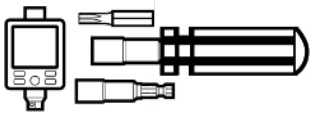
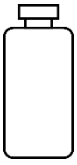
Container walls 	**2 Carriage Bolts, Nuts and Washers** **Carriage Bolt: 0.74" head diameter, 0.245 – 0.26" square, 1/4"-20 thread, 1-1/2" length** **Nut: 1/4"-20 thread** 	**Drill Bit** **1/4" (6 mm)** **Nut Driver/Socket/Wrench** **7/16" (11mm)**

4.2 Installation tools

Required tools to complete the installation:

Smartphone with BlackBerry Radar Installation App 	**Drill and Drill Bits** 	**Tape**  **Pencil or Non-Permanent Marker** 
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** 	**Tape Measure**  **Wrench**  *Required only if nuts and bolts are used.

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.	**Water**  *If cleaning is required.	**File** 		**Cutting Lubricant* (Recommended)**  *Recommended for faster drilling speed on thicker metals and longer drill bit life.

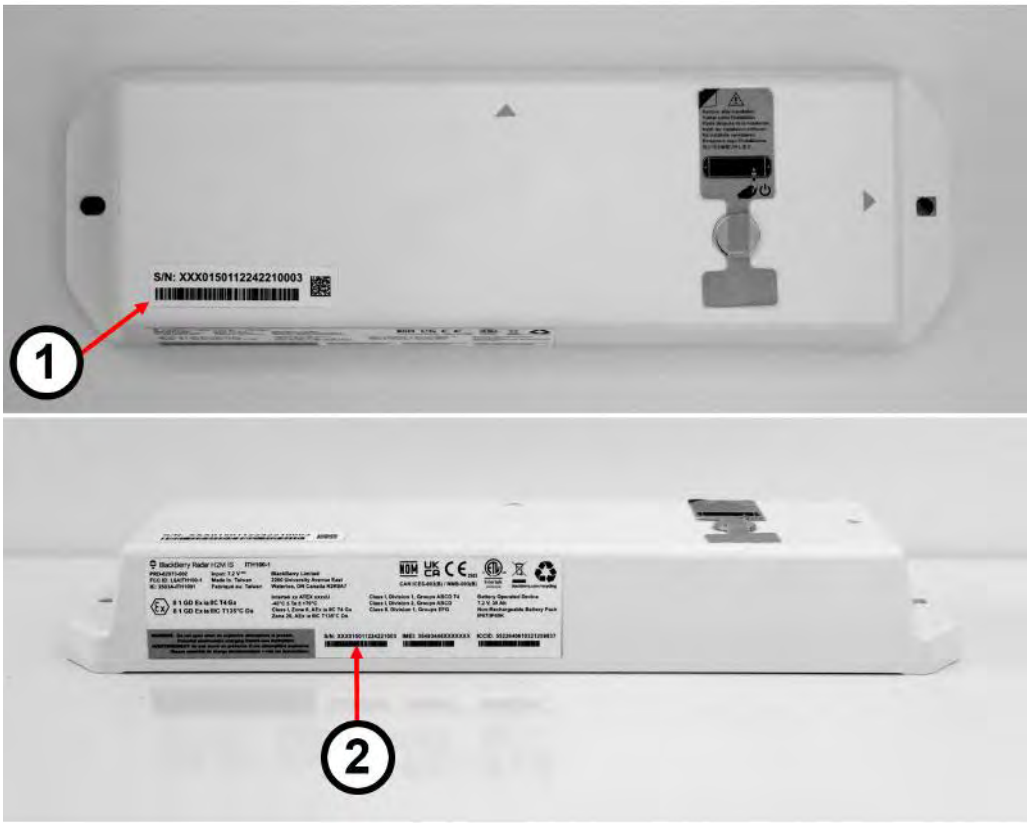
4.3 Matching a module identifier to an asset identifier

In order to track an asset, the Radar H2M IS 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 H2M IS 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 H2M IS module is printed on two labels—one attached to the left end of the outer housing and the other on the bottom end of the outer housing. 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. Front of the outer housing
    2. Bottom end of the outer housing

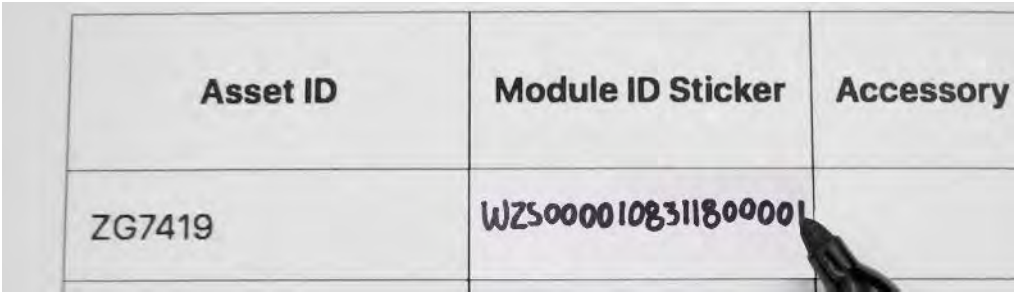


2. Once you have installed the module on the asset, create a record of the module-to-asset-to-accessory pairing within the BlackBerry Installation App by recording the asset identifier and scanning the module identifier for the BlackBerry Radar H2M IS device and associated accessories.

3. If you are unable to use the BlackBerry Radar Installation App during your installation, you need to obtain a worksheet where you can record the pairing of each BlackBerry Radar H2M IS module to its asset and associated BlackBerry Radar accessories.

   For your convenience, you may quickly create a record of the module and asset identifier pairings by removing the partially attached label from the outer housing 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.



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

4.4 Module installation

WARNING: Do not attempt to install the device when an explosive atmosphere is present.

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

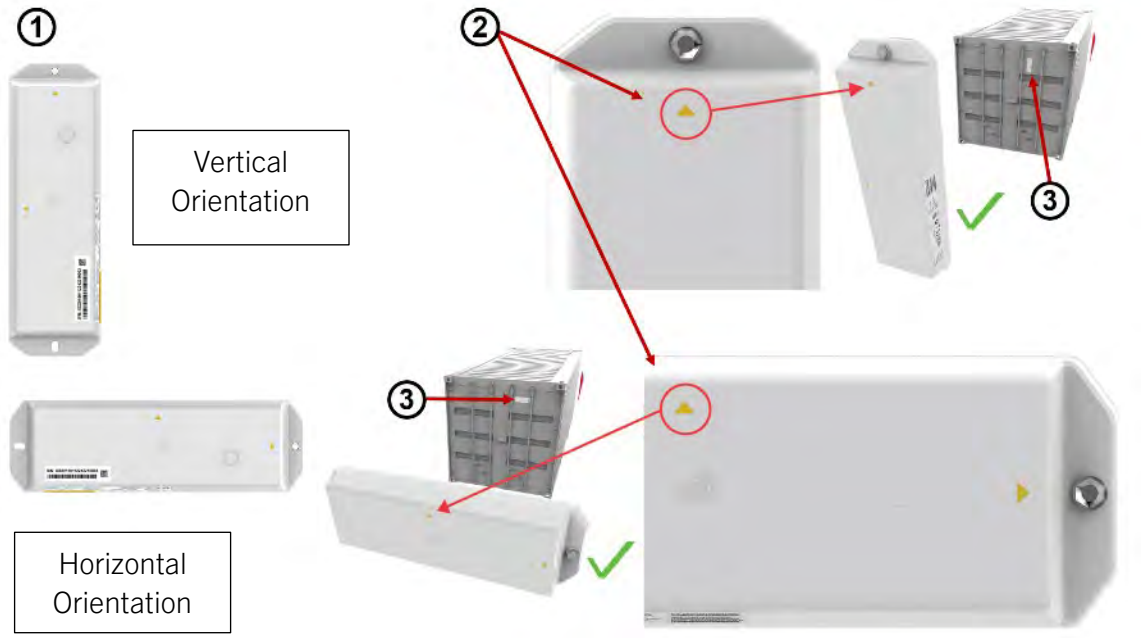
- Normal usage activities, such as loading or unloading cargo.
- Moving parts of the asset.
- Road debris.

IMPORTANT: For accurate tracking, orientation matters.

1. You may install the module horizontally or vertically.
   NOTE: For ease of install, vertical orientation is preferred. Horizontal orientation may be used as an alternate orientation.
2. When mounting on a vertical surface, always ensure the module is installed with the triangle for your desired orientation, pointing up.
3. Device must be mounted on the **right-hand** door.
   - For assets with barn doors, the module must be installed on the **right-hand** door, as close to the inside edge of this door as the door construction allows.

NOTE: Installation on the front surface of a trailer or container is not recommended. Vibration from the tractor's engine or trailer mounted refrigeration, heating and generator units may result in false motion alerts.

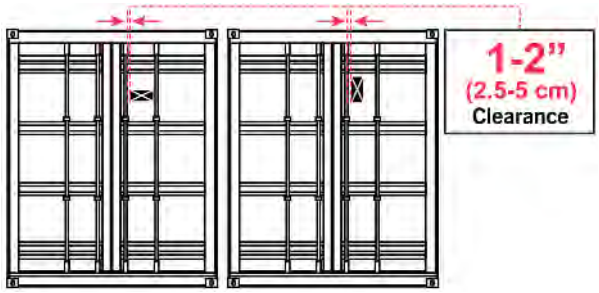
This diagram illustrates the supported installation orientations for the BlackBerry Radar H2M IS module.



4.4.1 Intermodal container installation procedure

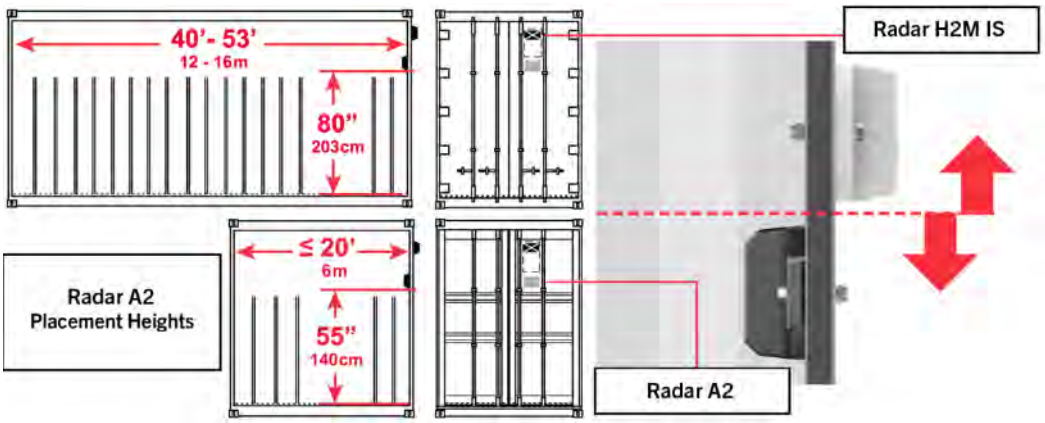
If you wish to monitor door open/close events with your BlackBerry Radar H2M IS module, you will need to mount it on the door. Recommended module placement on intermodal containers, with swing doors, are as follows:

- The module should be placed 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"-1.25" (2.5-3 cm) of clearance space between the left side of the unit and the right edge of the locking bar. Mounting the module in this position is critical for proper door detection and ensures all door open/close events are registered--even in instances where only one door is opened.
- 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, container markings, and accessory pairing, etc.



IMPORTANT: If you intend to pair your BlackBerry Radar H2M IS module with a BlackBerry Radar A2 Cargo Accessory, please ensure you do not install the BlackBerry Radar H2M IS module at a height that prevents the installation of the Radar A2 at the required placement heights in the illustration, below.

- Installing the Radar A2 at these heights is important for Radar A2 sensor accuracy.
- Staggering the installation height of the Radar H2M IS module and Radar A2 will avoid damaging the installed module when installing the other module.



- Horizontal and Vertical installation orientations are supported. When determining the preferred installation location and orientation for your module, be sure to install the module in a location that does not cover any important container markings. If your container's markings, and door geometry require placement of the Radar H2M IS within angled door geometry, you will require the use of the Radar H2M Container Accessory.

Radar H2M Container Accessory

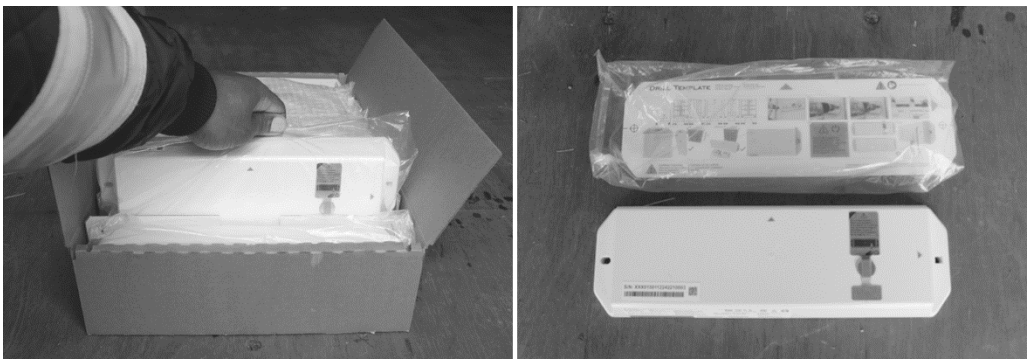
(***Required*** for mounting inside angled container corrugation geometry.

Scenario 1:
Vertical Orientation—Main Surface Mounting

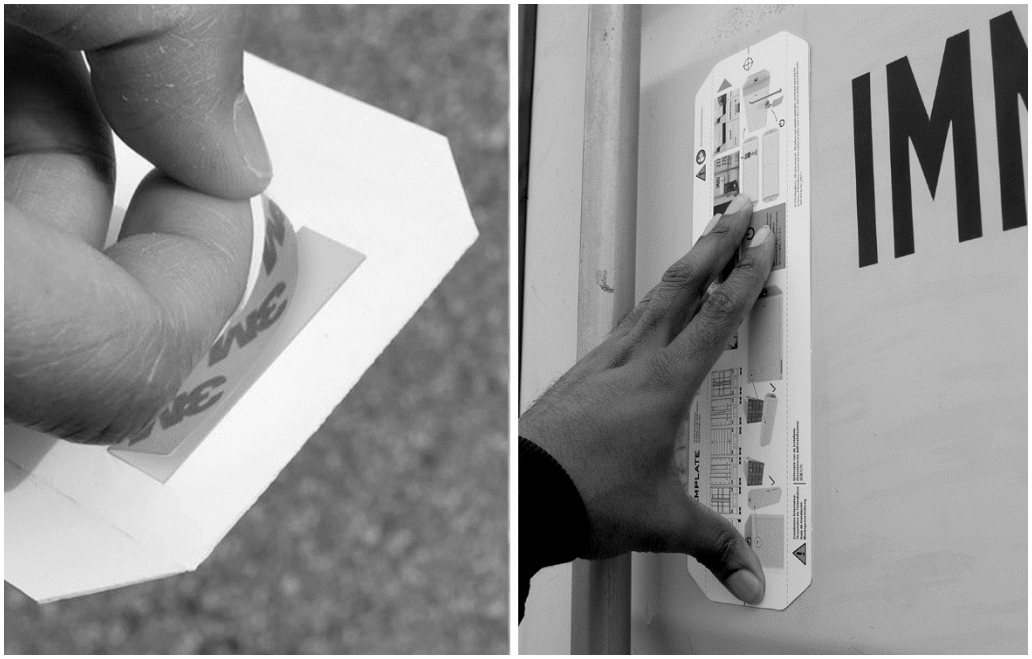
Follow these instructions if you plan to install to the flat section of the container door, in the vertical orientation.

SPECIAL NOTE: To preserve the Intrinsic Safety of the BlackBerry Radar H2M IS module, if the module is dropped at any point during the handling or installation process, please replace with a different module that has not been dropped.

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

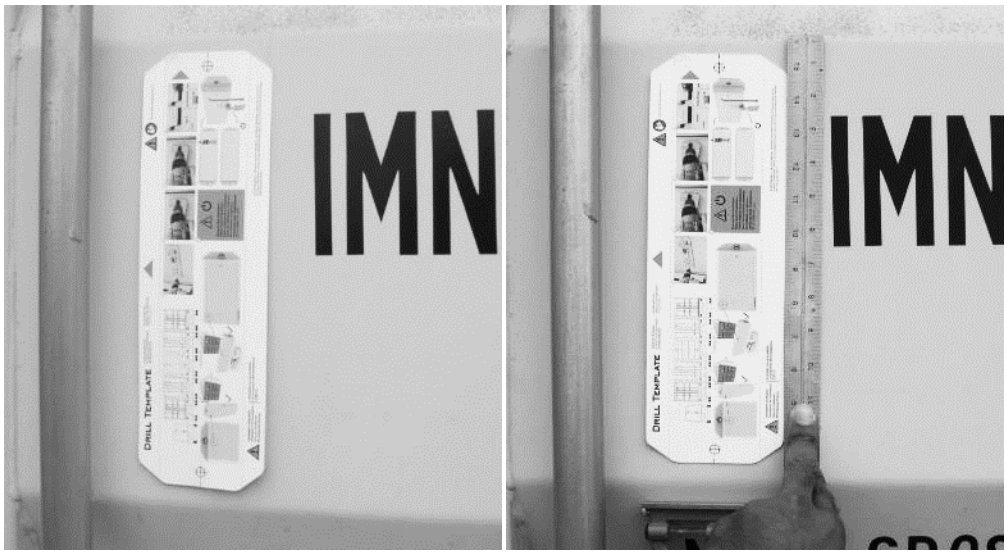


2. After selecting the best installation location for your container, remove the liner from the rear of the template and place the template in the desired installation location. The adhesive at the back of the template ensures that it stays on the door surface for accurate drilling of your holes.

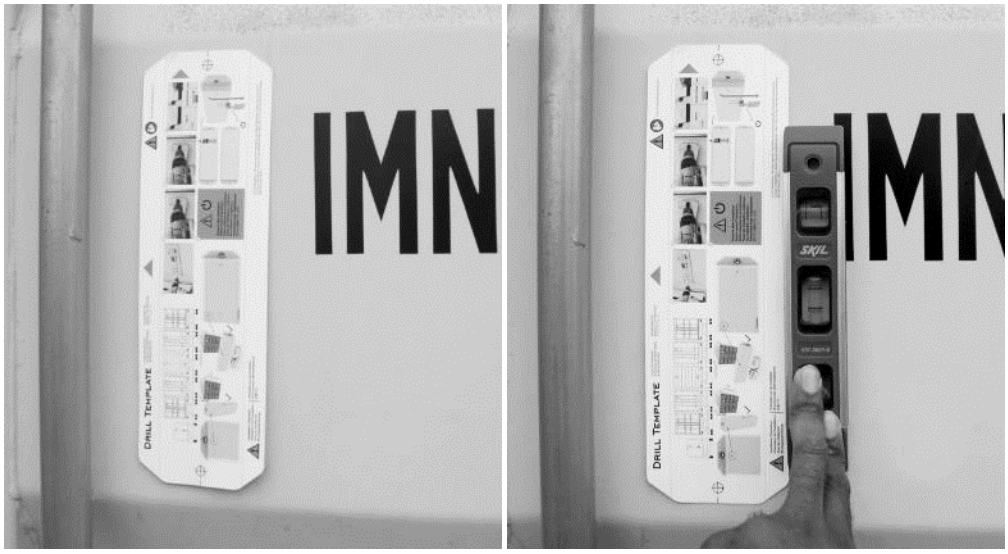


It is recommended that you install the module as level as possible on the asset. Angled installations are not supported. To help ensure the module is level, you may try one of the following techniques.

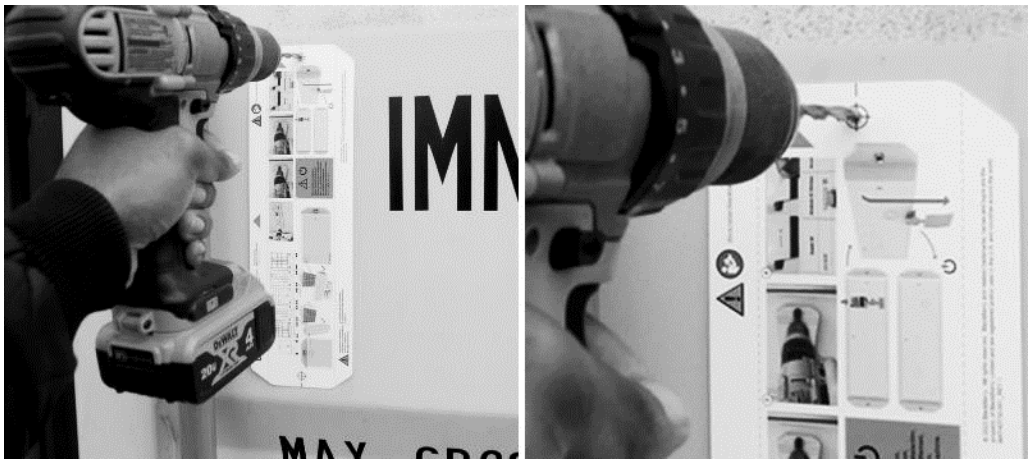
Technique 1: Position the square along the horizontal member of the door. Using the square as a guide, align the right edge of the template to the line.



Technique 2: Visually, place the template in the desired installation location. Using a level, check that the template is level.



3. Using a drill bit, drill a hole through each of the cross hairs on the template. This will create two holes you will use to mount the module.

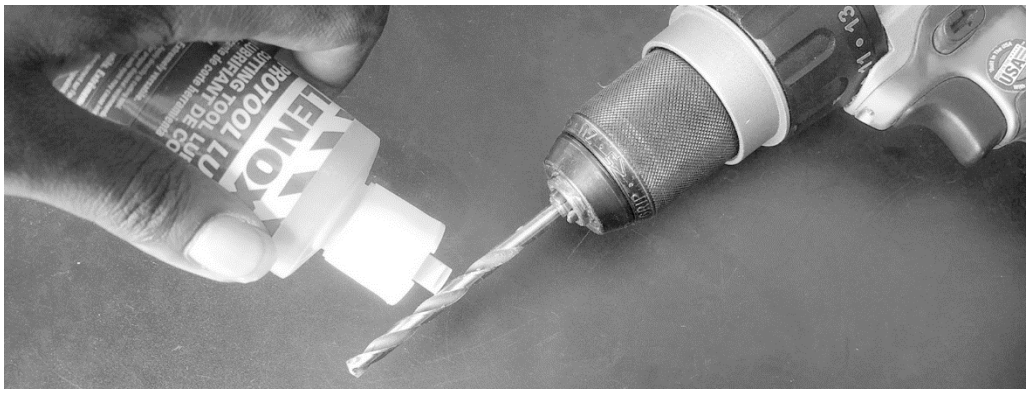


Drilling tips for intermodal installations

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.

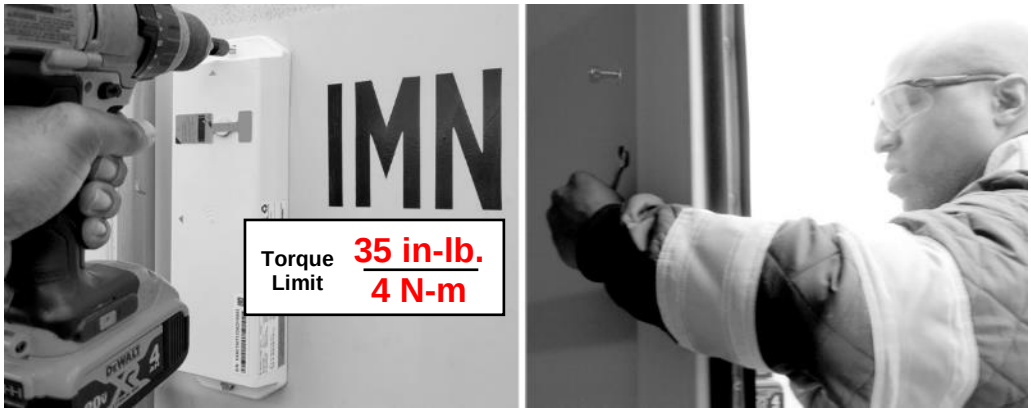
Tip 2: To achieve precise hole drilling, before drilling your hole, you may wish to use a punch and hammer to help place the drill bit. This will prevent the bit from "walking" during the drilling operation.



4. Remove the template. You now have two holes in the door. 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 and ensure surface is clean and dry.

5. Ensure the arrow on the top of the housing is pointing to the sky. Place the module on the door, aligning the holes on the module with the holes you drilled into the door.

6. 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. (4N-m).

7. Once you have installed the module on the asset, create a record of the module-to-asset-to-accessory pairing within the BlackBerry Radar Installation App by recording the asset identifier and scanning the module identifier for the BlackBerry Radar H2M IS device and associated accessories with the smartphone.

If you are unable to use the BlackBerry Radar Installation App during your installation, you need to obtain a worksheet where you can record the pairing of each BlackBerry Radar H2M IS module to its asset and associated BlackBerry Radar accessories.

For your convenience, you may quickly create a record of the module and asset identifier pairings by removing the partially attached label from the outer housing of the module and placing it on the installation worksheet, next to the asset that will be tracked by the module.

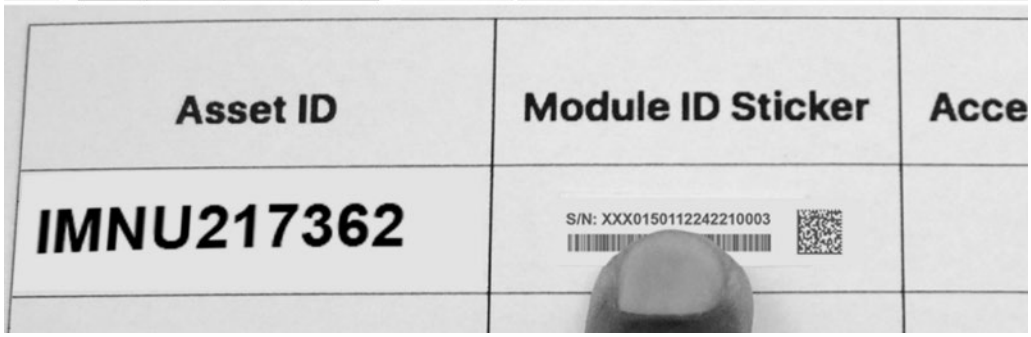

BlackBerry Radar

Installation Worksheet

Date: March 20, 2023

Installer: sts-installer@blackberry.com

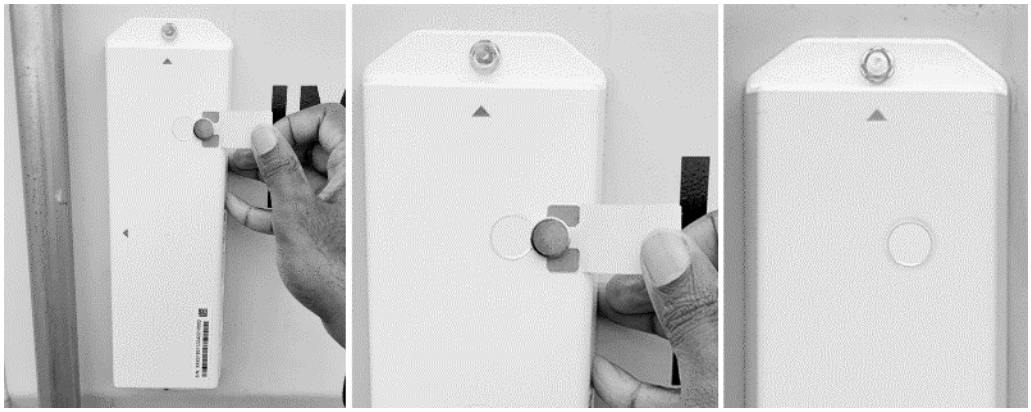
Asset ID	Module ID Sticker	Accessory ID Sticker	Mileage (Optional)
IMNU217362			
IMNU216532			
IMNU215743			
IMNU215147			
IMNU215548			
IMNU215443			



8. Activate your modules, using the following process.
   A. On the module, locate a corner of the magnet tape and lift.

   B. Continue to lift the magnet tape and fully remove the magnet tape from the module. Lifting the magnet tape will remove the magnet from the magnet ring.

   IMPORTANT: The magnet functions as the "Power" switch for the module. The magnet must be completely removed from the module for the module to operate.

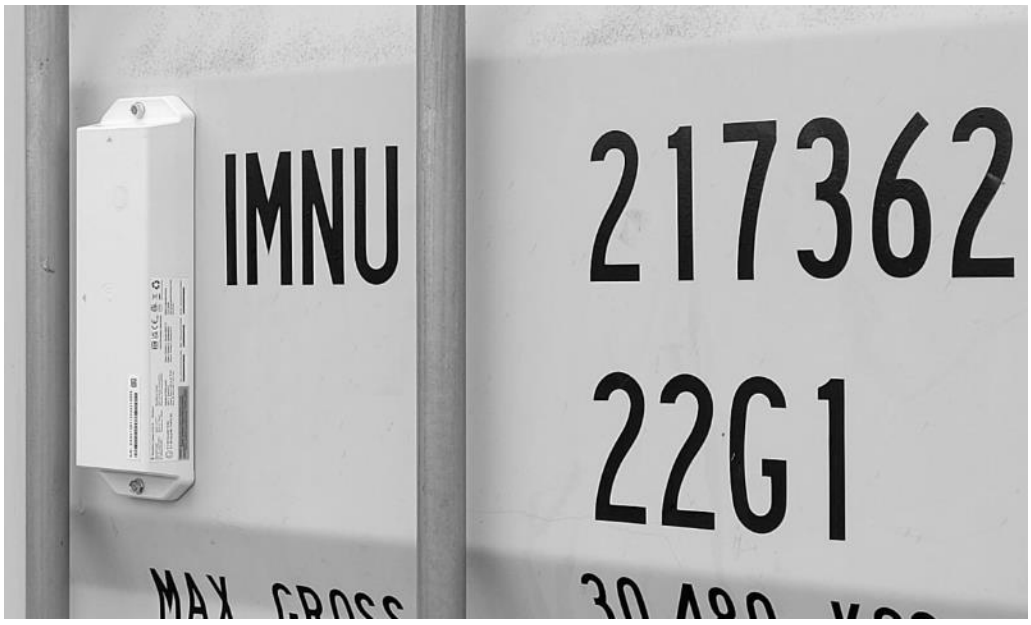


IMPORTANT NOTES ON MAGNET USE

Save and Reuse your Magnets: Once the magnet is removed from the module, we recommend saving some magnets, at your service facility. Maintaining an adequate supply of these magnets can assist in the long-term operation of your device, as the magnets will be required to facilitate module resets or to shut down the device for shipping previously active Radar H2M IS modules between locations.

For a full explanation of the module reset procedure, please refer to ***Section 4.4.2: Power Cycling your BlackBerry Radar H2M IS modules.*** For a full explanation of the module Shipping Procedure, please refer to ***Section 6.3: Preparing your BlackBerry Radar H2M IS modules for Shipping.***

9. Close both doors. Installation is complete.

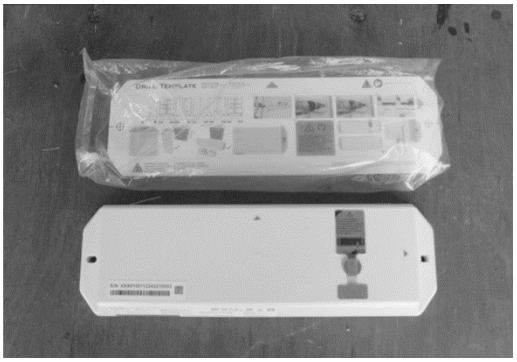


Scenario 2:
Horizontal Orientation—Main Surface Mounting

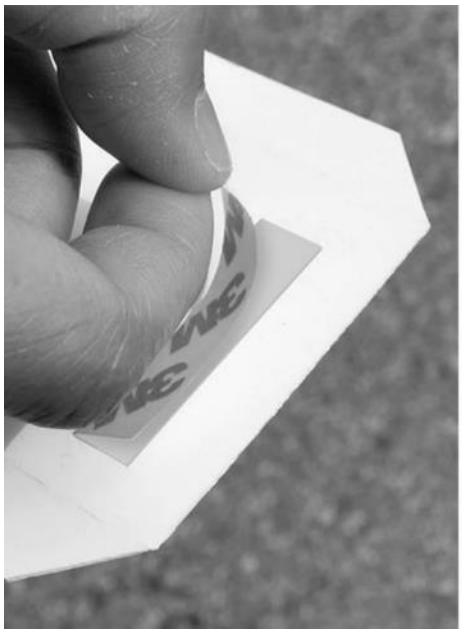
Follow these instructions if you plan to install to the flat section of the container door, in the horizontal orientation.

SPECIAL NOTE: To preserve the Intrinsic Safety of the BlackBerry Radar H2M IS module, if the module is dropped at any point during the handling or installation process, please replace with a different module that has not been dropped.

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



2. After selecting the best installation location for your container, remove the liner from the rear of the template and place the template in the desired installation location. The adhesive at the back of the template ensures that it stays on the door surface for accurate drilling of your holes.



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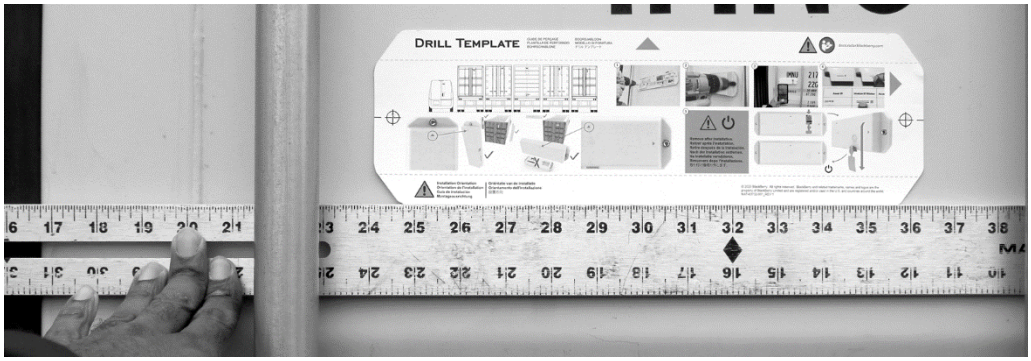
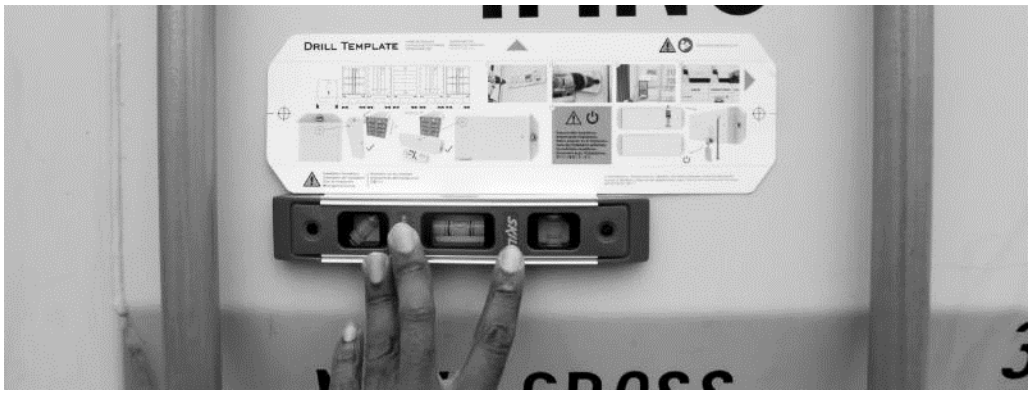
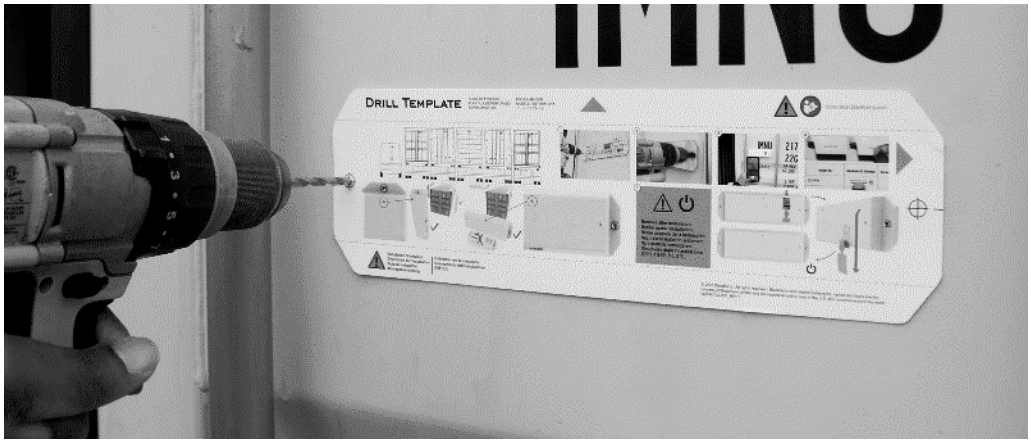
Technique 1: Position the square along the horizontal member of the door. Using the square as a guide, place the template on top of the square.



Technique 2: Visually, place the template in the desired installation location. Using a level, check that the template is level.



3. Using a drill bit, drill a hole through each of the cross hairs on the template. This will create two holes you will use to mount the module.



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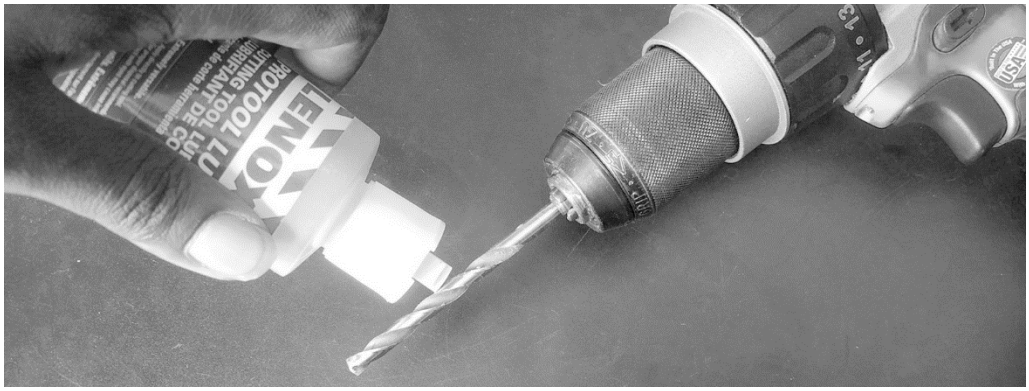

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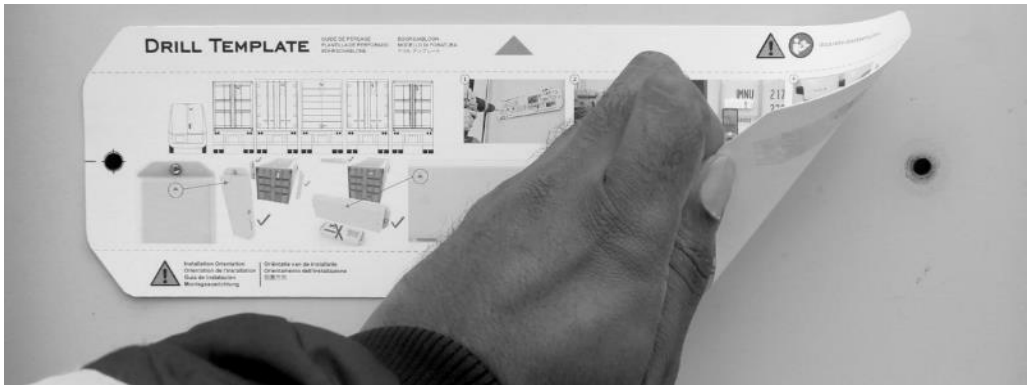

5. Ensure the arrow on the top of the housing is pointing to the sky. Place the module on the door, aligning the holes on the module with the holes you drilled into the door.

Horizontal Orientation

6. 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. (4N-m).

7. Once you have installed the module on the asset, create a record of the module-to-asset-to-accessory pairing within the BlackBerry Radar Installation App by recording the asset identifier and scanning the module identifier for the BlackBerry Radar H2M IS device and associated accessories with the smartphone.

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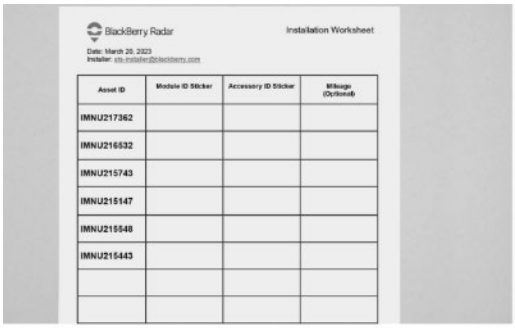

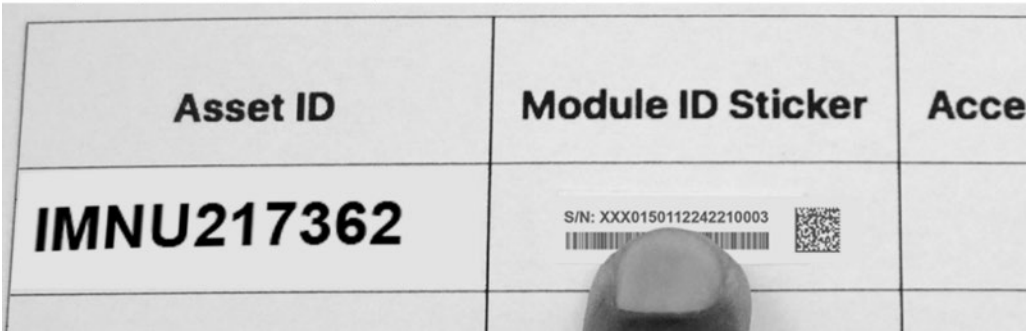

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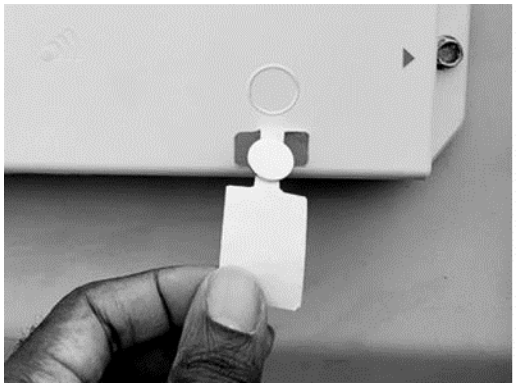

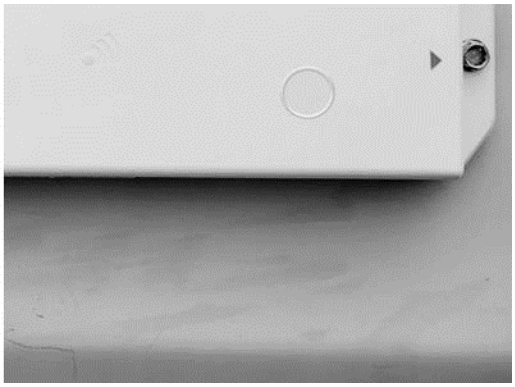

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For a full explanation of the module reset procedure, please refer to ***Section 4.4.2: Power Cycling your BlackBerry Radar H2M IS modules.*** For a full explanation of the module Shipping Procedure, please refer to ***Section 6.3: Preparing your BlackBerry Radar H2M IS modules for Shipping.***

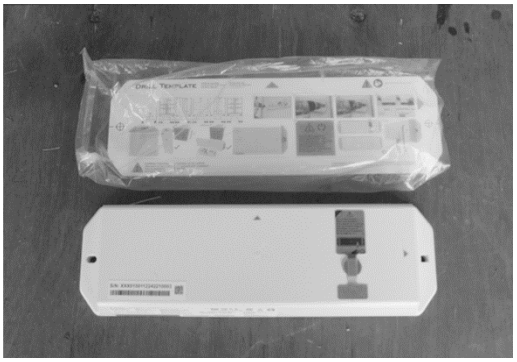
9. Close both doors. Installation is complete.

Scenario 3:
Horizontal Orientation—Angled Corrugate Mounting

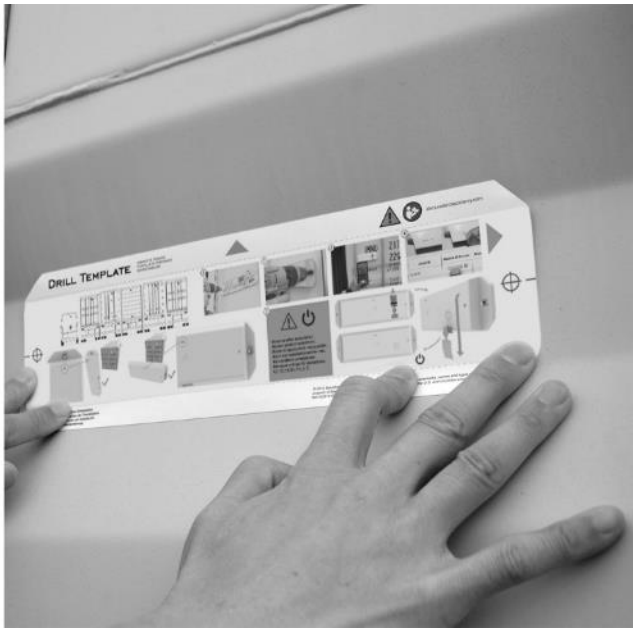
Follow these instructions if you plan to install to the within an angled corrugate area of the container door.

SPECIAL NOTE: To preserve the Intrinsic Safety of the BlackBerry Radar H2M IS module, if the module is dropped at any point during the handling or installation process, please replace with a different module that has not been dropped.

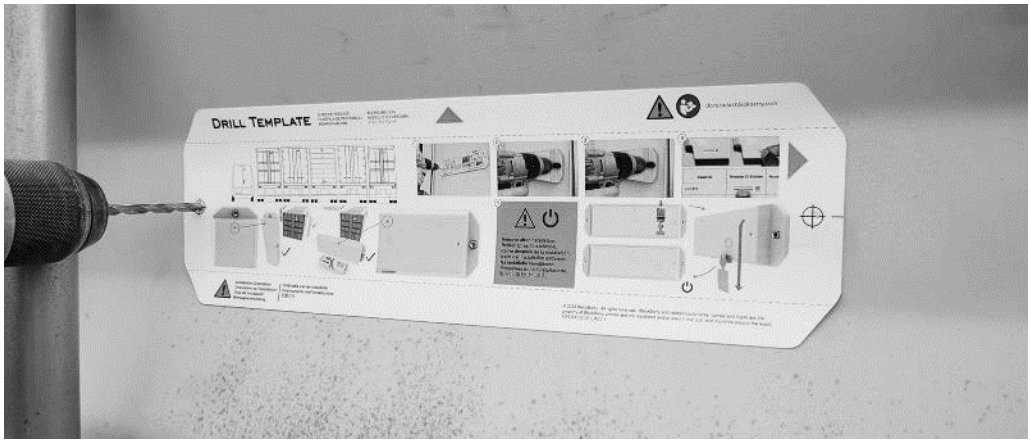
1. Remove the module from the package and from the plastic bag.



2. After selecting the best installation location for your container, remove the liner from the rear of the template and place the template in the desired installation location. The adhesive at the back of the template ensures that it stays on the door surface for accurate drilling of your holes.



3. Using a drill bit, drill a hole through each of the cross hairs on the template. This will create two holes you will use to mount the module.

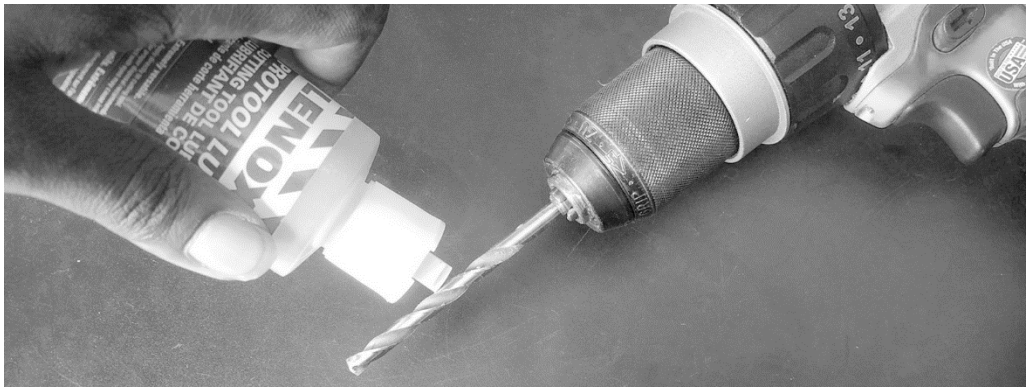


Drilling tips for intermodal installations

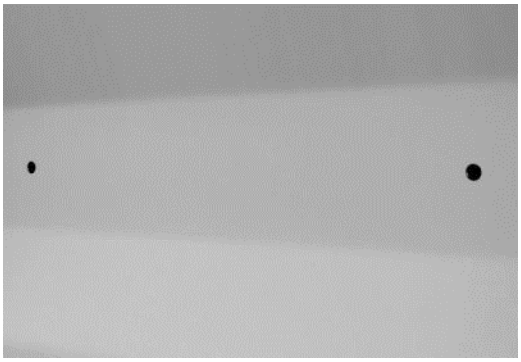
Due to the thicker, harder steel used on intermodal containers, you may wish to follow these suggestions.

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.

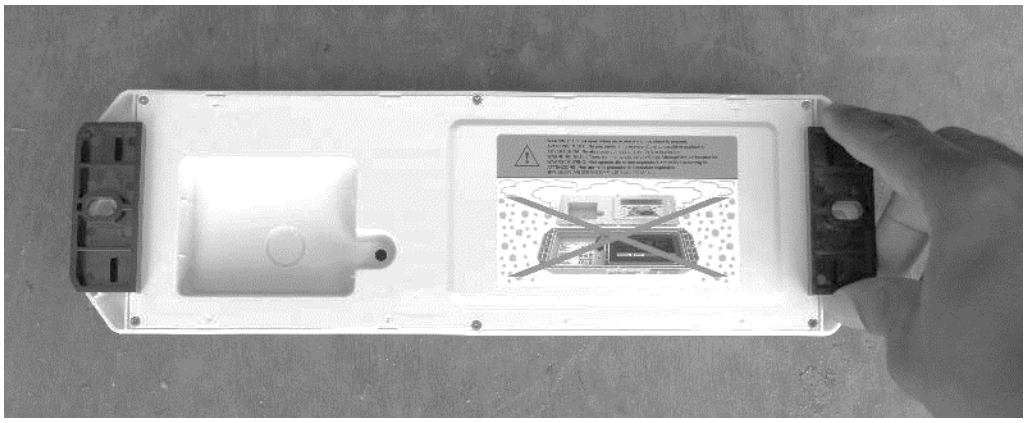
Tip 2: To achieve precise hole drilling, before drilling your hole, you may wish to use a punch and hammer to help place the drill bit. This will prevent the bit from "walking" during the drilling operation.



4. Remove the template. You now have two holes in the door. 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 and ensure surface is clean and dry.



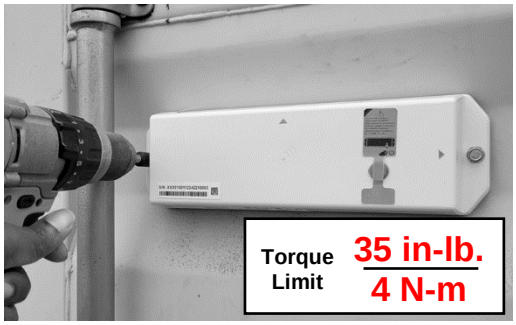
5. To allow the Radar H2M IS to fit inside the angled corrugate, install the Radar H2M Container Accessory to the rear of Radar H2M IS housing.



6. Ensure the arrow on the top of the housing is pointing to the sky. Place the assembly on the door, aligning the holes on the module with the holes you drilled into the door.

Horizontal Orientation

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

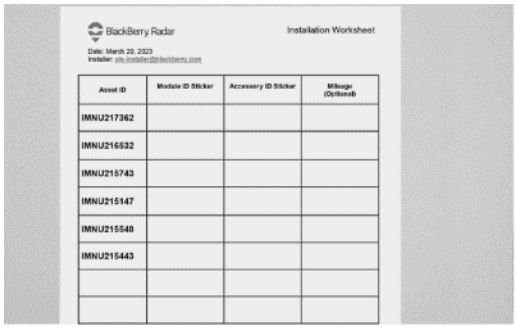


Do not over-tighten the fastener. Do not tighten fastener beyond 35 in-lb. (4N-m).

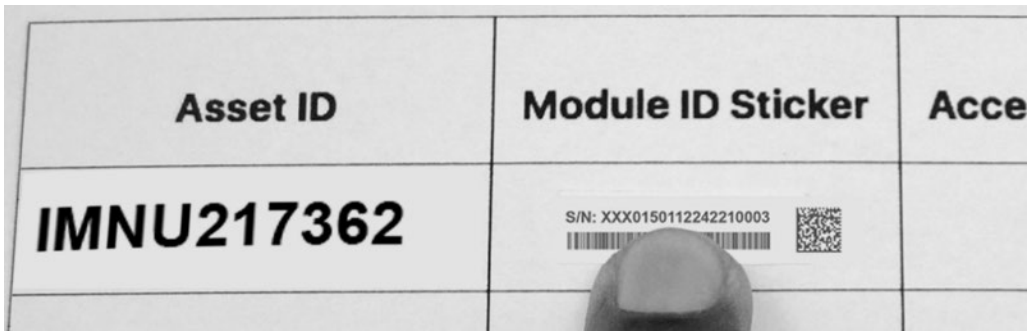
8. Once you have installed the module on the asset, create a record of the module to asset to accessory pairing within the BlackBerry Radar Installation App by recording the asset identifier and scanning the module identifier for the BlackBerry Radar H2M IS device and associated accessories with the smartphone.

If you are unable to use the BlackBerry Radar Installation App during your installation, you need to obtain a worksheet where you can record the pairing of each BlackBerry Radar H2M IS module to its asset and associated BlackBerry Radar accessories.

For your convenience, you may quickly create a record of the module and asset identifier pairings by removing the partially attached label from the outer housing of the module and placing it on the installation worksheet, next to the asset that will be tracked by the module.


BlackBerry Radar
Installation Worksheet

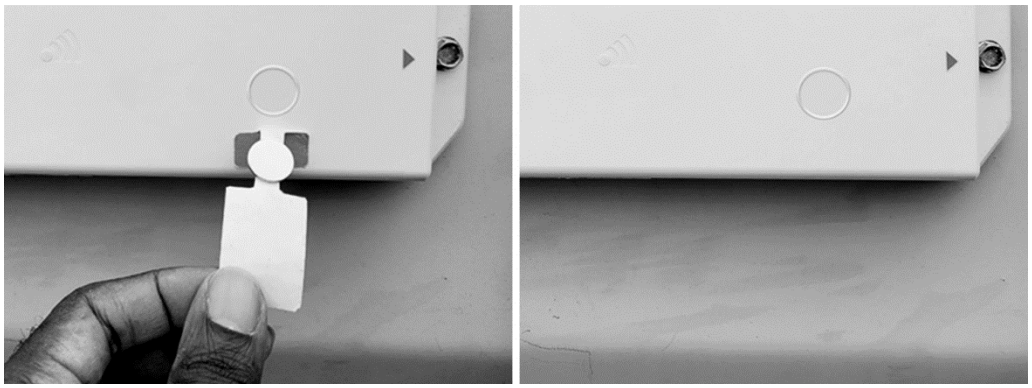
Asset ID	Module ID Sticker	Accessory ID Sticker	Mileage (Optional)
IMNU217362			
IMNU216532			
IMNU215743			
IMNU215147			
IMNU215548			
IMNU215443			



9. Activate your modules, using the following process.
   A. On the module, locate a corner of the magnet tape.

   B. Lift the corner of the magnet tape and fully remove the magnet tape from the module. Lifting the magnet tape will remove the magnet from the magnet ring.

IMPORTANT: The magnet functions as the "Power" switch for the module. The magnet must be completely removed from the module for the module to operate.



IMPORTANT NOTES ON MAGNET USE

Save and Reuse your Magnets: Once the magnet is removed from the module, we recommend saving some magnets, at your service facility. Maintaining an adequate supply of these magnets can assist in the long-term operation of your module, as the magnets will be required to facilitate module resets or to shut down the module for shipping previously active Radar H2M IS modules between locations.

For a full explanation of the module reset procedure, please refer to ***Section 4.4.2: Power Cycling your BlackBerry Radar H2M IS modules.*** For a full explanation of the module Shipping Procedure, please refer to ***Section 6.3: Preparing your BlackBerry Radar H2M IS modules for Shipping.***

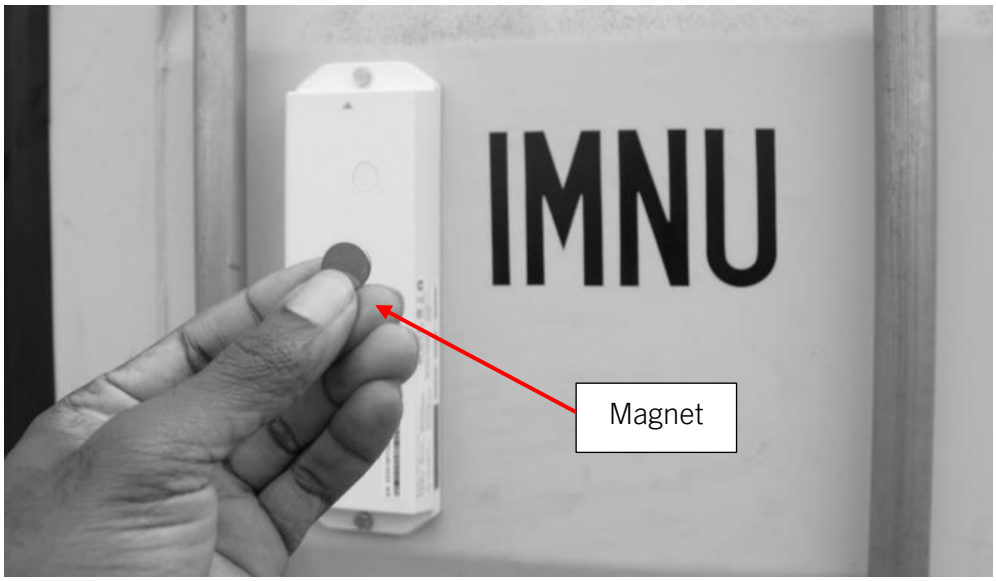
10. Close both doors. Installation is complete.

4.4.2 Power Cycling BlackBerry Radar H2M IS modules

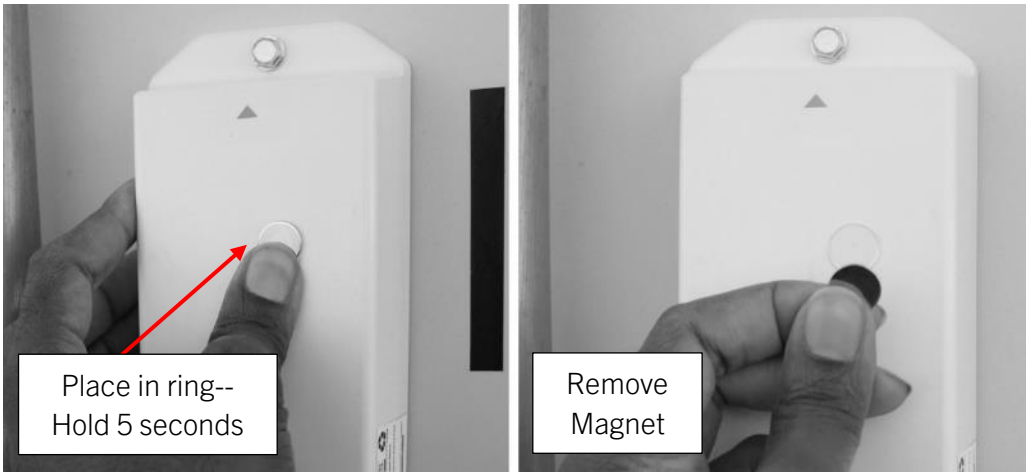
Use this procedure if you need to "power-cycle" your BlackBerry Radar H2M IS module.

> **IMPORTANT:** This procedure only works on modules where the Magnet Power Control feature has been disabled in the Blackberry Radar Dashboard.
>
> Before attempting to power cycle your module, please consult the BlackBerry Radar Dashboard to ensure the Magnet Power Control feature is disabled for the modules you are attempting to power cycle.

1. Locate one of the magnets you removed during the installation/activation of the BlackBerry Radar H2M IS module.



2. Place the magnet within the magnet ring on the front of the housing. Hold the magnet within the magnet ring for at least 5 seconds, then remove the magnet from the module. The module will reboot and reconnect to the cellular network within 5 minutes.



5 Cleaning BlackBerry Radar H2M IS modules

WARNING: Exposure to some solvents may degrade the sealing properties of materials used in the device. Avoid exposing your device to these solvents.

1. For best performance, regularly clean the housing on every service interval of your asset. The cleaning of this module can be performed inside and outside of a Hazardous area using a cloth, dampened with water, to avoid any Electrostatic Discharge risk.

6 Removing BlackBerry Radar H2M IS modules

Use this procedure if you need to remove your BlackBerry Radar H2M IS module from your asset.

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:

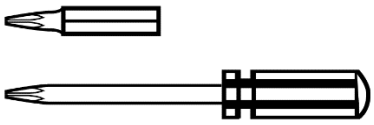
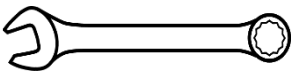
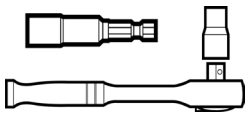
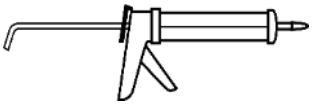
blackberry.com/RadarSupport--for information on service and the recycling and safe disposal of your device and battery.

Note: If you plan to ship your Radar H2M IS module, please be aware that the module, 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 module to BlackBerry, you may request this UN-certified packaging from BlackBerry.

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 H2M IS module, when shipped without the battery, are not subject to these surcharges.

6.1 Removal tools

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** 	**Caulking Gun and Polyurethane Sealant**  *Recommended for sealing holes.

6.2 Module removal

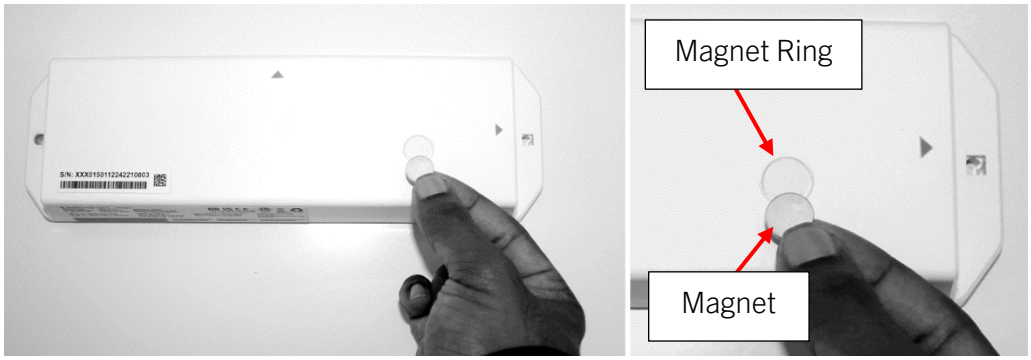
1. Remove the module from the asset by removing the two fasteners from the ends of the module and remove the module.

6.3 Shipment prep

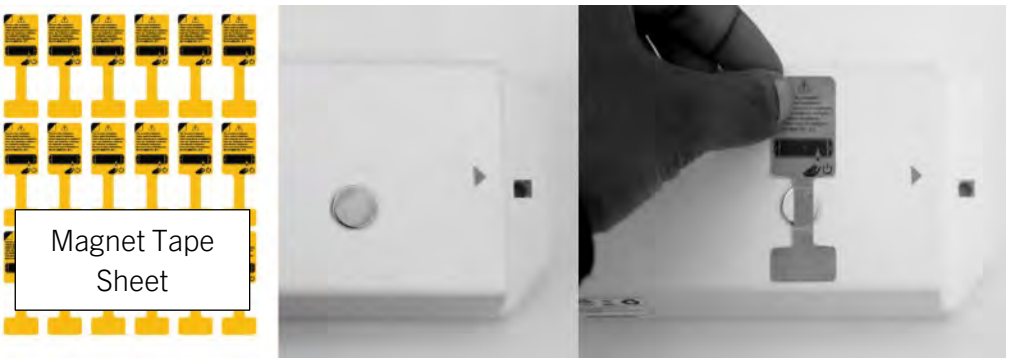
If you do need to ship BlackBerry Radar H2M IS, please follow this procedure.

> **IMPORTANT:** To transport, or ship your module, the module must be powered off. By default, the magnet functions as the "Power" switch for the module.
>
> The magnet's ability to control the power may be disabled by enabling the Magnet Power Control feature in the BlackBerry Radar Dashboard. To ensure the magnet will power off the module—the Magnet Power Control feature must be disabled.
>
> Before attempting to transport, or ship, your modules--please consult the BlackBerry Radar Dashboard to ensure the Magnet Power Control feature is disabled on the modules you are attempting to ship.

1. Locate the magnet that shipped with your device, and place within the magnet ring on the front of your product.



2. Apply a piece of strong tape to keep the magnet in place during transit. If you plan to do any shipping of your device, you may request a sheet of Magnet Tape from your BlackBerry representative.



> **IMPORTANT:** Never ship the module without the magnet in place. The magnet is necessary to keep the module powered off during transit.

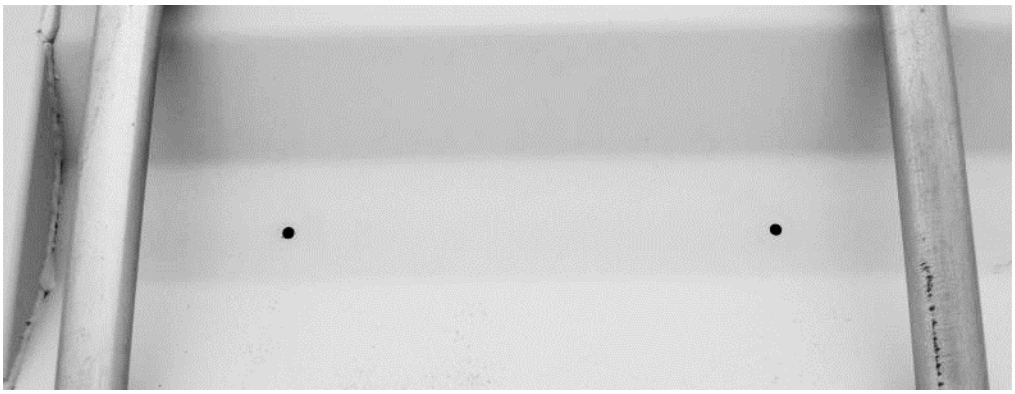
3. Module is now ready for placement into the UN certified Dangerous Goods packaging.

6.4 Door repair

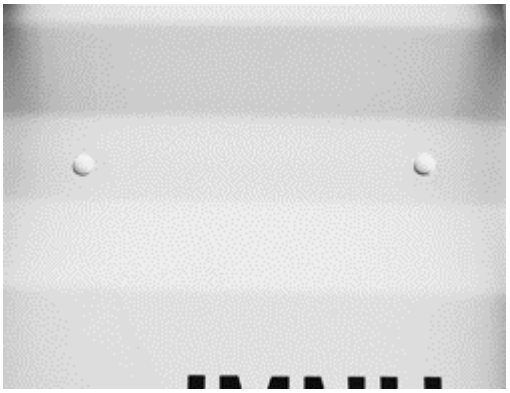
After the module has been removed from the door, there will be holes in the door. There are various techniques that can be used to repair the holes. This section will discuss some approaches you may wish to use.

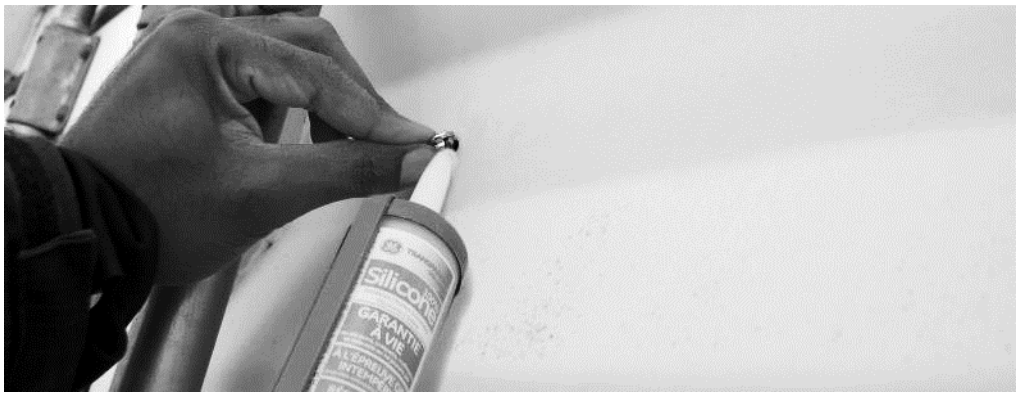
Method 1: Hole Plugs

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



2. Source a set of nylon, rubber, or metal 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. If desired, you may add 100% Silicone Exterior Grade caulk to the rear of the plug for extra protection to seal any gaps against water entry.





Method 2: Fasteners

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

2. Insert the nuts and bolts into the holes. For added protection, place a washer between the bolt and the door surface.

7 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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