

**ORBCOMM®**

CONNECTING THE  
WORLD'S ASSETS



## RT 6000 to PT 6000 Replacement Procedure

PT114, Version 02  
Mar 2020

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# 1 OVERVIEW

This installation procedure assumes that the reefer asset currently has an RT 6000 device installed, and it is being replaced with a PT 6000.

## 1.1 Tools and Materials

[Table 1](#) lists the tools that are required for an RT 6000 to PT 6000 installation.

Table 1: Required Tools and Materials

Quantity	Description
1	PT 6000 device (various configuration options depending on the installation)
Various	Antenna (specific to your type of installation)
1	RT 6000 to PT 6000 Adapter (p/n ST101038-001) - includes heat shrink
1	Mounting bracket (p/n ST100670-001) (Optional)
Various	Selection of screwdrivers and wrenches
1	Primer or activator
1	Wire cutter
Multiple	P-clamps and cable ties
Multiple	Alcohol wipes and surface preparation pads
1 tube	Dielectric grease (Optional)
<b>PT 6000 Installation</b>	
1	Heavy-duty electric drill
1	1/8-inch drill bit
1	5/16-inch socket
1	3/8-inch socket
1	3/8-inch ratchet
1	7/16-inch socket
1	7/16-inch open-end wrench
1	7/16-inch speed ratchet
1	9/16-inch open end wrench
1	Wire cutters
1	Heat gun or small torch (for heat shrink connectors)
1	T10 Torx driver
1	Small flat head screwdriver
1	Phillips head screwdriver
1	Socket wrench - 1/4-inch drive
1	6-inch extension socket
1	Approximately 14' ladder
1	Step ladder (8') (Optional)

Quantity	Description
1	Flood lamp (Optional)
1	100' Extension cord (Optional)

## 2 INSTALLATION

1. Confirm the asset identification number is correctly entered into the micro-processor. Record both the serial number of the device and the asset identification number. Later you need to provide this information to ORBCOMM Customer Care.
2. Disconnect the battery, either directly or by removing the fuse to the power supply.
3. Locate and remove the installed RT 6000 device. Be sure to disconnect any cable connectors.

**Note:** Make sure to leave all cabling in place so that it can be reused by the PT 6000.



4. Remove the cable cover on the PT 6000. This allows easy access for later when you connect the antennas.
5. Determine where to mount the PT 6000. Refer to any ORBCOMM PT 6000 Installation Guides if you require additional details or guidelines. Remember that you are using existing cabling, so the location should be close to where the RT 6000 was installed.
6. Determine how to mount the PT 6000 - VHB or bracket. If the mounting surface is not completely flat, use the bracket mount option. Mount it with the antenna connectors face down (not up), to prevent water from collecting inside.

### Option 1 - VHB Mount

- a. Mark the location of the corners of the device on the asset. This is recommended for prepping the asset surface for mounting.
- b. Prepare and clean the mounting location surface.
  - i. Use a surface preparation pad to prepare the area. Ensure that an oversized area is prepared.
  - ii. Clean the surface with an alcohol cleaner or wipe.
  - iii. Apply primer to the area and wait at least 30 seconds for the primer to dry.
- c. Remove all the VHB liners from all the PT 6000.

**CAUTION: DO NOT touch the VHB tape.**

- d. Mount the PT 6000 to the surface being careful to place it on the previously marked corner locations.
- e. Press firmly on the entire top surface of the PT 6000 (15 pounds for 60 seconds) to bond the VHB to the asset.



#### Option 2 - Bracket Mount

- a. Attach the optional mounting bracket (L-bracket) to the asset surface.
- b. Mount the PT 6000 to the bracket.



7. Cut any cable ties to release the RT 6000 harness from the frame.
8. Route the harness down to reach the PT 6000 in its mounting location.
9. Inspect the RT 6000 harness to ensure the connector has dielectric grease on the pins. If not, add dielectric grease.

**Note:** Inspect the collar to ensure that it is not damaged or broken.



10. Locate the RT 6000 to PT 6000 adapter and the large heat shrink provided in the adapter kit.



11. Slip the heat shrink over the circular connector. **DO NOT** heat the material at this point.
12. Connect the 18-pin female circular connector from the RT 6000 to PT 6000 adapter with the existing RT 6000 cable connector. Twist the collar clockwise to ensure it clicks in place.



13. Heat the heat shrink material until it is sealed. Secure cable ties to each end of the heat shrink tubing.

**CAUTION:** Do not overheat because this will jeopardize the integrity of the seal.

Note: Ideally you should use a propane-based flame or similar tool. A butane torch is not recommended.



14. Connect the 24-pin connector of the RT 6000 to PT 6000 adapter to the top portion of the mounted controller. Remember to apply dielectric grease to the connector.



15. Mount the two antennas and ensure the cables reach the PT 6000.
16. Run the antenna wires to the PT 6000 making sure the wires reach the PT 6000. Make sure to feed them through any existing tubing.

**CAUTION:** Make sure that antenna cables stay clear of any hot or moving surfaces



17. Connect the two antennas to the appropriate FAKRA connectors on the PT 6000. Make sure to match the connector colors.

**CAUTION: These connectors are delicate and must be properly aligned. Connections are secure when you hear a click.**



18. Use P-clamps to hold the wiring and cable ties to hold the wires in place.



19. Reinstall the antenna cover making sure not to overtighten the screws.
20. Reconnect the battery or the fuse.
21. Turn the reefer on locally and run it for at least 15 minutes.
22. Contact [ORBCOMM Customer Care](#) to ensure the PT 6000 is activated. Provide them with the device's serial number and the asset identification number.

## APPENDIX A RT 6000 TO PT 6000 ADAPTER

The RT 6000 to PT 6000 (p/n ST101038-001) adapter is a 12" (30 cm) cable connecting the two products. The adapter has an 18-pin male connector at one end, and a 24-pin connector at the other.

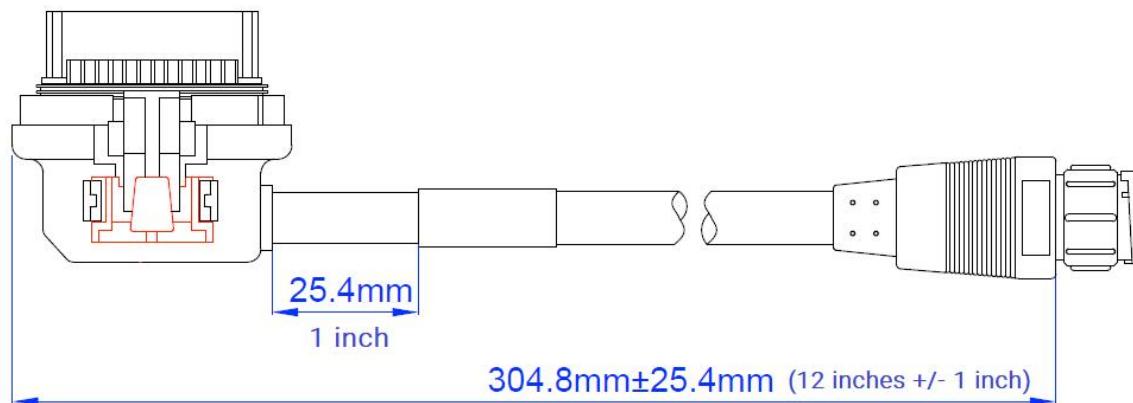


Figure 1: 24-Pin Connector and 18-Pin Connector - Connector View

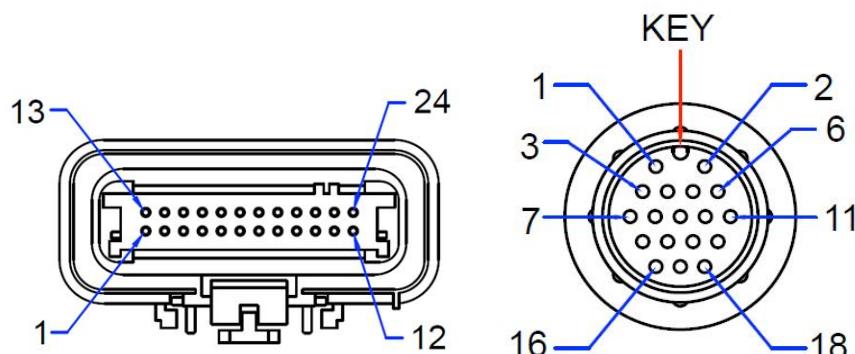


Table 2: PIN Assignment

Signal	24-Pin Connector - PIN Number	18-Pin Connector - PIN Number
Reefer_12 V	24	11
GND	23	12
GND	22	5
Console_TX_RS	21	9
Console_RX_RS	20	1
N/A	19 to 17	-
Fuel_IN_J401	16	10
Trailer_Hook (AVC)	15	6

Signal	24-Pin Connector - PIN Number	18-Pin Connector - PIN Number
Fuel_PWR	14	17
Hook_Fuel_PWR_OUT	13	16
Analog_IN (BKR3)	12	18
Door (DKR1)	11	8
PWR_BOX_MUX_CTL	10	15
Reefer_RX_RS_1	9	14
Reefer_TX_RS_1	8	13
N/A	7	-
Digital I/O_Spare (AC1)	6	3
PWR_BOX_RST	5	7
OFF_Key	4	2
GND	3	4
N/A	2 and 1	-