Install Remote IRU Enclosure 2242

Radio Dot System

Installation Instructions

1/1531-FGB 101 0308/1 Uen B1B

Contents

1 Introduction

This document addresses the installation of the Remote IRU Enclosure 2242 (1/BFL 901 141/1). For additional information on the description of the enclosure, refer to Radio Dot System Description, 164/1551-LZA 701 6001/1. For additional information of IRU replacement inside the enclosure, refer to Replace Indoor Radio Unit, 128/1543-LZA 701 6001/1.

The Remote IRU Enclosure can be installed in three different ways:

- Horizontally, in a 19 inch rack
- Vertically, single enclosure on a wall
- Vertically, dual enclosure on a wall

Using IRU cascading, up to twelve enclosures can be connected.

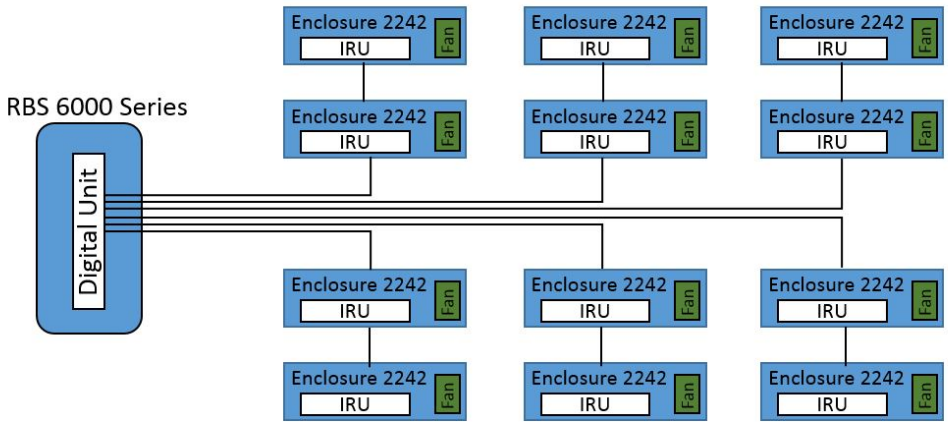


Figure 1 Remote IRU Enclosure Supported Configuration

2 Restrictions and Limitations

The following are restrictions and limitations associated with using or installing the Remote IRU Enclosure 2242:

- The Remote IRU Enclosure is not dependent of any software release. The dependency resides on the IRU located inside the enclosure.
- The IRU requires to be at release L14B/W15A as a minimum to support the external alarm feature.
- Only Port 1 of the external alarm port on the IRU can be used to propagate the enclosure fans alarm to the Digital Unit.
- OSS-RC Cabinet Viewer is not supported.
- IRU must be configured as a Remote IRU.
- The alarm port on the IRU must be provisioned as "Normally Closed" state (normallyOpen = false).
- In a vertical wall mount deployment scenario, the installation must observe adequate separation between CAT cables and power cables. See *RDI Cabling Guidelines, 56/1553-LZA 701 6009/1*.
- Autointegration of the Remote IRU Enclosure 2242 is not supported with DUW and DUS based nodes.
- The Remote IRU Enclosure 2242 requires 100 mm minimum clearance space behind the unit for airflow and proper cooling.

3 Prerequisites

The following must be assumed as already performed or obtained:

- Installation tools for wall mounting:
  - T20 Torx Screw Driver (M4)
  - T8 Torx Screw Driver (M2.5)
  - Drill and Drilling Bit 5/32 inch (4 mm)
  - ¼ inch (6 mm) by 1 ½" (38 mm) Lag Screws (2)
  - Measuring tape
  - Level
  - Stud Finder
  - Socket Wrench and a 7/16 inch (11 mm) Socket

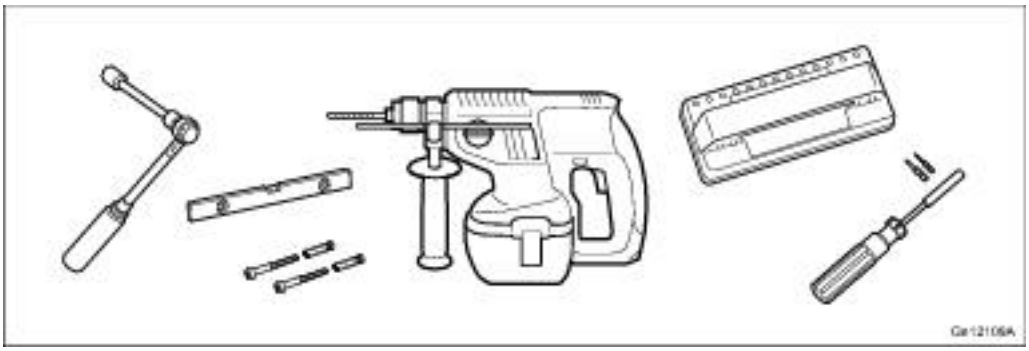


Figure 2 Wall Installation Tools

- Installation tools for rack mounting:
  - T8 Torx Screw Driver (M2.5)
  - T20 Torx Screw Driver (M4)
  - T30 Torx Screw Driver (M6)
- Indoor Radio Unit (IRU 2242)
- Cat6a cables are already laid out.
- Cat6a cables are terminated and tested with recommended tester. See *RDI Cabling Guidelines, 56/1553-LZA 701 6009/1*.

- Radio Dots have been installed. See *Install Radio Dot, 46/1531-LZA 701 6001/1*.
- Power and protection requirements are implemented - For information on power and protection requirements, refer to *Remote IRU Enclosure 2242 Description 2/1551-FGB 101 0308/1*.

4 Shipping Box Content

The Remote IRU Enclosure 2242 (1/BFL 901 141/1) shipping box comes with the following content:

- Qty 2 - Small L Bracket
- Qty 2 - Large L Bracket
- Qty 1 - Ground Bracket
- Qty 8 - M4 bracket screws
- Qty 1 - Alarm Cable
- Qty 1 - DC Power cable

5 Installation Procedure

The following section describes the preparation of the enclosure as well as the installation procedure for a 19-inch rack or a single and dual wall mount.

Note: The Remote IRU Enclosure 2242 requires 100 mm minimum clearance space behind the unit for airflow and proper cooling.

5.1 Maximum Torque for Screws

Before proceeding with the procedures included in this document, consult the following table in order not to exceed the maximum torque values for each screw type.

Table 1

Screw Size	Screw Driver	Use	Torque Value-Metric	Torque Value-Imperial	Torque Value-Imperial
M2.5	T8	Front plate to enclosure	0.4 Newton Meters	3.54 in-lbs	0.3 ft-lbs
M4	T20	Brackets to Enclosure, IRU inside the Enclosure	2.5 Newton Meters	22.13 in-lbs	1.8 ft-lbs
M6	T30	Brackets to frame rack [1]	6.0 Newton Meters	53.1 in-lbs	4.4 ft-lbs

[1] The screws used to fix the Enclosure to the rack are not supplied by Ericsson and may not be of M6 type (#12). See rack supplier for information on hardware to be used.

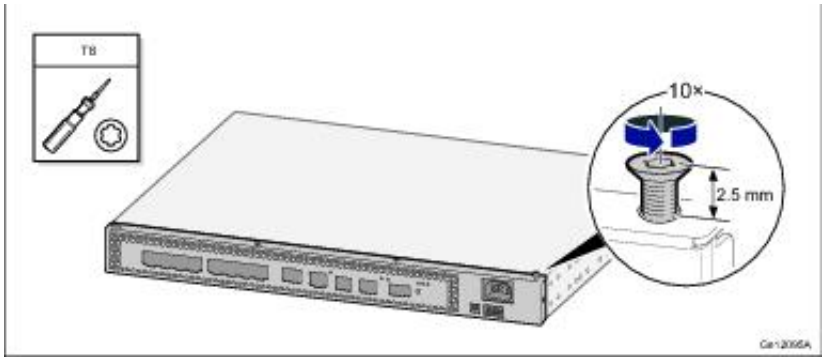
5.2 Enclosure Preparation

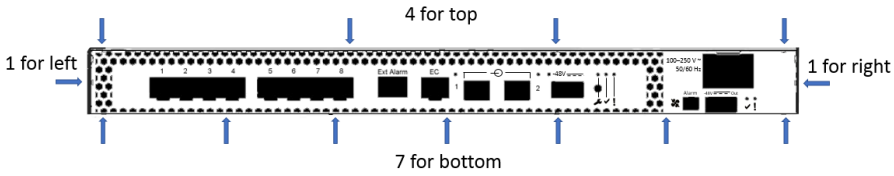
This procedure is used to install the IRU inside the enclosure and install the brackets on the enclosure.

Steps

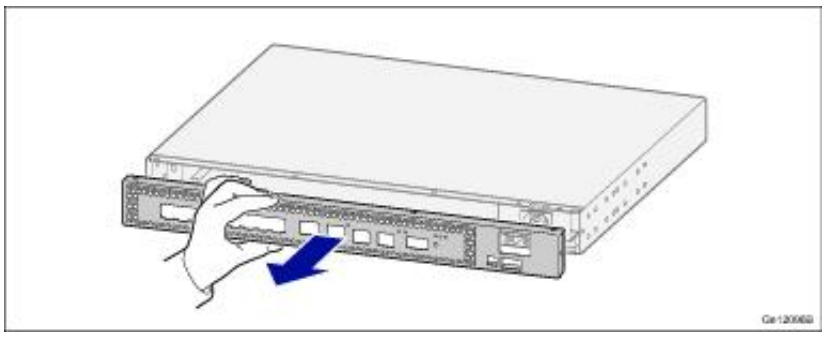
1. Ensure that all the prerequisites have been met.
2. Carefully unpack the Remote IRU Enclosure and the accompanying material from the packaging box.

3. Using a Torx screw driver with a T8 bit, unscrew the side, top and bottom screws (2.5 mm) off the faceplate (thirteen screws - 7 x bottom, 4 x top, 1 x left, 1 x right).

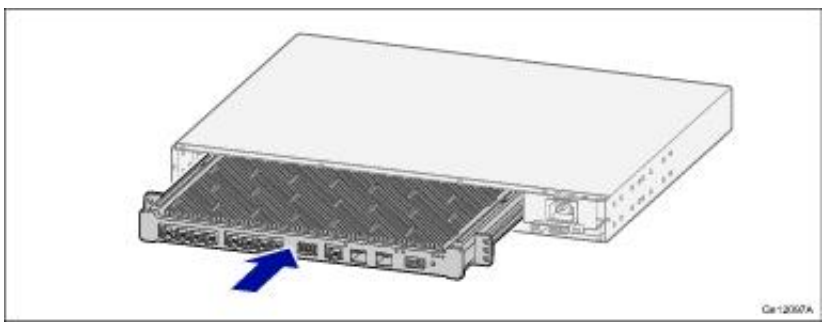




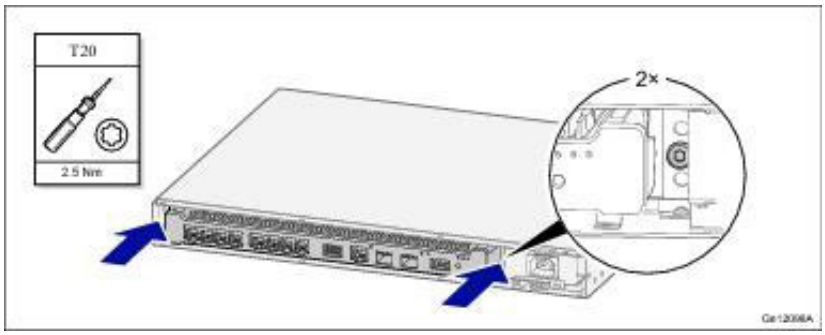
4. Pull off the faceplate from the enclosure.



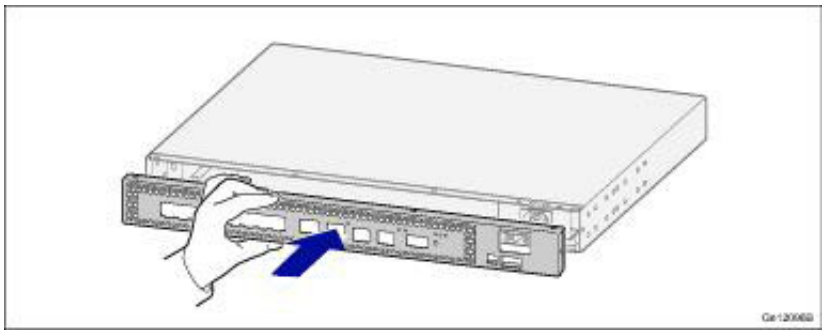
5. Insert the IRU by sliding it through the groves inside the enclosure.



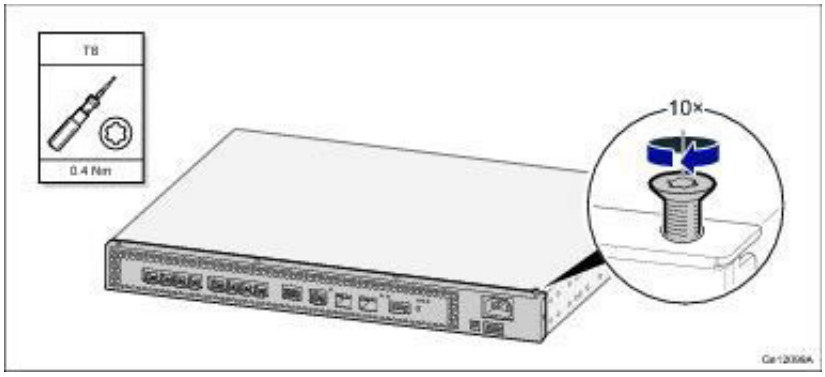
6. Secure the IRU inside the enclosure by screwing both retention screws on the IRU brackets.



7. Put the faceplate back on the enclosure.



8. Screw the faceplate back on the enclosure.



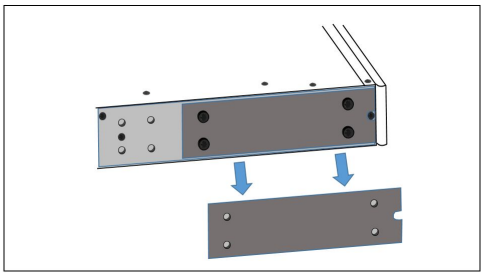
Note: Do not use more than 0.4 N·m of torque on the screws.

5.3 Installing the Enclosure on a 19-Inch Rack

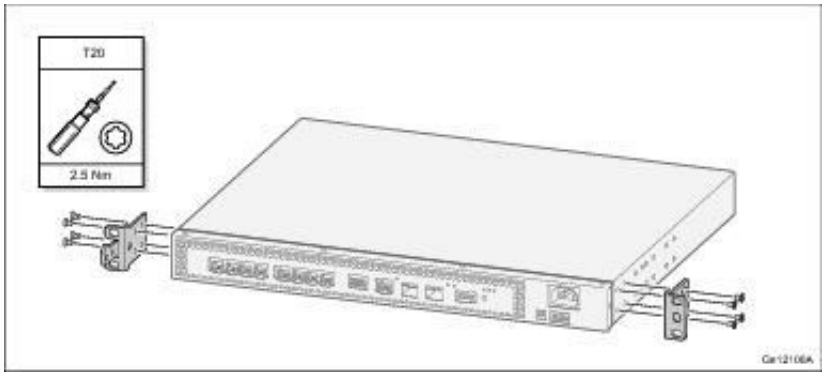
This procedure addresses installing the enclosure in a 19-inch rack.

Steps

1. Ensure that the enclosure preparation steps have been completed.
2. Take off the protective plate located on the left side of the enclosure by unscrewing the four M4 screws using a T20 Torx screw driver.

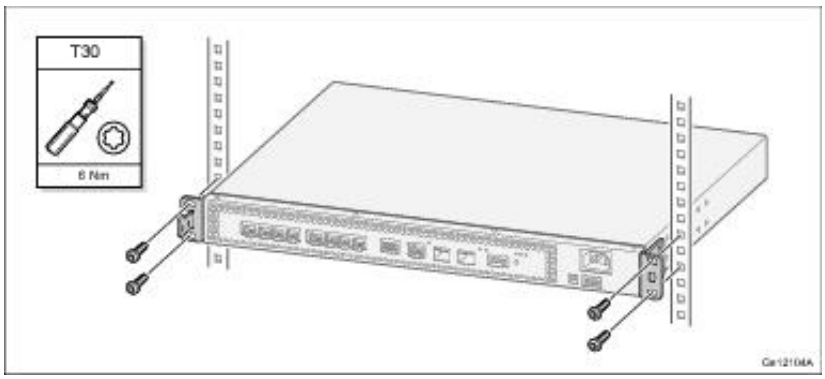


3. Install the rack brackets on the enclosure. Install the grounding bracket on the left side, where the protective plate was taken off.

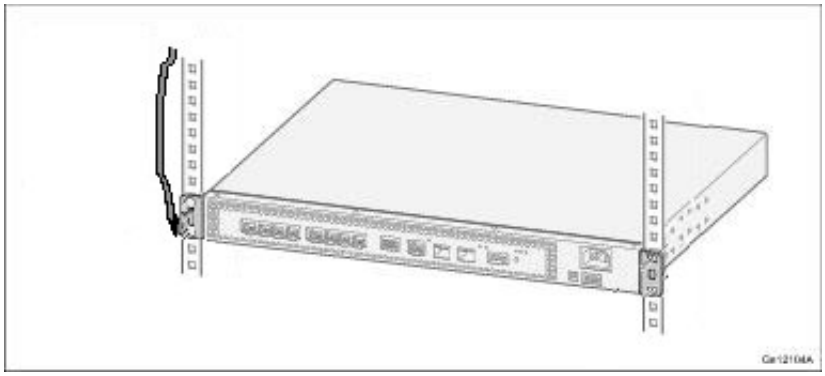


Note: Select the proper holes to attach the brackets to allow for the desired offset with the rack.

4. Locate the height at which to mount the enclosure in the rack.
5. Align the enclosure brackets with the rack holes where the enclosure should be located.
6. Using a screw driver, secure both brackets to the 19-inch rack with the proper screw for that rack (M6 or #12 screws).

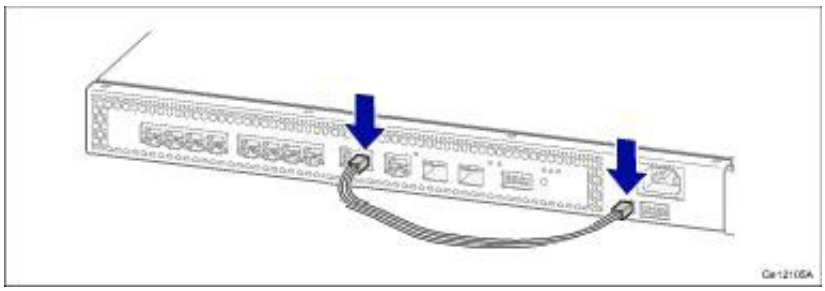


7. Run a ground cable to the bracket with the grounding log connector.

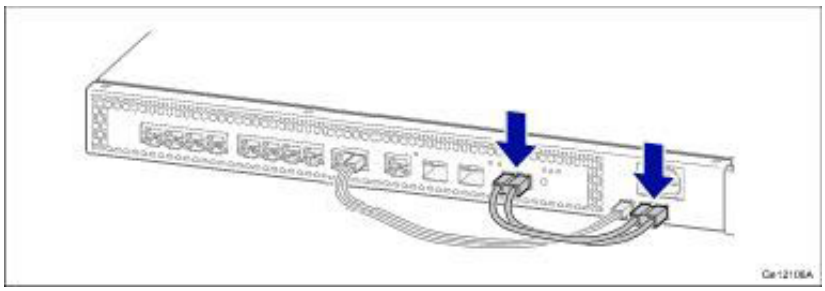


Note: Use the proper double grounding log.

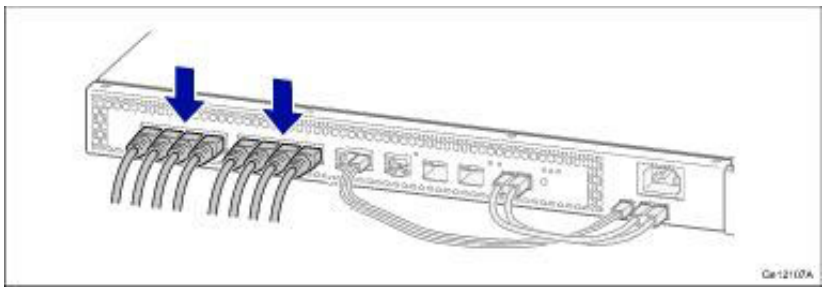
8. Connect the alarm port of the IRU to the alarm port of the enclosure. The Alarm port 1 is located on the two pins on the right side.



9. Connect the power cable from the IRU -48v DC port to the enclosure -48v DC output port.

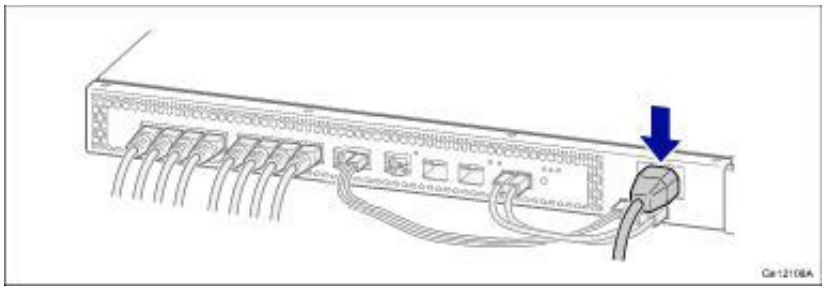


10. Connect all the Cat6a cables from the IRU to the RDs.



Note: Make sure to follow the *RDI Cabling Guidelines, 56/1553-LZA 701 6009/1* about routing the Cat6a cables away from the power cable.

11. Connect the AC power cord from an AC power outlet to the enclosure AC power port.



5.4 Installing a Single Enclosure on a Wall

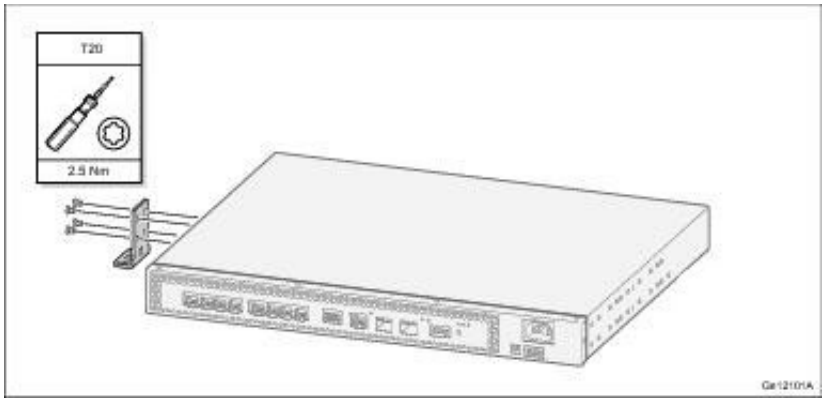
This procedure addresses installing a single or double enclosure on a wall.

Note: When mounted correctly, there will be a 15 mm gap between the enclosure and the wall to allow for Cat 6a cable latch access.

Steps

1. Ensure that the enclosure preparation steps have been completed.

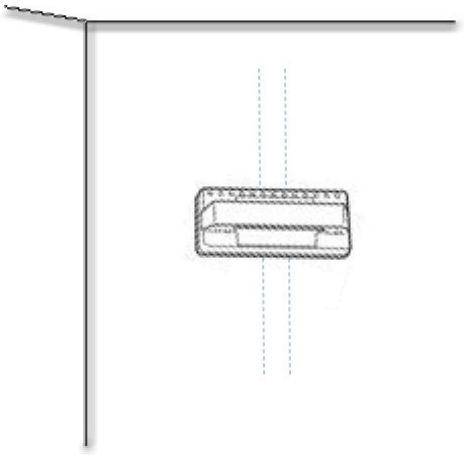
2. Using T20 torx screw driver and four M4 screws, pre-install one single unit bracket in the center of the side of the unit farthest from the AC power outlet.



Note: Do not exceed 2.5 N·m of torq.

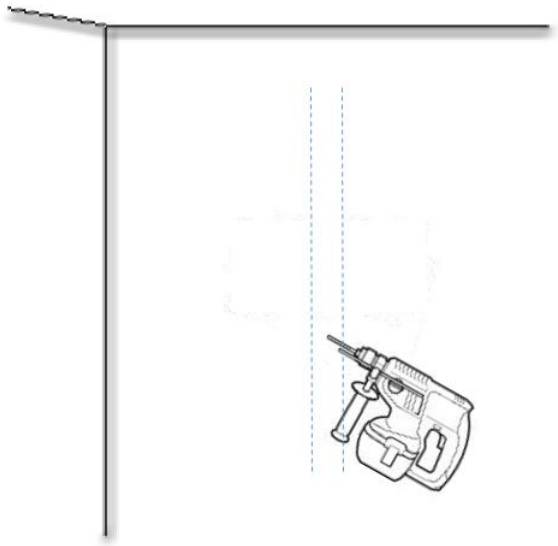
3. Locate the area on the wall where the enclosure will be installed.

4. Scan the wall with a stud finder to identify stud location. Mark with a pencil the edges of the stud.

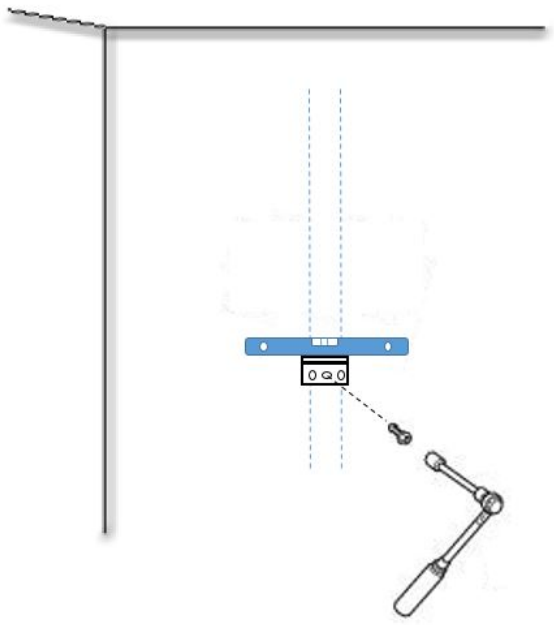


5. Identify on the wall, inside the stud edges, where the bottom edge of the unit is to be located.

6. Drill a 5/32 inch (4 mm) guide hole, ½ inch (13 mm) deep into the stud.

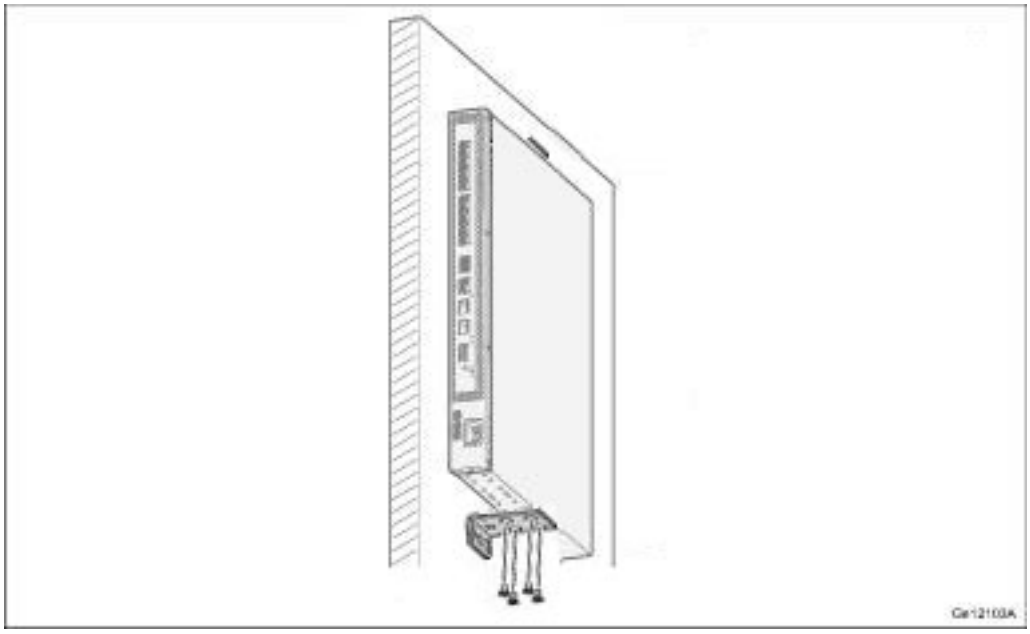


7. Using a socket wrench and a 7/16 inch (11 mm) socket, attach the bottom single unit bracket to the wall using a ¼ inch (6 mm) by 1 ½” (38 mm) lag screw through the center hole of the bracket.
8. Use a level to ensure the bracket is installed level before tightening.

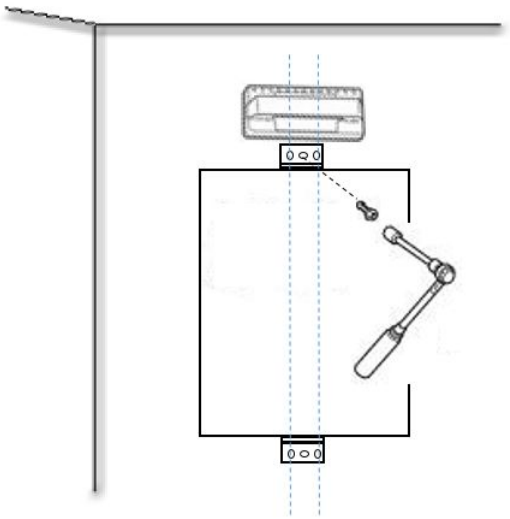


9. Install the enclosure on to the bracket attached to the wall using four M4 screws (included with the enclosure).

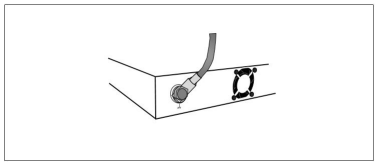
Note: Ensure to attach the bracket to the enclosure at the same position as the top bracket. Do not exceed 2.5 N·m of torq.



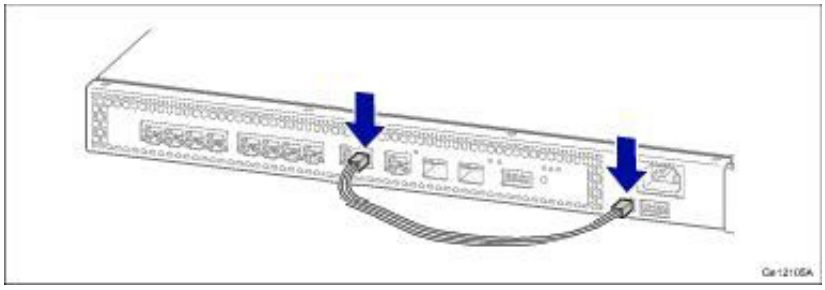
10. Use the stud finder to confirm that the center hole of the bracket that is pre-installed on the top edge of the enclosure, is located in the middle of the wall stud.
11. Drill a 5/32 inch (4 mm) guide hole into the stud through the center hole of the bracket.
12. Using a socket wrench and a 7/16 inch (11 mm) socket, attach the top single unit bracket to the wall using a ¼ inch (6 mm) by 1 ½” (38 mm) lag screw through the center hole of the bracket.



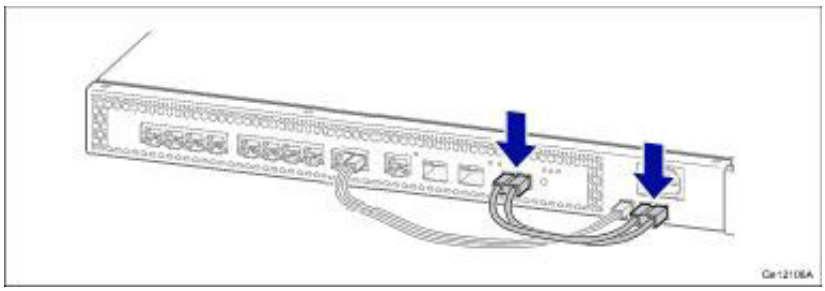
13. Run the grounding wire to the back of the enclosure and attach it to the grounding bolt using a stud hole lug.



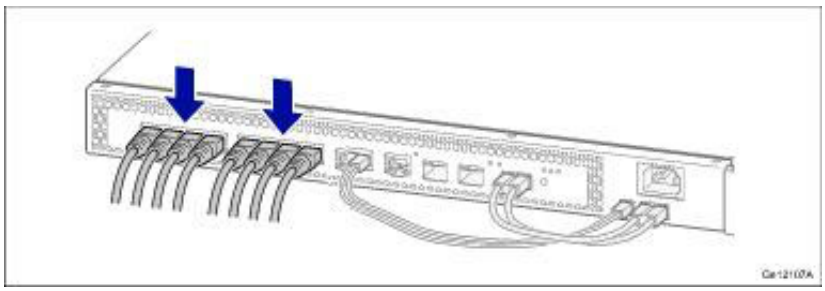
14. Connect the alarm port of the IRU to the alarm port of the enclosure. The Alarm port 1 is located on the two pins on the right side.



15. Connect the power cable from the IRU -48v DC port to the enclosure -48v DC output port.

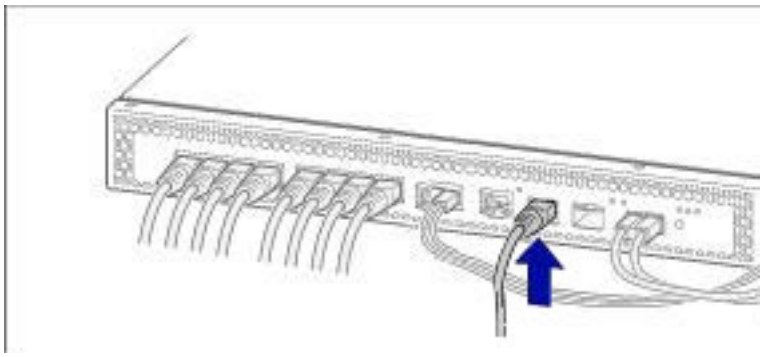


16. Connect all the Cat6a cables from the IRU to the RDs.

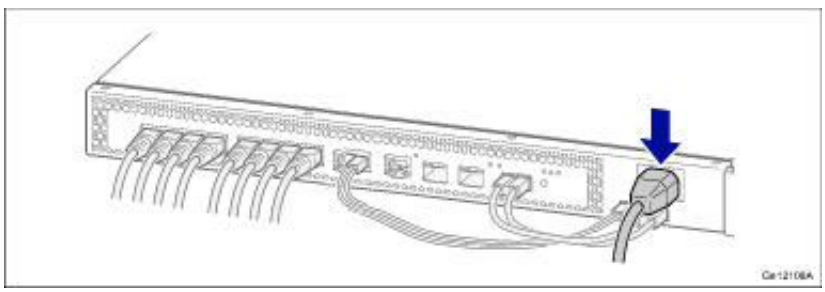


Note: Make sure to follow the *RDI Cabling Guidelines, 56/1553-LZA 701 6009/1* about routing the Cat6a cables away from the power cable.

17. Connect the CPRI Port 1 of the first IRU to the CPRI backhaul using an optical or electrical CPRI cable depending on the distance needed.



18. Connect the AC power cord from an AC power outlet to the enclosure AC power port.

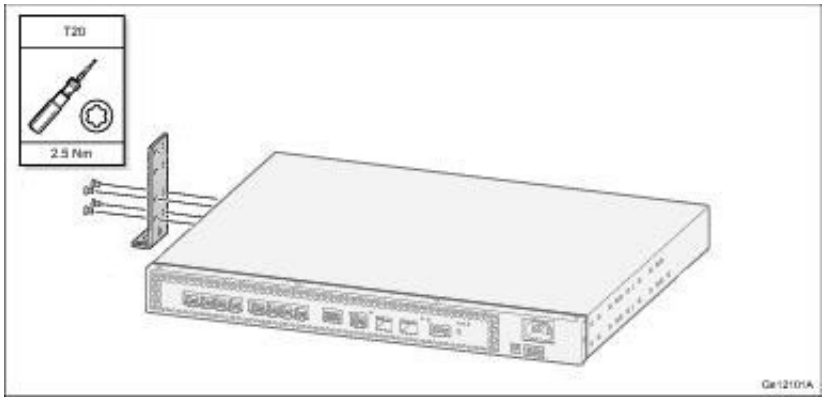


5.5 Installing a Dual Enclosure on a Wall

This procedure addresses installing a single or double enclosure on a wall.

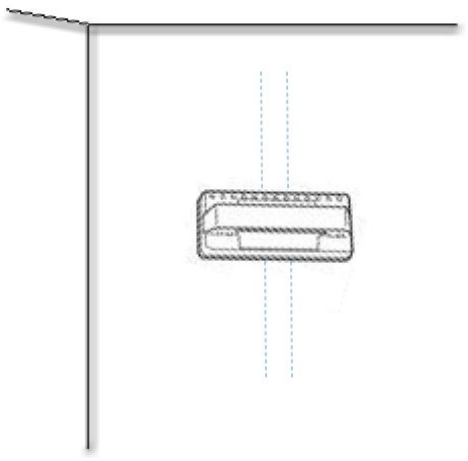
Steps

1. Ensure that the enclosure preparation steps have been completed for the two enclosures.
2. Using T20 Torx screw driver and four M4 screws, pre-install one double unit bracket in the center of the side of the unit farthest from the AC power outlet. Use the holes closest to the right angle on the bracket so that the bracket protrudes from the enclosure.

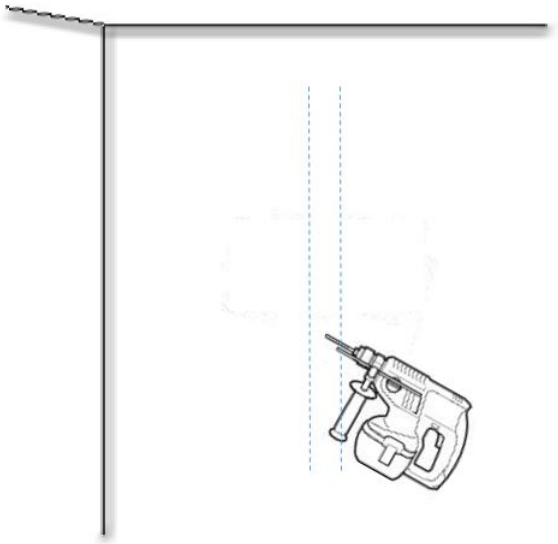


Note: Do not exceed 2.5 N·m of torq.

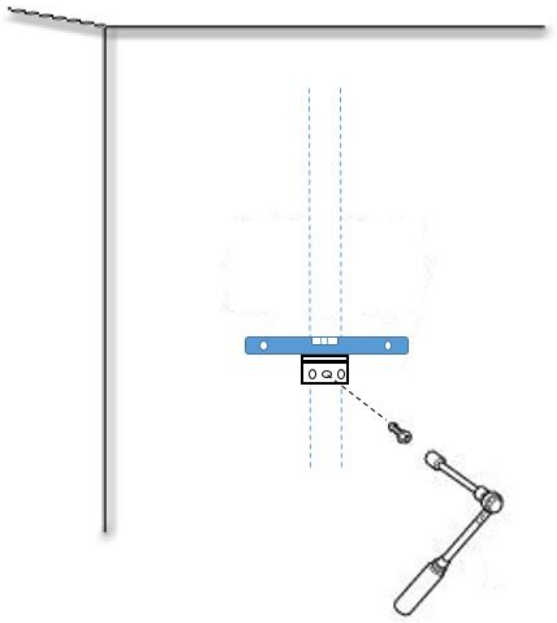
3. Locate the area on the wall where the enclosure will be installed.
4. Scan the wall with a stud finder to identify stud location. Mark with a pencil the edges of the stud.



5. Identify on the wall, inside the stud edges, where the bottom edge of the unit is to be located.
6. Drill a 5/32 inch (4 mm) guide hole, ½ inch (13 mm) deep into the stud.

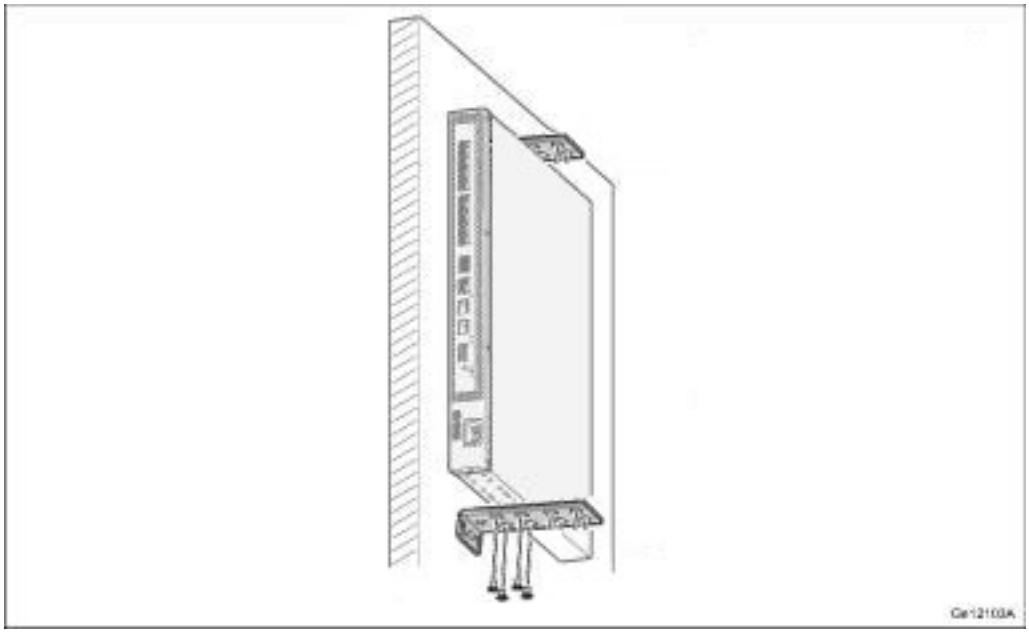


7. Using a socket wrench and a 7/16 inch (11 mm) socket, attach the bottom single unit bracket to the wall using a ¼ inch (6 mm) by 1 ½” (38 mm) lag screw through the center hole of the bracket.
8. Use a level to ensure the bracket is installed level before tightening.



9. Install the enclosure on to the bracket attached to the wall using four M4 screws (included with the enclosure).

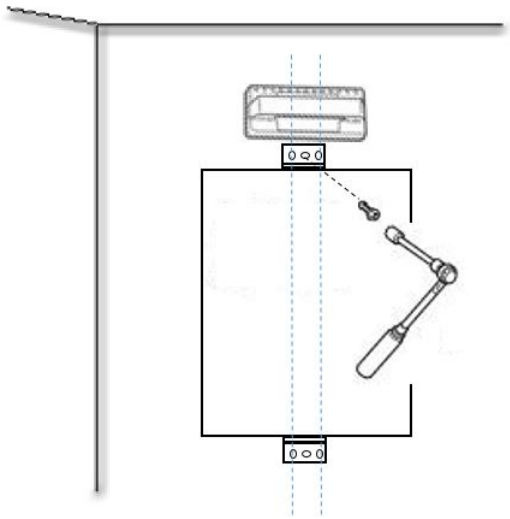
   Note: Ensure to attach the bracket to the enclosure at the same position on the opposite side of the enclosure. Do not exceed 2.5 N·m of torq.



10. Use the stud finder to confirm that the center hole of the bracket that is pre-installed on the top edge of the enclosure, is located in the middle of the wall stud.

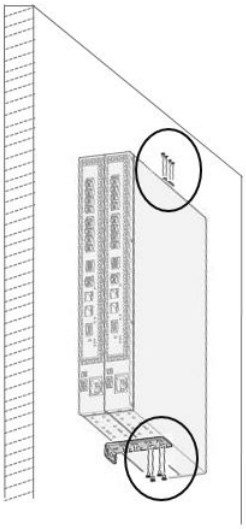
11. Drill a 5/32 inch (4 mm) guide hole into the stud through the center hole of the bracket.

12. Using a socket wrench and a 7/16 inch (11 mm) socket, attach the top single unit bracket to the wall using a ¼ inch (6 mm) by 1 ½” (38 mm) lag screw through the center hole of the bracket.



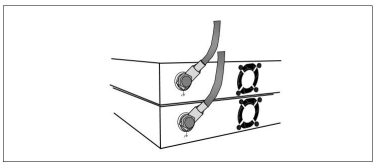
13. Position the second unit in the mounting brackets, against the first unit.

14. Fasten the second unit in place using eight M4 screws with a T20 Torx driver

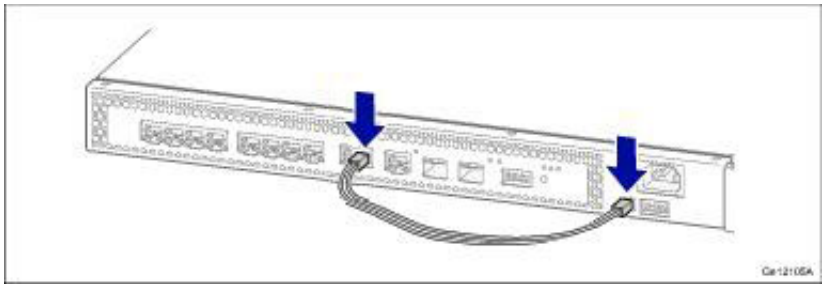


Note: Do not exceed 2.5 N·m of torq.

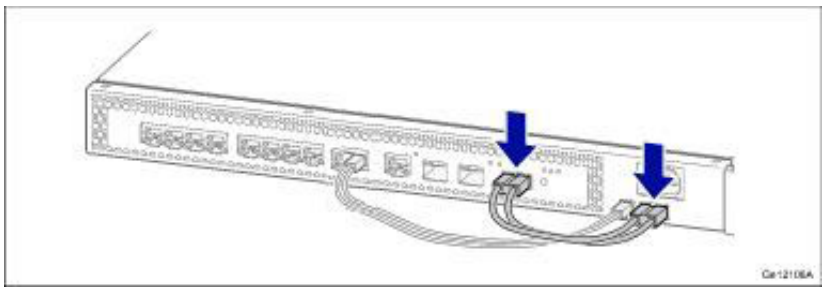
15. Run the grounding wire to the back of the enclosure and attach it to the grounding bolt. Run a separate grounding wire for each enclosure.



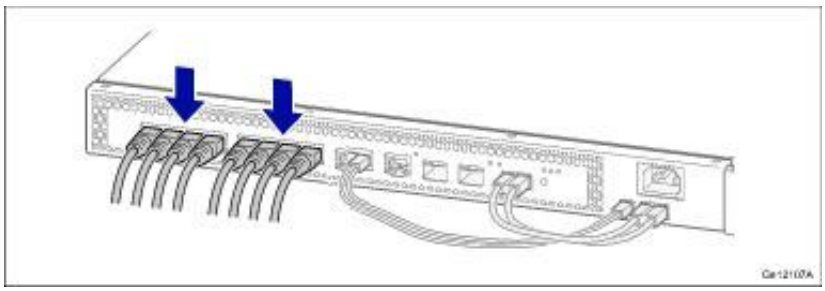
16. Connect the alarm port of the IRU to the alarm port of the enclosure on each enclosure. The Alarm port 1 is located on the two pins on the right side.



17. Connect the power cable from the IRU -48v DC port to the enclosure -48v DC output port for each enclosure.

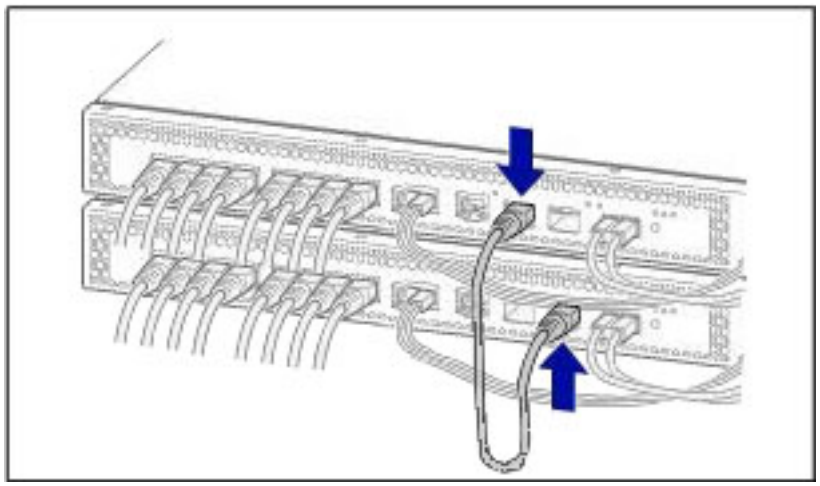


18. Connect all the Cat6a cables from the IRU to the RDs for each enclosure.

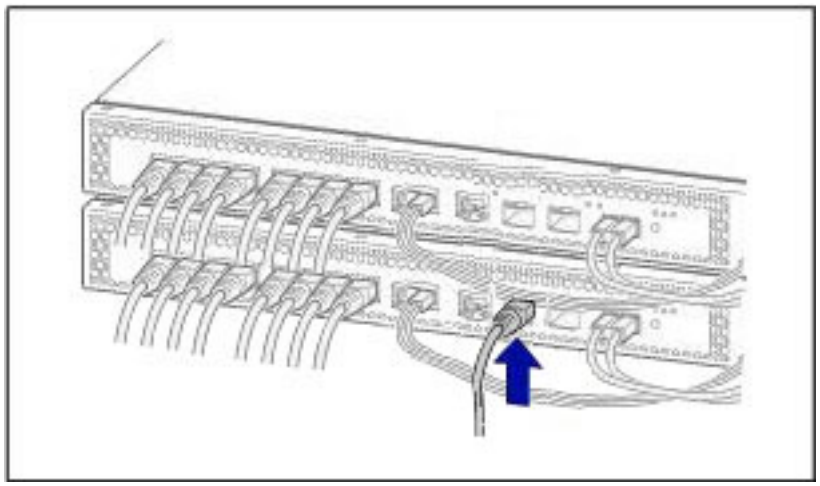


Note: Make sure to follow the *RDI Cabling Guidelines, 56/1553-LZA 701 6009/1* about routing the Cat6a cables away from the power cable.

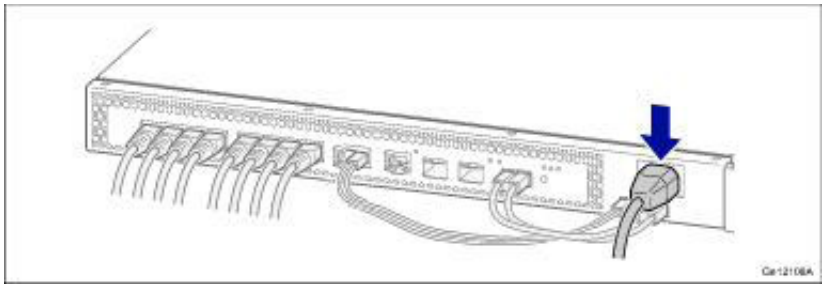
19. Connect the CPRI Port 2 of the first IRU to the CPRI Port 1 of the second IRU using an electrical CPRI cable.



20. Connect the CPRI Port 1 of the first IRU to the CPRI backhaul using an optical or electrical CPRI cable depending on the distance needed.



21. Connect the AC power cord from an AC power outlet to the enclosure AC power port.



6 Remote IRU Commissioning

The commissioning of the Remote IRU can be performed for one of the following:

- Migration from an RBS 6601 to a Remote IRU Enclosure.
- Greenfield commissioning.

The commissioning for an IRU that is managed by a DUW or a DUS is performed by CLI commands through AMOS. The commissioning of an IRU managed by a Baseband can be performed through CLI or eNodeB Element Manager.

If migrating from a local IRU in an RBS 6601, start by following the steps in the **Deleting IRU MO Structure from RBS 6601 to Migrate to Remote IRU Enclosure - DUS/DUW Managed** procedure. Following this, perform the **Creating a Remote IRU Enclosure 2242 MO structure - DUS/DUW Managed** procedure.

If creating the IRU structure as a greenfield deployment, go directly to the **Creating a Remote IRU Enclosure 2242 MO structure - DUS/DUW Managed** procedure.

6.1 Deleting IRU MO Structure from RBS 6601 to Migrate to Remote IRU Enclosure - DUS/DUW Managed

This procedure describes how to delete the MO structure under the IRU to migrate an existing IRU from an RBS 6601 or RBS 6202 to a Remote IRU Enclosure 2242 while being managed by a DUS or DUW. The procedure involves removing Managed Objects associated with the IRU present in the RBS 6601.

Other Managed Objects, such as **PositionRef**, **RiLink**, and **RdiPort** must be deleted.

Use the following procedure to migrate the IRU.

Steps

1. Locate cells associated with this IRU.

   ```
   st cell
   ```

2. Lock the cells associated with this IRU.

   ```
   bl cell|sector
   ```

3. List MOs associated with this IRU.

   pr . AuxPluginUnit=IRU-x

```
==========================================================================
Proxy  MO
==========================================================================
  508  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3
  509  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,RiPort=DATA_1
  510  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,RiPort=DATA_2
  511  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,RdiPort=1
  512  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,RdiPort=2
  513  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,RdiPort=3
  514  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,RdiPort=4
  515  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,RdiPort=5
  516  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,RdiPort=6
  517  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,RdiPort=7
  518  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,RdiPort=8
  519  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,DeviceGroup=ru
  520  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,DeviceGroup=ru,TrDeviceSet=tr
  521  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,DeviceGroup=ru,XpProgram=CXP9013268/14_R64GA_D822172268
  522  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,DeviceGroup=ru,AlarmPort=1
  523  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,DeviceGroup=ru,AlarmPort=2
  524  Equipment=1,RbsSubrack=1,RbsSlot=3,AuxPlugInUnit=IRU-3,DeviceGroup=ru,RdicDeviceSet=rdic
```

4. Block the IRU.

   bl Equipment=1,RbsSubrack=1,RbsSlot=x,AuxPlugInUnit=IRU-x

   Where X represents the target IRU.

5. Delete the slot associated with the removed IRU.

   acc swallocation=rbs_ru deleteSlot

6. Set all 8 rdiport references on the IRU side to nothing as prerequisite of remote IRU feature.

   set Equipment=1,RbsSubrack=1,RbsSlot=1,AuxPlugInUnit=IRU-1 ,rdiport=1 remoterdiportref

---

Do!

Repeat this step for all 8 ports.

---

7. Set all 8 rdiport references on the RD side to nothing as prerequisite of remote IRU feature.

   set Equipment=1,AuxPlugInUnit=RD-1-1,RdiPort=1 remoteRdiPortRef

Do!

Repeat this step for all 8 ports.

8. Delete the RiLink 1 associated with this IRU.

   ```
   rdel Equipment=1,RiLink=1
   ```

9. Delete the RiLink 2 associated with this IRU (Optional step. Delete only if present.)

   ```
   rdel Equipment=1,RiLink=2
   ```

10. Delete all MOs under the IRU MO structure.

    ```
    rdel
    Equipment=1,RbsSubrack=1,RbsSlot=1,AuxPlugInUnit=IRU-1
    ```

6.2 Creating a Remote IRU 2242 MO structure - DUS/DUW Managed

This procedure involves creating the Remote IRU MO structure directly under the **Equipment** MO.

Other Managed Objects and attributes, such as **PositionRef**, **RiLink**, **RdiPort**, and **AlarmPort** must be modified.

Steps

1. Create the **AuxpluginUnit** under the **Equipment** MO.

   ```
   cr Equipment=1,AuxPlugInUnit=Remote-IRU-1
   ```

2. Enter the following piuType.

   ```
   PiuType=KRC161444/2_*
   ```

   Note: The PiuType can be any of the following depending on its version: KRC1614442/1, KRC1614442/2, KRC1614442/3.

3. Create the RdiPort references between the **Remote-IRU-1** and each of the RDs.

   ```
   set ManagedElement=1,Equipment=1,AuxPlugInUnit=Remote-
   IRU-1,RdiPort=X remoterdiportref AuxPlugInUnit=RD-1-
   X,RdiPort=1
   ```

   Note: Where X represent a number from 1 to 8. Same for each RdiPort and RD.

Repeat this step as many times as there are RDs.

4. Create the RdiPort references between each of the RDs and the **Remote-IRU-1** for the other way.

   ```
   set Equipment=1,AuxPlugInUnit=RD-1-X,RdiPort=1
   remoteRdiPortRef
   ManagedElement=1,Equipment=1,AuxPlugInUnit=Remote-
   IRU-1,RdiPort=X
   ```

   Note: Where X represent a number from 1 to 8. Same for each RdiPort and RD.

   Repeat this step as many times as there are RDs.

5. Create the RiLink 1.

   ```
   cr Equipment=1,RiLink=1
   ```

   a. The following prompt is displayed:

      Attribute 1 of 2, riPortRef1 (moRef:RiPort):

      Enter mo LDN:

      Respond to the prompt with the following reference:

      ```
      Subrack=1,Slot=1,PlugInUnit=1,RiPort=A
      ```

   b. The following prompt is displayed:

      Attribute 2 of 2, riPortRef1 (moRef:RiPort):

      Enter mo LDN:

      Respond to the prompt with the following reference:

      ```
      ManagedElement=1,Equipment=1,AuxPlugInUnit=Remot
      e-IRU-1,RiPort=DATA_1
      ```

6. Create the RiLink 2 for the IRU cascading CPRI. This is an optional step that is necessary only for a dual enclosure installation.

   ```
   cr Equipment=1,RiLink=2
   ```

   a. The following prompt is displayed:

      Attribute 1 of 2, riPortRef2 (moRef:RiPort):

      Enter mo LDN:

      Respond to the prompt with the following reference:

      ```
      Subrack=1,Slot=1,PlugInUnit=1,RiPort=B
      ```

b. The following prompt is displayed:

   Attribute 2 of 2, riPortRef2 (moRef:RiPort):

   Enter mo LDN:

   Respond to the prompt with the following reference:

   ```
   ManagedElement=1,Equipment=1,AuxPlugInUnit=Remot
   e-IRU-1,RiPort=DATA_2
   ```

7. Set the alarm port **normallyOpen** attribute to False. This sets the alarm port attribute to a Normally Closed value.

   ```
   set
   Equipment=1,RbsSubrack=1,RbsSlot=1,AuxPlugInUnit=IRU-1
   ,DeviceGroup=ru,AlarmPort=1 normallyOpen false
   ```

8. Deblock the alarm port.

   ```
   deb
   Equipment=1,RbsSubrack=1,RbsSlot=1,AuxPlugInUnit=IRU-1
   ,DeviceGroup=ru,AlarmPort=1
   ```

9. Validate the creation of the Managed Objects by reloading them with the following command:

   ```
   lt all
   ```