Charles Universal Broadband Enclosure
SH52-481616xNED
General Description and Installation

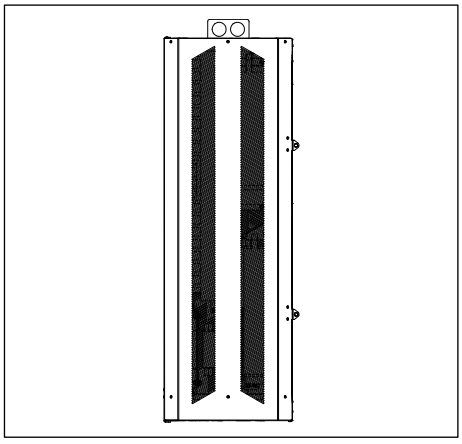

Figure 1 Front View of the SHRD52

1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides general information for the SH52-481616xNED universal backplane radio shroud. Figure 1 shows a closed front view of the enclosure.

-NOTE-
Hereafter, the Charles Universal Broadband Enclosure SH52-481616xNED shroud will be referred to as the "SHRD52."

1.2. Product Purpose

This SHRD52 provides outdoor mounting for radio equipment. Brackets for the specified configuration ship with the SHRD52. All radio equipment is customer supplied.

1.3. Product Mounting and Location

This enclosure is suitable for outside plant-type (OSP) locations and those that may require NEC compliance. The outdoor, weather-resistant SHRD52 is to be mounted on a pole (using a pole-mount bracket kit, purchased separately). The installer connects the power, fiber, and copper connections. Detailed mounting and installation information is covered in Section 3.

2. PRODUCT DESCRIPTION

The SHRD52 is a vented radio enclosure that supports one Ericsson 8863 radio, one Ericsson 4455 radio, one Ericsson 6308 power supply, one Ericsson FrontHaul 6585 DWDM, and two CommScope CBC1726T diplexers.

Figure 2 shows the SHRD52 dimensions. Figure 3 shows the main components of the SHRD52.

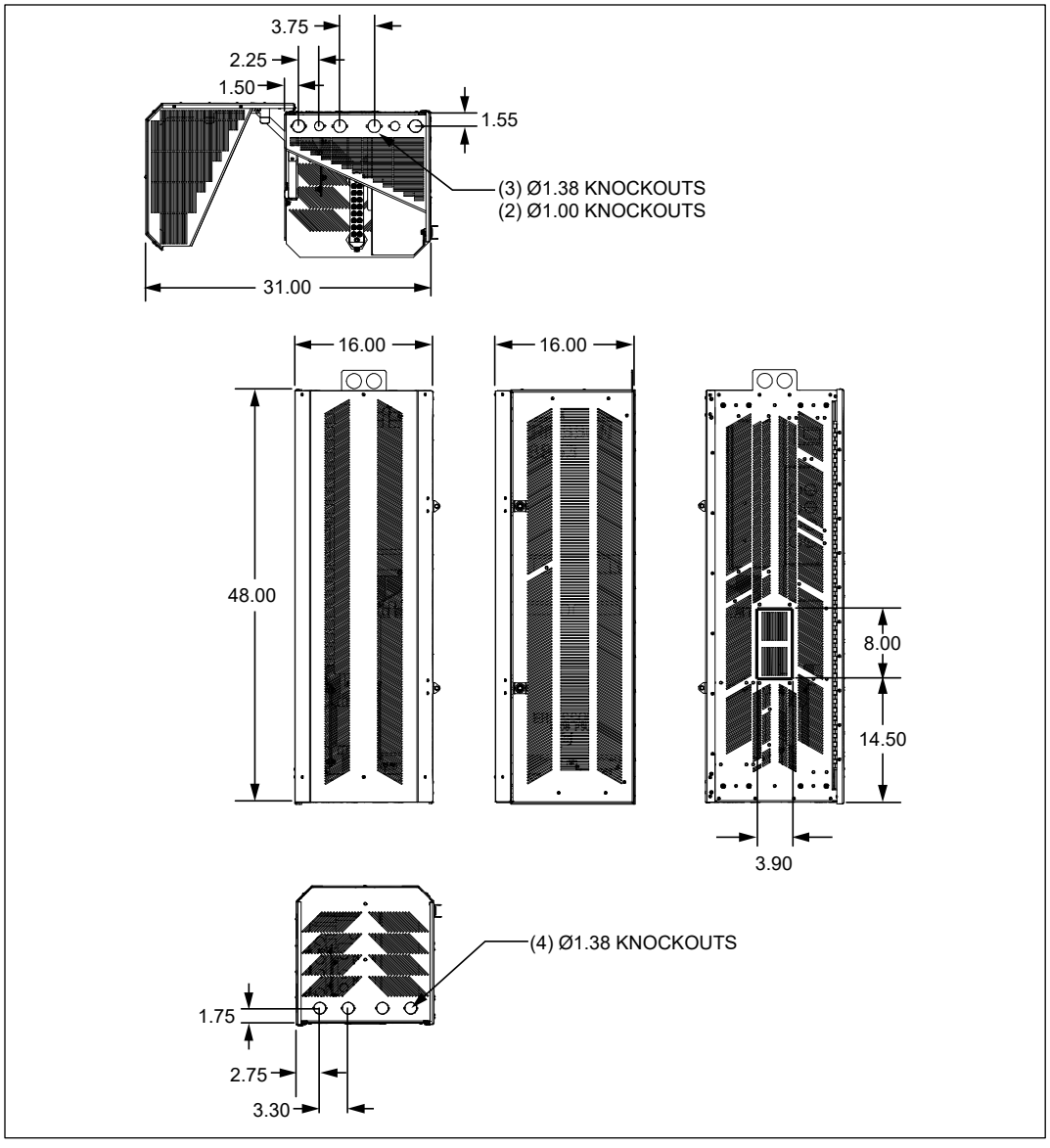

Figure 2 SHRD52 Dimensions (in inches)

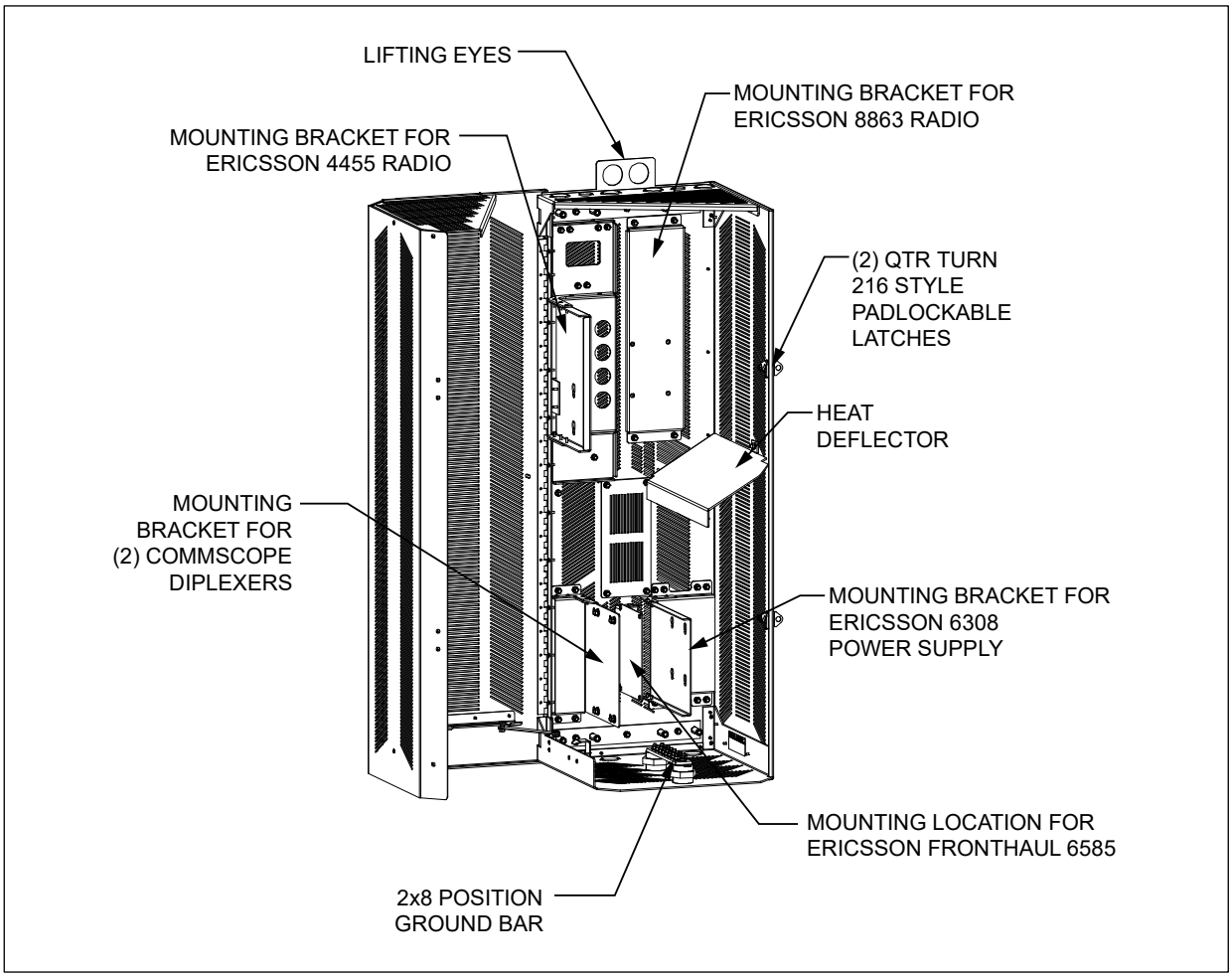

Figure 3 SHRD52 Components

3. INSTALLATION

3.1. Inspecting the Product

The SHRD52 is shipped in a carton. Unpack the unit and dispose of the packaging material.

-INSPECTION NOTE-

Visually inspect the unit for damages prior to installation. If the equipment was damaged in transit, immediately report the extent of the damage to the transportation company.

3.2. Following and Using Safety Precautions

Read the following site and safety tips, cautions, and warnings, then proceed with the paragraphs that follow.

- For installation, follow all National Electrical Codes (NEC) ANSI/NFPA 70, local, environmental, workplace, and company codes, safety procedures, and practices.
- Minimum spacing between the accessories and components and the housing for ITE equipment shall be maintained for safe operation of the equipment when installed in accordance with NEC ANSI/NFPA 70.
- Read all instructions, warnings and cautions on the equipment and in the documentation shipped with the product.
- Always connect ground connections first.
- Do not place this product on weak or unstable surfaces which may allow the product to fall, resulting in potentially serious damage(s) to persons or product.
- Only authorized trained personnel shall install the SHRD52.
- In windy conditions, be sure to engage the wind latch to secure the door in a stationary position.

3.3. Obtaining Tools and Equipment

Obtain the following recommended or needed items for installing the SHRD52.

- Sufficient length and quantities of fiber cable (or pigtails)
- Cable scoring, opening, and cutting tools for cable sheathing, shields, wrappings, strength members and buffer tubes
- Wire strippers
- Crimpers
- Cable, tube, wire, and fiber cleaning materials
- Protective and/or insulated work gloves
- Safety glasses
- Tape measure
- Marking utensil
- #6 ground wire or rod and earth ground materials
- Bond strap (optional, from cable bond clamp to bond post)
- Any exterior cable strain relief, per company practice
- Slotted, hex, and Phillips screwdrivers
- Torque wrench
- Assorted cable ties, clips, or fasteners (optional)
- Can wrench (216 type tool)
- Derrick for lifting
- Level

3.4. Preparing the Installation Site

Observe the following site preparation recommendations.

- Leave adequate horizontal and vertical space between multiple installations to allow for proper cable access, as well as enough room around the enclosure to open the door(s).
- The site must meet minimal personnel and equipment safety requirements.
- The distance from the cable entry point should be consistent with local installation practices.
- The pole must be able to support the weight of the SHRD52 and the mounting bracket kit.
- Run all fiber and copper facilities to the site.

3.5. Lifting the SHRD52

See Table 1 for SHRD52 weight. Charles recommends the following procedure for lifting the SHRD52.

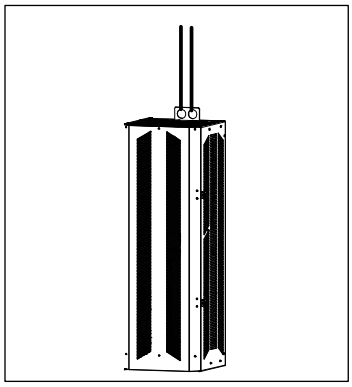

Figure 4
Lifting the SHRD52

3.5.1. Required Equipment

- One derrick (crane) capable of lifting the SHRD52
- Two lifting slings or chains with each having a 2,500 lbs. capacity
- Connecting links to attach slings to the SHRD52's lifting brackets
- 75-ft. long tagline rope

Insert the lifting sling connecting links securely through each of the lifting brackets as shown in Figure 4.

3.5.2. Warnings and Specific Safety Precautions

⚠	**WARNING**	**Improper hoisting equipment and unsafe lifting procedures can result in serious injury or death**

Observe the following local safety procedures when performing the tasks in this section.

- Keep the SHRD52 away from any power lines.
- Keep bystanders away from the work operations at all times.
- Only trained operators shall operate the crane for lifting and setting the SHRD52.
- Do not suspend loads over people or equipment.
- All persons working with hoisting equipment shall wear standard safety gear according to local practices including safety helmets and steel-toed shoes.
- Do not operate the hoisting equipment until all stabilizer are extended and in firm contact with the ground or adequate support structure.
- Do not attempt to retract or extend the stabilizers while a load is suspended.

3.6. Mounting the SHRD52

Mount the SHRD52 on a pole using a Charles offset pole-mount kit (97-002459x-A, purchased separately). Mount the kit onto the pole, then use the 3/8" hex screws with lock washers and flat washers included with the kit to attach the kit to the SHRD52 (Figure 5). See the documentation that ships with the kit for more information.

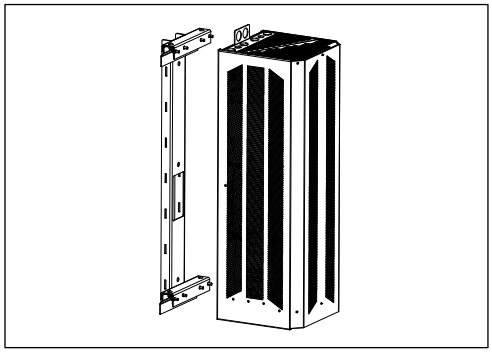

Figure 5
Attach to the Mounting Kit

3.6.1. Torque Requirements

Torque all hardware as shown below (unless otherwise noted). These values apply to SAE Grade 1 & 2 Low Carbon Steel, ASTM A307 Low Carbon Steel, and Stainless Steel Grade 18-8.

Thread Size	In-lbs	Ft-lbs
4-40	4±10%	
6-32	8±10%	
8-32	16±10%	
10-32	26±10%	
12-24	50±10%	
1/4-20/M6	60±5%	5±5%
5/16-18	125±5%	10.4±5%
3/8-16	180±5%	15.0±5%
1/2-13	500±2%	41.7±2%
5/8-11	1000±1%	83.3±1%

3.7. SHRD52 Wiring and Equipment

After the SHRD52 is properly mounted in the desired location, apply No-Ox where bus bar and other 2-hole lug connections will be made. Install ground and power connections. Always ground the equipment first, before making any other connections.

⚠	WARNING	Perform all bonding and grounding connections prior to any electrical and communications connections.

3.7.1. Ground Connection

Use the 2x8 position ground bar provided inside the SHRD52 for all grounding of internal equipment and for connecting a site ground wire.

3.7.2. Fiber and Copper Entry

The SHRD52 has multiple Ø1.38" and Ø1.00" knockouts on the top and bottom that accommodate Ø1.00" and Ø0.75" conduit fittings, respectively. It also has a removable panel on the central spine. See Figure 2 for knockout and panel locations.

3.8. Customer Equipment Mounting

All equipment is mounted using customer supplied hardware. Install equipment in the order given here. Figure 6 shows the complete installation.

3.8.1. Ericsson 4455 Radio

1. Insert the mounting hardware loosely into the mounting holes on the back of the radio.
2. Set the bolts into the keyholes from the right-facing side of the bracket.
3. Tighten the bolts from the left side of the bracket so that the radio is secure.

3.8.2. Ericsson 8863 Radio

1. Remove the bracket from the SHRD52 rear panel. Save the hardware.
2. Attach the bracket to the radio.
3. Mount the radio/bracket assembly back onto the rear panel using hardware removed previously.

3.8.3. Ericsson 6308 Power Supply

1. Insert the mounting hardware loosely into the mounting holes on the back of the power supply.
2. Set the bolts into the keyholes from the right-facing side of the bracket.
3. Tighten the bolts from the left side of the bracket so that the power supply is secure.

3.8.4. Ericsson FrontHaul 6585 DWDM

Mount the 6585 onto the right-facing side of the bracket.

3.8.5. CommScope CBC1726T Diplexers

Mount one diplexer onto each side of the bracket. Mounting hardware is included with the kit.

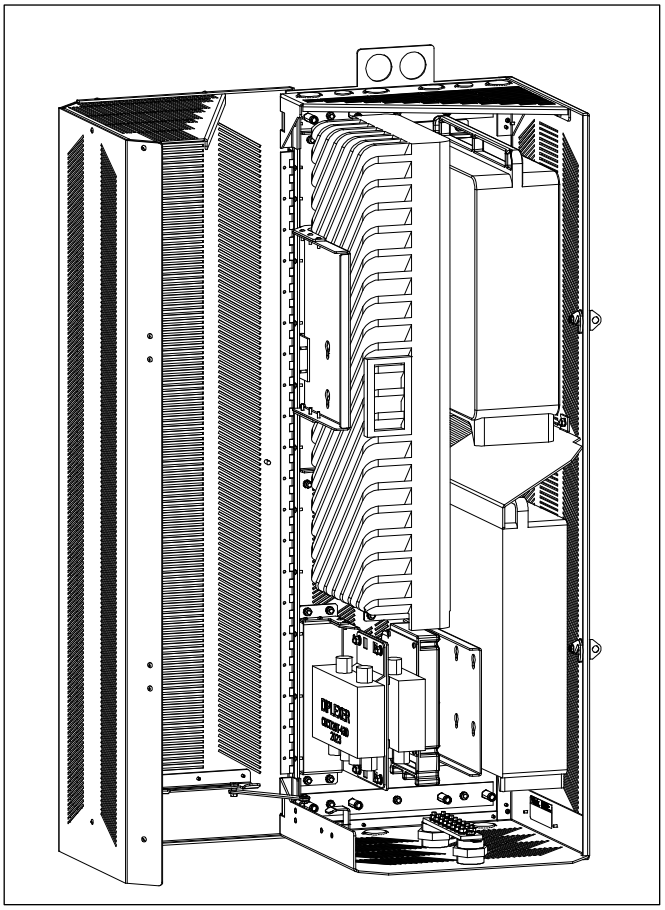

Figure 6
SHRD52 with Equipment Installed

4. PERIODIC MAINTENANCE

In the event that the enclosure must be opened in freezing conditions, use a narrow, pointed metallic object such as a screwdriver or chisel, along with a non-metallic device like a rubber mallet, to remove excessive ice buildup around the door and locking mechanism. A commercial aerosol de-icer spray can be used to free up locks and latches if needed. Use protective gloves and safety glasses when applying de-icer sprays.

5. TECHNICAL ASSISTANCE AND REPAIR SERVICE

For questions on product repair or if technical assistance is required, contact Charles Technical Support.

847-806-8500
techserv@charlesindustries.com (email)
http://www.charlesindustries.com/techserv.htm

6. WARRANTY & CUSTOMER SERVICE

Charles Industries LLC offers a one-year warranty on the SHRD52 product. The Charles warranty is limited to the operation of the SHRD52 hardware as described in this documentation and does not cover equipment that may be integrated by a third party. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract. For questions on warranty or other customer service assistance, contact your Charles Customer Service Representative.

847-806-6300
mktserv@charlesindustries.com (email)
http://www.charlesindustries.com/main/telecom_sales_support.htm

7. SPECIFICATIONS

Physical	
Dimensions	48”Hx16”Wx16”D
Weight	Approx. 67 lbs. as shipped; 239 lbs. with equipment
Materials	Enclosure: 0.125” aluminum and steel Brackets: aluminum and steel
Electrical	
Bonding and Grounding	(1) 2x8 position ground bar
Supported Equipment	(1) Ericsson 4455 radio (1) Ericsson 8863 radio (1) Ericsson 6308 power supply (1) Ericsson FrontHaul 6585 DWDM (2) CommScope CBC1726T-4310 diplexers
Cable Entry	See Figure 2 and section 3.7.2
Environmental	
Operating Temp. Range, Outside Enclosure	-40° to +115°F, -40° to 46°C
Operating Temp Range, Inside Enclosure	-40° to +131°F, -40° to 55°C
Humidity	0 to 95% (non-condensing)
Altitude	Up to 2,000 meters (6560 feet)
Kits and Replacement Parts	
216 Type Security Tool	07-002070-0
1/4 Turn Hook Latch with Padlock Hasp	39-200801-0
Hook Latch Catch	21-111189-0

Table 1 SHRD52 Specifications

Part Number	Mounting Kit	Color	Touch-up Paint
SH52-481616DNED	97-002549D-A	Classic Texture Gray	02-000629-0
SH52-481616FNED	97-002549F-A	Onyx Black	02-000611-0
SH52-481616GNED	97-002549G-A	National Park Brown	02-000626-0

Table 2 Color Options