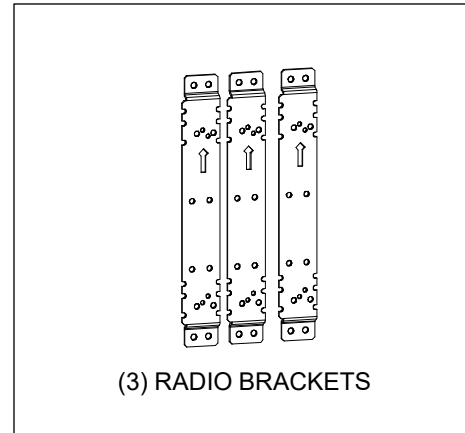


# Charles Retrofit Kit

## 97-002492-A

### General Description and Installation

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**Figure 1      Kit Components**

## 1. GENERAL INTRODUCTION

### 1.1. Document Purpose

This document provides general information for the 97-002492-A retrofit kit for the Charles Industries SH60-503027xNC7 radio shroud (without the universal backplane). Figure 1 shows the kit components. Mounting hardware is not shown.

*-NOTE-*  
Hereafter, the Charles 97-002492-A retrofit kit will be referred to as the "kit."  
The SH60-503027xNC7 (non-universal backplane) radio shroud will be referred to as the "SHRD60."

### 1.2. Product Purpose

The kit consists of a set of brackets to be installed in the SHRD60. The brackets support (1) Nokia AWHHF radio and (2) Nokia Airscale Micro radios. An existing mounting panel in the SHRD60 supports (1) MI-300-2042 triplexer and (1) Nokia POD-8 multiplexer. All equipment is customer supplied.

## 2. INSTALLATION

### 2.1. Inspecting the Product

The kit 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.*

### 2.2. Following and Using Safety Precautions

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

- Read all instructions, warnings and cautions on the equipment and in the documentation shipped with the product.
- 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 kit.
- In windy conditions, be sure to engage the wind latch to secure the door in a stationary position.

### 2.3. Obtaining Tools and Equipment

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

- Protective and/or insulated work gloves
- Safety glasses
- Can wrench (216 type tool)
- Tape measure
- Marking utensil
- Drill with 5/16" bit
- Hex screwdriver
- Torque wrench
- Level

### 2.4. Mounting the Kit

In all images in this section, the SHRD60 doors are hidden for clarity.

Prior to mounting the kit, remove all radio equipment and brackets from the SHRD60, except for the two ION ML radios and the mounting plate in the center. Figure 2 shows the SHRD60 prepared for the kit installation.

Hardware for mounting the kit brackets into the SHRD60 is supplied with the kit. Hardware for mounting the radio equipment is customer supplied.

#### 2.4.1. 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%

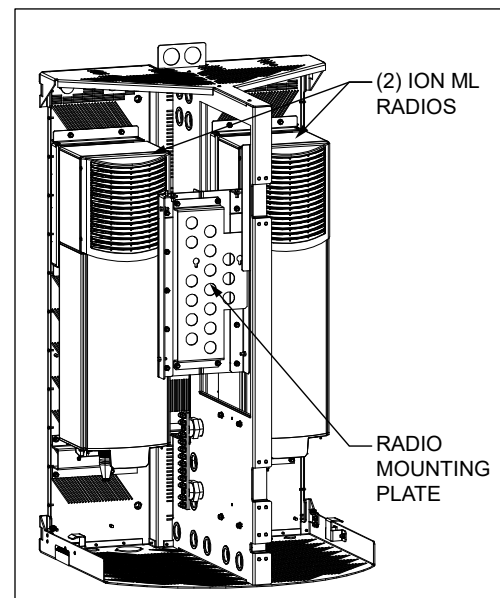


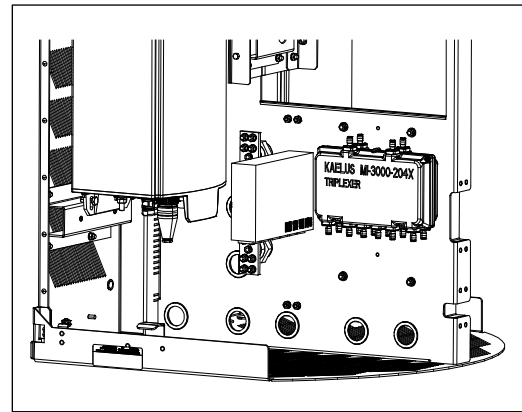
Figure 2 Empty SHRD60

**2.4.2. Prepare SHRD60 for Equipment**

Place the triplexer and multiplexer:

The triplexer and multiplexer are mounted onto the left side of the central panel. No brackets are included with the kit.

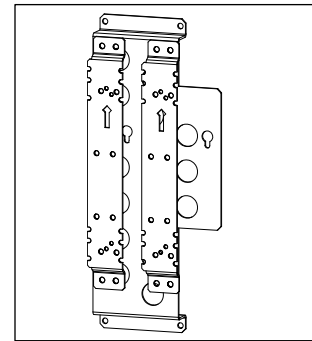
1. Select mounting locations on the left side of the central panel. Ensure the equipment is vertically level, and that it does not interfere with the ground bar.
2. Measure the mounting holes on the equipment and use these measurements to drill mounting holes on the panel. Use the mounting holes to determine drill bit size.
3. Use touch-up paint on the inner surfaces of the holes to prevent corrosion.
4. Use customer supplied hardware to mount the triplexer and multiplexer on the chosen locations (Figure 3).



**Figure 3  
Triplexer and Multiplexer Locations**

Brackets for upper radios:

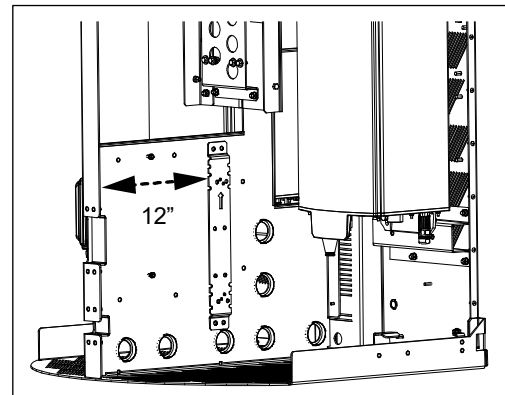
1. Remove the radio mounting plate from the center of the SHRD60.
2. Hold the brackets on the mounting plate (Figure 4). Ensure that the kit brackets are flush against the top of the plate, and the outer edges of each kit bracket is flush with the edges of the plate.
3. Mark the locations of all mounting holes in the bracket.
4. Set the bracket aside and drill holes at the marked locations. Use a 5/16" drill bit.
5. Use touch-up paint on the inner surfaces of the holes to prevent corrosion.



**Figure 4  
Upper Radio Brackets**

Bracket for lower radio:

1. Hold the third kit bracket against the right side of the SHRD60 central panel (Figure 5). Ensure the bracket is vertically level and that it does not overlap with the cable pass-thru openings at the bottom of the panel.
2. Mark the locations of all mounting holes in the bracket.
3. Set the bracket aside and drill holes at the marked locations. Use a 5/16" drill bit.
4. Use touch-up paint on the inner surfaces of the holes to prevent corrosion.



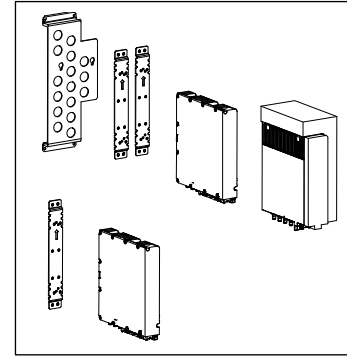
**Figure 5 Lower Radio Bracket**

**2.4.3. Mount Radios**

Use customer supplied hardware to attach the radio mounting brackets to the radios (Figure 6). Observe the UP arrow on the brackets, directing the top of the radio in the direction of this arrow.

One of the Airscale Micro radios belongs in the lower radio position, while the other Airscale Micro radio and the AWHHF radio are in the upper positions.

1. Attach the upper radio/bracket assemblies to the drilled holes in the radio mounting plate using 1/4-20 hex screws and flat washers from the front, with 1/4-20 Keps nuts on the back. Secure the plate back onto the SHRD60.
2. Attach the lower radio/bracket assembly onto the drilled holes on the right side of the central panel using 1/4-20 hex screws and flat washers from the front, with 1/4-20 Keps nuts on the back.



**Figure 6**  
Radios Onto Brackets

The complete installation is shown in Figure 7.

**3. TECHNICAL ASSISTANCE AND REPAIR SERVICE**

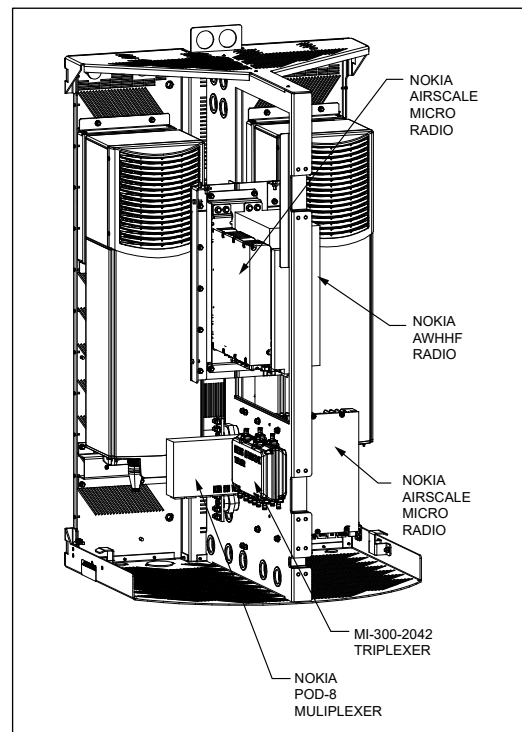
For questions on product repair or if technical assistance is required, contact Charles Technical Support.

847-806-8500  
[techserv@charlesindustries.com](mailto:techserv@charlesindustries.com) (email)  
<http://www.charlesindustries.com/techserv.htm>

**4. WARRANTY & CUSTOMER SERVICE**

Charles Industries LLC offers a one-year warranty on the kit product. The Charles warranty is limited to the operation of the kit 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](mailto:mktserv@charlesindustries.com) (email)  
[http://www.charlesindustries.com/main/telecom\\_sales\\_support.htm](http://www.charlesindustries.com/main/telecom_sales_support.htm)



**Figure 7** Complete Installation

**5. SPECIFICATIONS**

Physical	
Weight	Approx. 8 lbs. as shipped
Materials	Steel
Color	Off-white
Touch-up Paint	02-000290-0
216 Type Security Tool	07-002070-0

**Table 1** Kit Specifications