TracVision HD11 Main Board
Replacement Instructions

Technical Support

If you need technical assistance, please contact KVH Technical Support:

North/South America, Australasia:
Phone: +1 401 847-3327
Email: support@kvh.com

Europe, Middle East, Africa, Asia-Pacific:
Phone: +45 45 160 180
Email: support@emea.kvh.com

The following instructions explain how to replace the main board in a TracVision® HD11 antenna.

NOTE: Your antenna might have parts that differ from those pictured in this document. Such differences have no bearing on the instructions unless noted otherwise.

Figure 1: Main Board in an HD11 Antenna

Tools Required

This procedure requires the following tools:

- Headband light
- ESD wrist strap
- 7/16" torque wrench set to 15 in.-lbs
- Phillips screwdrivers
- Torque wrench with Phillips bits (11 in.-lbs and 21 in.-lbs)
- Flat-head jeweler's torque screwdriver set to 5 in.-lbs
- Latest HD11 software update file downloaded to a laptop computer via the KVH Partner Portal or to a mobile device via the KVH HD11 app

Step 1 - Remove the Old Main Board

Follow the steps below to remove the old main board.

CAUTION

For your own safety, disconnect power from all wired components before you begin.

a. Turn off the ACU to remove power from the antenna.

b. Disconnect the power/data cable from the back of the ACU and unplug the AC power cable from its power source.

NOTE: Follow all shipboard lockout-tagout procedures, where applicable.

c. Using a 7/16" socket/ratchet or nut driver, unlock the three hex latches securing one of the service hatches to the baseplate (see Figure 2). Open the hatch.

NOTE: If you are unable to work through the hatch, you may remove the radome instead. If possible, open the second hatch as well to allow in more light. Use a headband light if needed.

Important!

The main board is static-sensitive. Be sure to take the proper grounding precautions before handling.

d. Put on an ESD wrist strap and connect it to any bare metal portion of the antenna frame.

Important!

Do not use excessive force when loosening or tightening the DB9 connectors' retaining screws.

e. Disconnect all nine cables from the main board (see Figure 3).

Using a flat-head jeweler's screwdriver, loosen the DB9 connectors' retaining screws (nos. 1-2 and 4-8 in Figure 3) first to avoid breaking the screws. Then fully disconnect the cable.

To avoid stressing the RF cable (no. 3 in Figure 3), hold the base of the connector while loosening with a 7/16" open-end wrench.

f. Loosen the four captive screws securing the main board to the frame (see Figure 4).

g. Remove the faulty main board.

Figure 2: Service Hatches

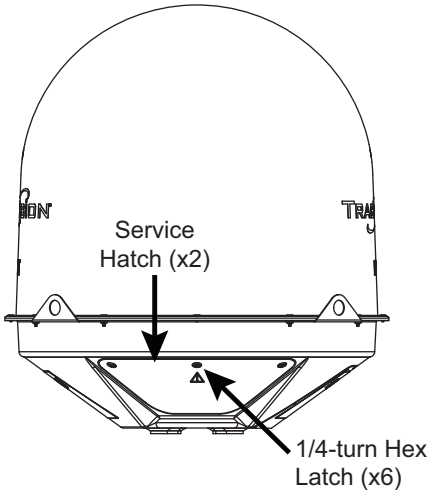


Figure 3: Main Board Cable Connectors

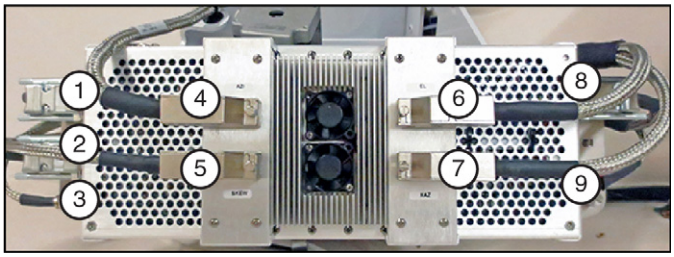
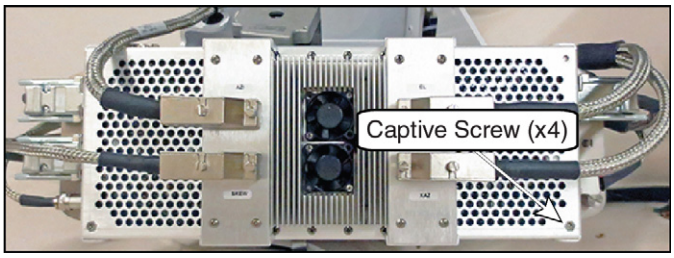


Figure 4: Main Board Captive Screws



Step 2 - Install the Replacement Main Board

Follow the steps below to secure the new main board, reconnect the cables, close the hatch, and apply power.

a. Secure the replacement main board to the frame and tighten the screws to 21 in.-lbs of torque (see Figure 5).

b. Reconnect the nine cables to the main board. Reconnect cable no. 9 (power cable) last (see Figure 6).

When reconnecting the DB9 connectors (nos. 1-2 and 4-8 in Figure 6), tighten the retaining screws to 5 in.-lbs of torque. Do not overtighten – these screws break easily.

When reconnecting the coax cable (no. 3 in Figure 6), hold the connector body while tightening the connector nut. Tighten to 15 in.-lbs of torque.

c. Slowly rotate the antenna assembly by hand a full 360° in both directions, and move the antenna through its full range of elevation and cross-azimuth. Make sure the cables do not get caught on anything or restrict movement.

d. Inspect the inside of the antenna to make sure you have not left any tools or debris inside.

e. Close all open hatches and lock their three hex latches (see Figure 7).

f. Reconnect the power/data and AC power cables to the ACU and turn on the antenna. Then wait five minutes for system startup.

Step 3 - Update the Software

Follow the instructions in the TracVision HD11 Installation Guide or User's Guide to update the system software to the latest version.

Figure 5: Main Board Captive Screws

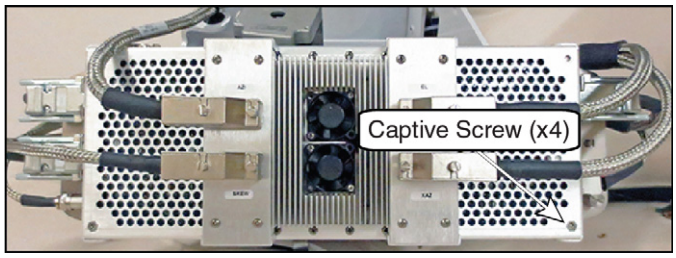


Figure 6: Main Board Cable Connectors

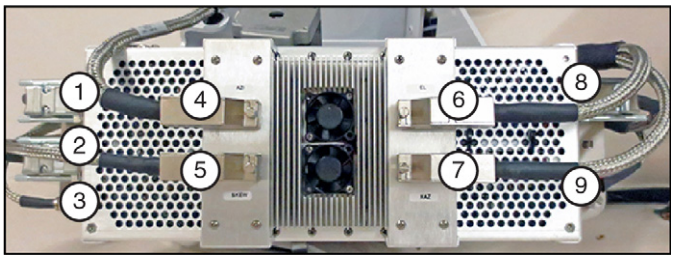
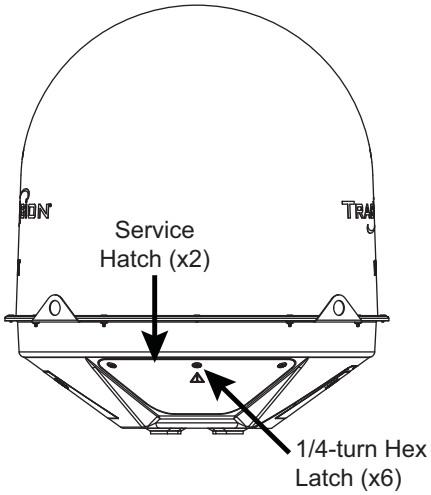


Figure 7: Service Hatches



Step 4 - Calibrate the Gyros

The sensor module's gyros need to be calibrated to work with the antenna's main board. Follow the steps below to calibrate the gyros.

Important!

Calibrate the gyros only while the vessel is stationary in calm seas.

a. Connect your computer to the HD11's Ethernet or Wi-Fi network. Then type the ACU's serial number into your web browser's address bar, as shown below:

http://hd11-<ACU serial number>.local

*NOTE: You can view the ACU's IP address and the ACU and antenna serial numbers on the ACU's front panel display. Press **MENUS** until the display shows "ABOUT SYSTEM", press **ACCEPT**, and then scroll through until you see the desired information.*

b. Log into the web interface:

Default Username: **admin**
Default Password: **password**

c. At the Support page of the web interface, select Command Line (Figure 8).

d. At the command line (see Figure 9), enter and send the following commands:

- **HALT**
- **DEBUGON**
- **EEUNLOCK**
- **=SERNUM,<9-digit antenna serial number>**
- **=SERNUM**

NOTE: The serial number you entered should appear in the Live Comms window.

- **=CALNEWGYRO**

Figure 8: Support Page and Command Line Icon

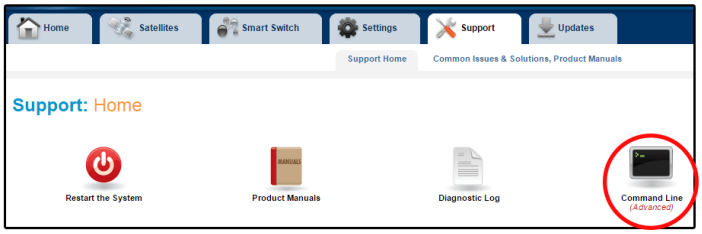
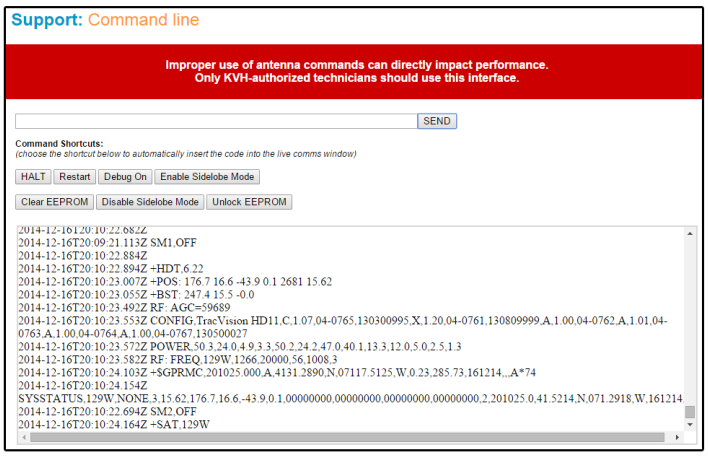


Figure 9: Command Line



e. After calibration is complete, verify that the azimuth (AZ), elevation (EL), and skew gyros all pass, then enter and send the following command:

- **ZAP**

Step 5 - Test the System

Test the system for normal operation. If the problem persists, contact KVH Technical Support.

The replacement procedure is complete!