

# TracPhone® V30 Main Board Replacement Instructions



The following instructions explain how to replace the main board in a TracPhone V30 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.*

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## Tools Required

This procedure requires the following tools:

- #2 Phillips screwdriver
- Driver with T10 Torx bit
- Torque driver set to 9 in-lbs
- ESD wrist strap
- Laptop PC with the latest V30 system software downloaded from the KVH Partner Portal ([www.kvh.com/partners](http://www.kvh.com/partners))

### IMPORTANT!

To perform the calibration steps at the end of this procedure, the vessel must remain stationary in calm seas.

### IMPORTANT!

Before you begin, contact KVH Technical Support for the correct limit switch offset values. Later, you will need to enter these values into the new main board.

Figure 1: Main Board

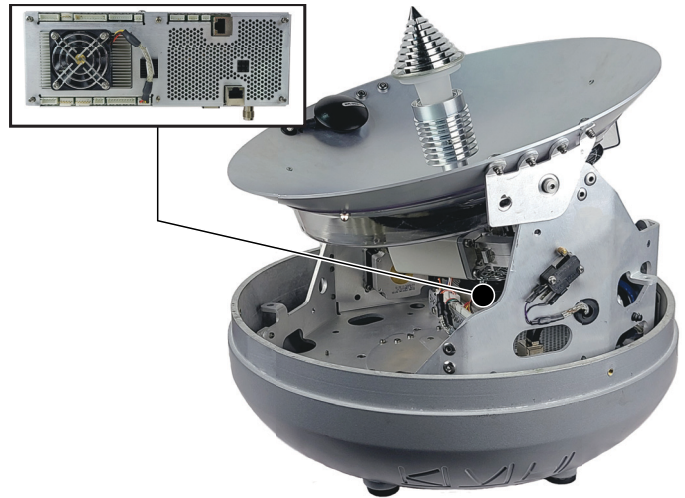
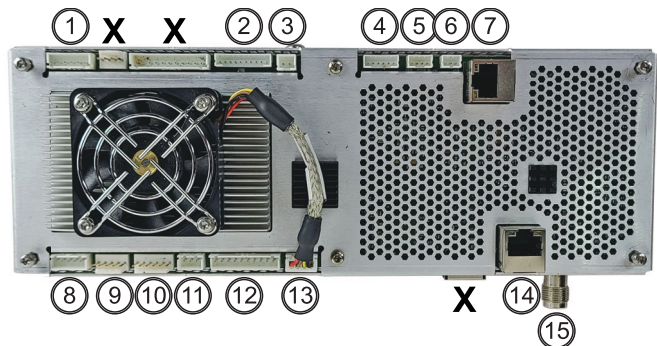


Figure 2: Main Board Cable Connections



- |                            |                          |
|----------------------------|--------------------------|
| 1. Skew Motor/Limit Switch | 9. Elevation Motor       |
| 2. Elevation Limit Switch  | 10. Azimuth Motor        |
| 3. Modem (Power)           | 11. Azimuth Sensor       |
| 4. IMU                     | 12. Modem (Fans)         |
| 5. GPS                     | 13. Main Board Fan       |
| 6. Modem (UART)            | 14. Black Ethernet Cable |
| 7. Blue Ethernet Cable     | 15. "Power In" Cable     |
| 8. Antenna ID Dongle       |                          |
- DO NOT DISCONNECT**

## Technical Support

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Worldwide: +1 401 851-3806

Email: [mvbsupport@kvh.com](mailto:mvbsupport@kvh.com)

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## Remove the Radome

Follow the steps below to disconnect power and remove the radome from the antenna.

1. Power off and unplug the VSAT-Hub to disconnect power from the antenna.



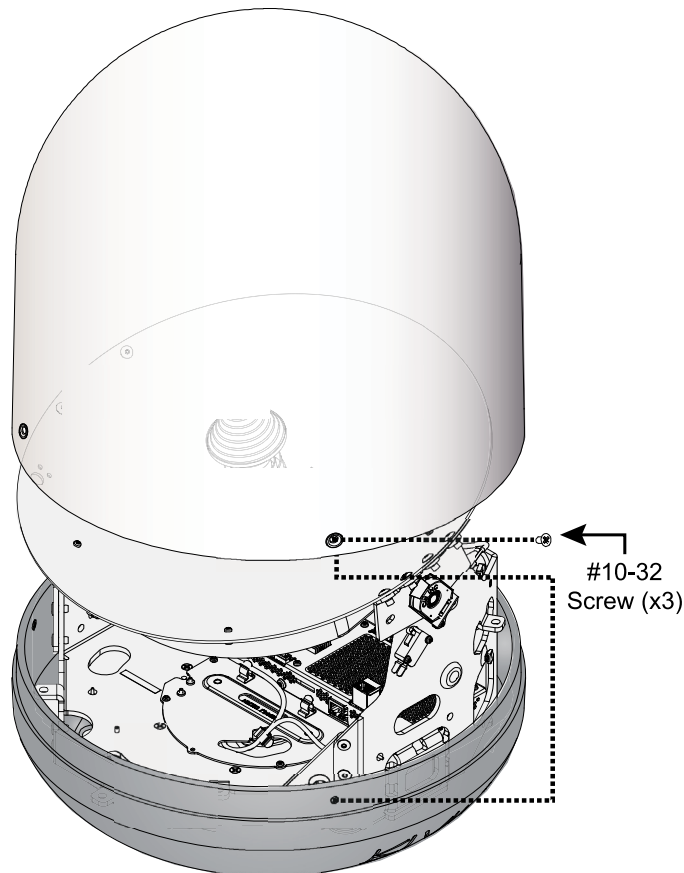
### CAUTION

To prevent injury, be sure to disconnect all power from the antenna before proceeding. Power must remain disconnected for the duration of this procedure.

2. Remove and discard the three #10-32 screws securing the radome to the baseplate (see Figure ). Carefully lift the radome straight up until clear of the antenna assembly and set it aside in a safe place.

*NOTE: If you keep the radome topside, secure it with a lanyard to prevent it from falling overboard. Also, do not place the radome on a hot steel deck – the heat may warp the radome.*

Figure 3: Radome Screws



## Replace the Main Board

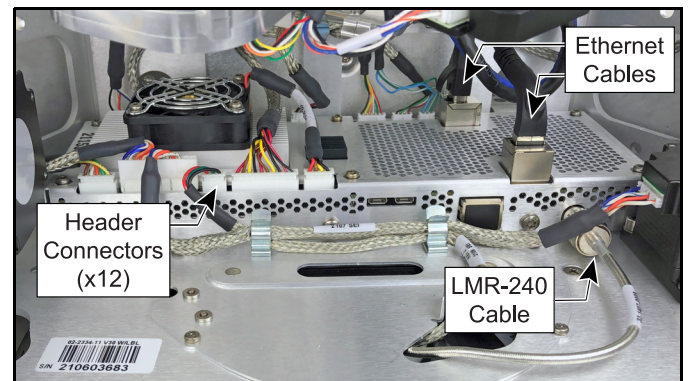
Follow the steps below to replace the main board.

### IMPORTANT!

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

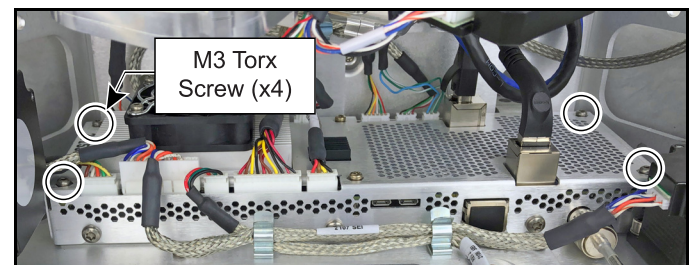
1. Put on an ESD wrist strap and connect it to any bare metal portion of the antenna frame.
2. Disconnect the two Ethernet cables from the main board (see Figure 4).

Figure 4: Main Board Connectors



3. Disconnect the LMR-240 cable from the main board (see Figure 4).
4. Using the supplied connector extraction tool, disconnect the white header connectors from the main board, with the exception of the main board fan cable's connector (see Figure 4 and [Figure 2 on page 1](#)). **Be sure to disconnect by grasping the connector body; do not pull on the wires.**
5. Using a T10 Torx screwdriver, remove and discard the four M3 Torx screws securing the main board to the antenna frame.

Figure 5: Main Board Screws



6. Carefully remove the main board.

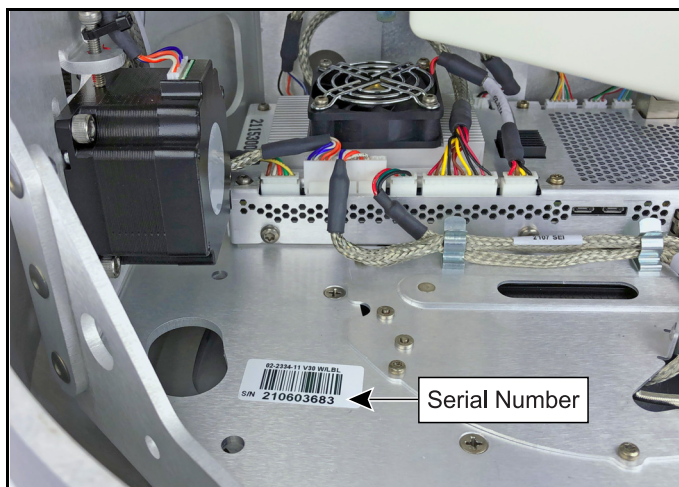
- Position the replacement main board over the four mounting holes in the antenna frame. Take care to lay the main board flat against the frame, and not to pinch, flatten, or damage any of the loose wires or connectors.
- Secure the main board to the frame with four new M3 Torx screws (T10) (supplied in kit) (see [Figure 5 on page 2](#)). Tighten the screws to 9 in-lbs of torque.
- Carefully reconnect the header connectors to the main board (see [Figure 4 on page 2](#)). Be sure to connect the cables in their proper locations, as shown in [Figure 2 on page 1](#).
- Reconnect the two Ethernet cables to the main board (see [Figure 4 on page 2](#)). Be sure to connect the cables in their proper locations, as shown in [Figure 2 on page 1](#).
- Apply some silicone grease inside the connector of the LMR-240 cable and connect it to the main board. Hand-tighten until the connector is secure (see [Figure 4 on page 2](#)).

## Record the Serial Number

Follow the steps below to record the serial number and replace the radome.

- Find the antenna serial number label on the frame. Write down this 9-digit number for later use.

Figure 6: Antenna Serial Number

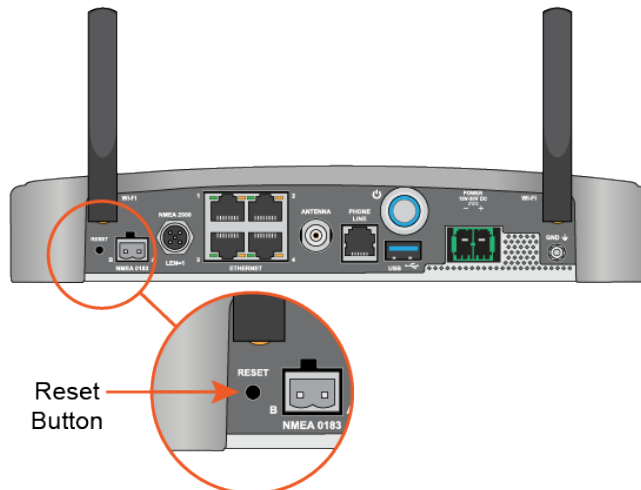


- Inspect the inside of the antenna to make sure you have not left any tools inside.
- Reinstall the radome onto the antenna and secure it with three new #10-32 screws (supplied in kit). Tighten the screws to 5 in-lbs of torque.
- Reconnect power to the VSAT-Hub.

## Access the Web Interface

- Momentarily press the **Reset** button on the rear panel of the VSAT-Hub. The “VSAT-Hub” light should be lit orange.

Figure 7: VSAT-Hub Reset Button

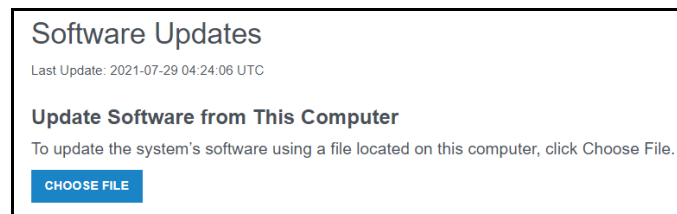


- Connect your laptop directly to an available Ethernet port on the VSAT-Hub.
- Start a web browser and enter <https://kvhonboard.com>. (If the login page does not appear, try <http://192.168.5.1>, which is the default IP address of the VSAT-Hub.)
- At the login page, enter the following credentials:
  - Username: **tech**
  - Password: **<VSAT-Hub serial number>**

## Update the System Software

At the Software Updates page of the web interface, upload the latest system software that you downloaded from the KVH Partner Portal.

Figure 8: Software Update Page



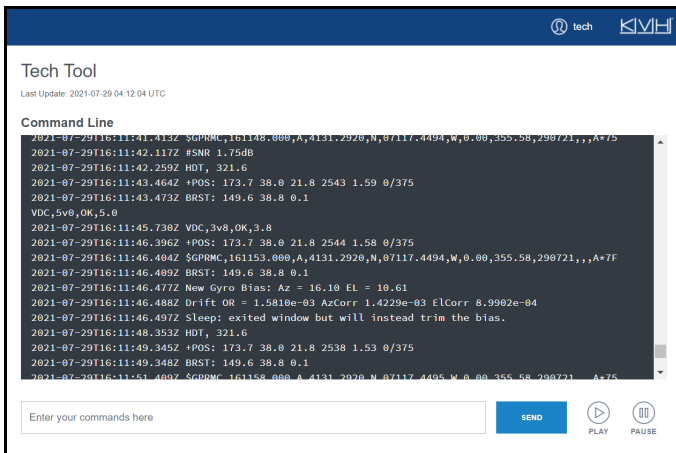
**NOTE:** For details on updating the software, refer to the system's Help.

## Configure the New Main Board

Follow these steps to enter the antenna serial number in the main board, calibrate its accelerometers, and recalibrate the gyros.

1. At the Tech Tool page of the web interface, enter each antenna command below. To enter a command, type the command in the text box then click **Send** (see Figure 9).

Figure 9: Tech Tool Page



- **HALT**
- **DEBUGON**
- **EEUNLOCK**
- **=SERNUM,<9-digit antenna serial number you noted earlier>** [Example: =SERNUM,210801234]
- **SETCALUP,<offset value for elevation limit switch, in degrees>** [Example: SETCALUP,1.3]
- **SETCALSKLS,<offset value for skew limit switch, in degrees>** [Example: SETCALSKLS,1.3]
- **=CALACCELOFFSET**

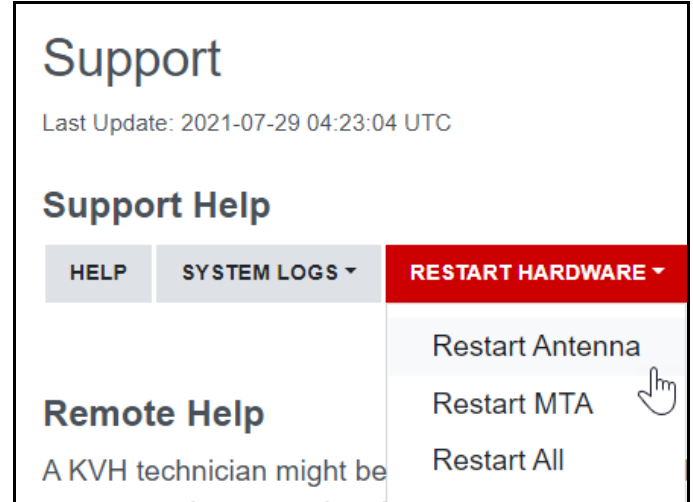
Verify that the calibrations for x, y, and z accelerometers all pass.

- **=CALNEWGYRO**

Verify that the gyro calibration passes.

2. At the Support page of the web interface, select **Restart Hardware > Restart Antenna**.

Figure 10: Restart Antenna from Support Page



## Verify Normal Operation

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

The replacement procedure is complete!