



# Assembly Guide - MeshRadio-Rugged

## Assembling the RAK Wireless Modules

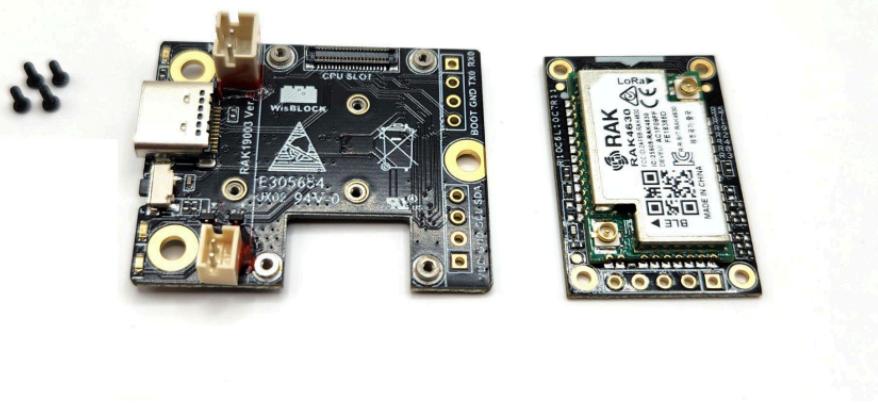
You will need the following parts and tools (unless selected to be included at the time of order):

- 1x [RAK19003](#) (WisBlock Mini Base Board)
- 1x [RAK4631](#) (Arduino Variant)
  - Note: There are only two variants of the RAK4631, a High Frequency and a Low Frequency module.
- 1x [RAK12500](#) (GNSS GPS Location Module u-blox ZOE-M8Q)
- 5x M1.2 x 3 screws (Included with RAK19003)
- 1x Small Phillips head screwdriver



## Mount RAK4631 to Base Board

1. Locate out the RAK19003, RAK4631, and 4x M1.2 x 3 screws.



2. Install RAK4631 onto the 19003 Base Board.
  - a. More information can be found in the Rak Wireless documentation: [Attaching a WisConnector](#)
3. Secure the 4631 module with 4x M1.2 x 3 screws.



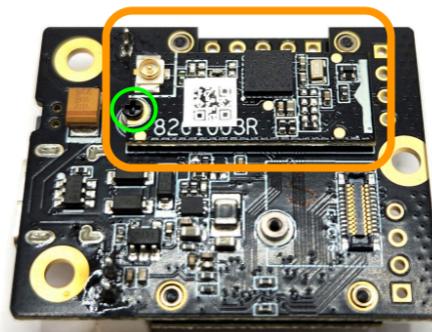


## Mount GPS Module to Base Board

1. Locate the RAK12500 (GNSS GPS Location Module u-blox ZOE-M8Q) and 1x M1.2 x 3 screw.



2. Install GPS Module onto Base Board.
3. Secure GPS Module with 1x M1.2 x 3 screw.



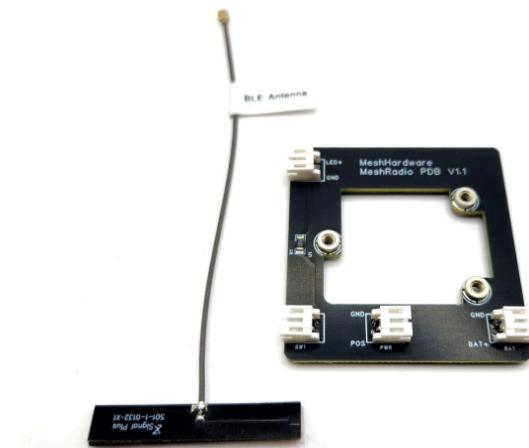
# Installing RAK Modules on Power Distribution Board (PDB)

You will need the following parts and tools:

- 1x Power Distribution Board (PDB)
  - 1x Bluetooth antenna (from RAK4631 package)
  - 3x M2.5 x 5 screws (from RAK19003 package)
  - 1x JST-PH 2 Position wire assembly
  - 2x pieces of double sided adhesive foam tape

## Install Bluetooth Antenna

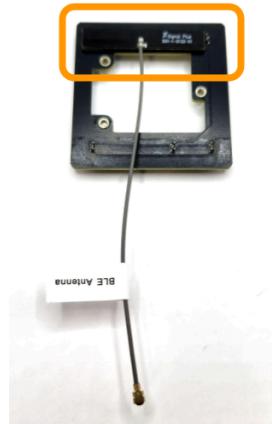
1. Locate the Power distribution Board (PDB) and Bluetooth Antenna.



2. Remove adhesive backing from the antenna.

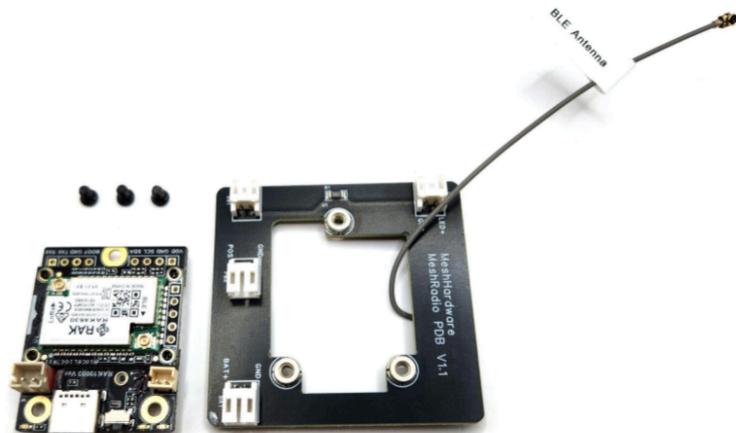


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3. Affix BlueTooth antenna to PDB in area shown.



## Mount Base Board Assembly to PDB

1. Locate 3x M2.5 x 5 screws, the PDB and Base Board assembly





2. Secure the baseboard to PDB using the 3x M2.5 x 5 screws.



3. Install the Bluetooth IPEX connector into the “BLE” port.





## Install JST-PH 2 Position Wire Assembly

1. Locate the JST-PH 2 Position wire assembly.



2. Attach one end of the wire assembly into the PWR receptacle and the other end into the RAK19003.



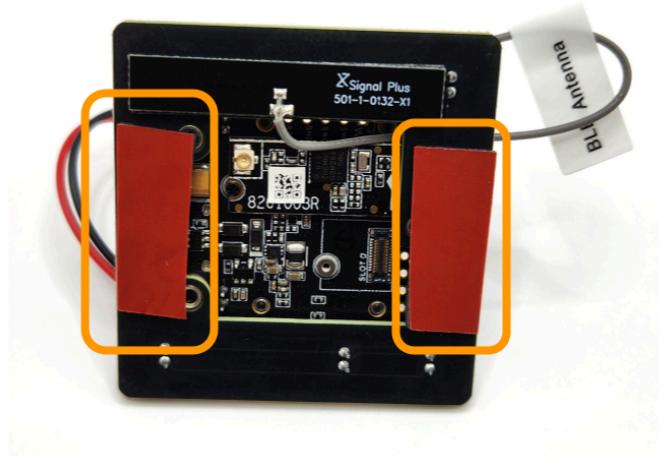


## Attach Double Sided Foam Tape to PDB

1. Locate the 2x strips of double sided adhesive foam tape.



2. Remove 1x side of the adhesive backing and affix to the back of the PDB as shown.



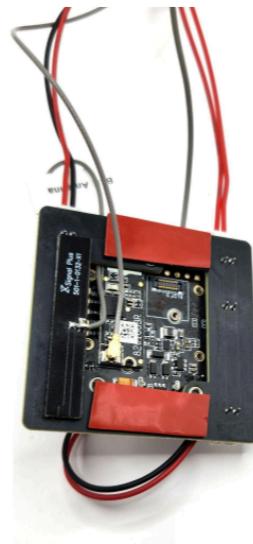


## Attach PDB Assembly to Case Head

1. Attach RED pair of wires to “SW1” receptacle.
2. Attach BLACK/RED wire pair to “LED” receptacle.
3. Attach LoRa antenna IPEX connector to LoRa port.



4. Flip PDB over and install GPS IPEX connector to GPS module.



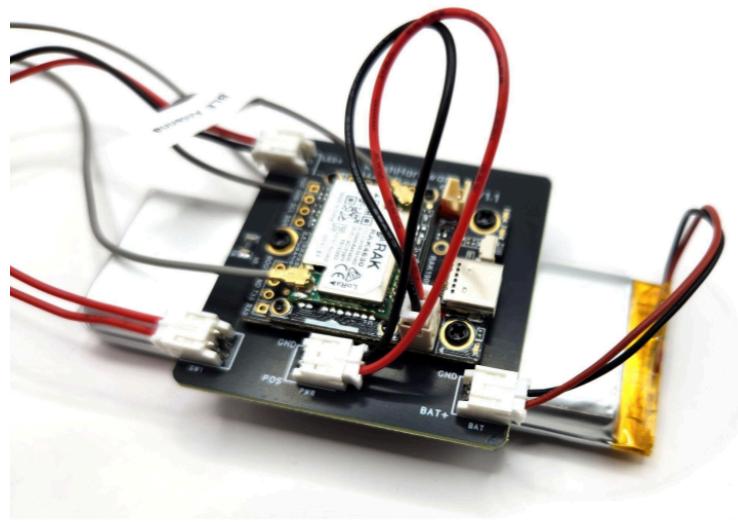


## Attach Battery to PDB

1. Remove the backing from the strips of double sided foam tape.
2. Attach battery to PDB in a centered orientation.



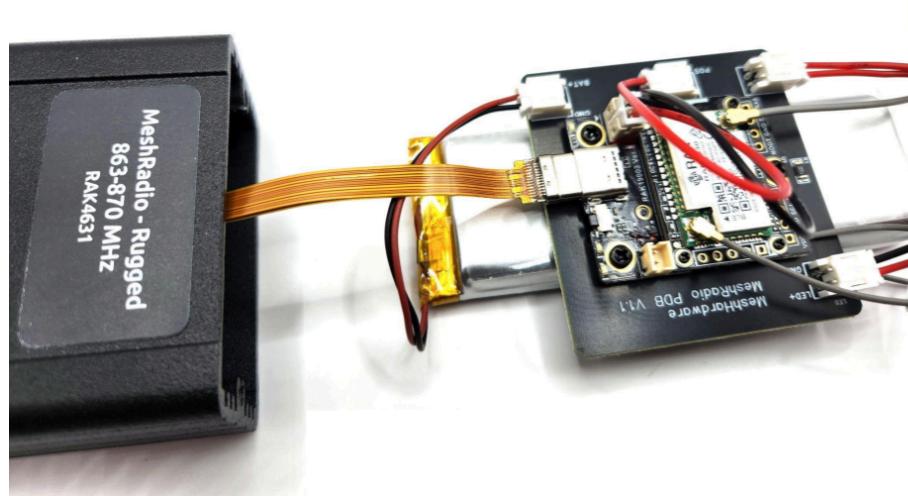
3. Plug Power connector into "BAT" receptacle.



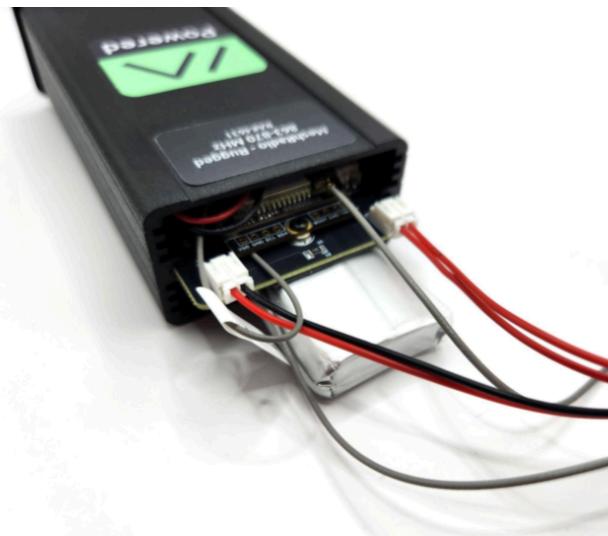


## Install PDB Inside Case

1. Plug USB-C connector into receptacle on Base Board.



2. Insert electronics assembly into case using the middle rail segment. The PDB will be loose on other rail levels.





3. Install antenna/switch head assembly onto the case and secure with screws.

