6. Assemble Duet Controller

Assembling the Duet 3D Controller with Fans and Mounts.

Written By: Robert

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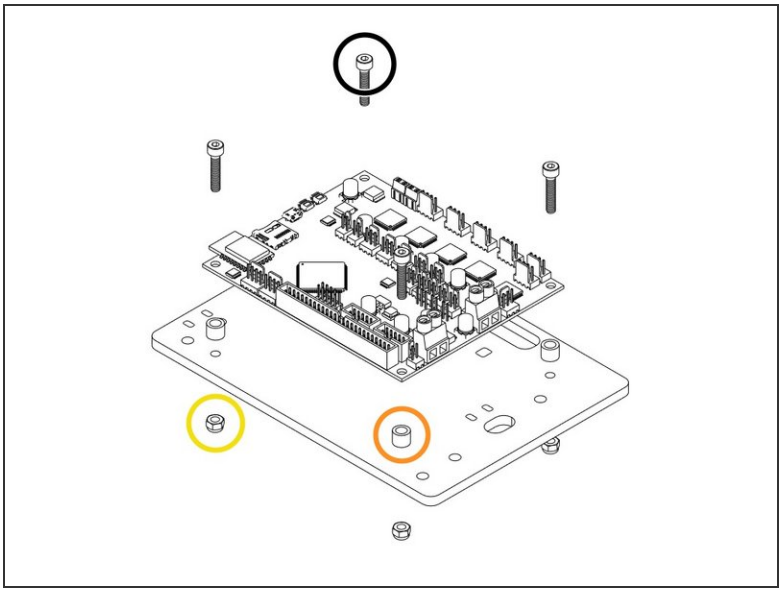
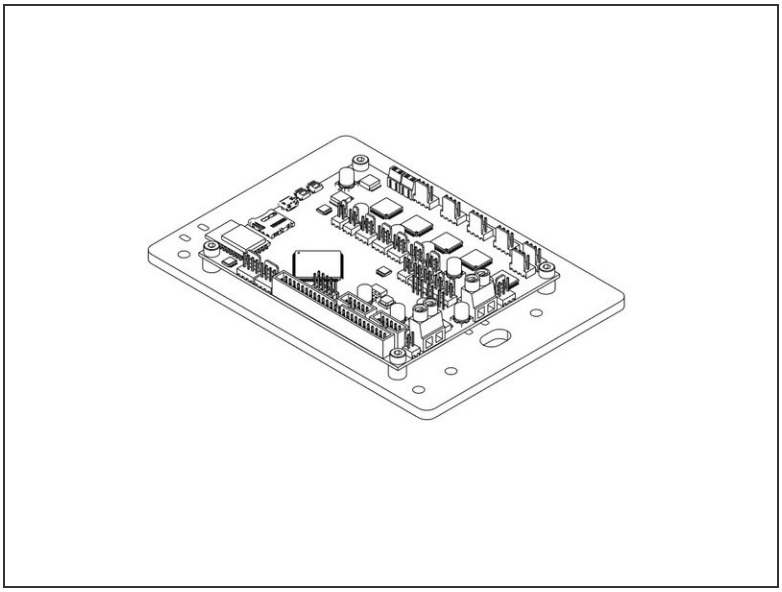
Step 1 — Fixing the Cable Ties into position

⚠ Making sure the board is orientated in the correct way as displayed in the image.

- The Large Cable Tie highlighted in Orange is for the 4 Stepper Motor Cables and the Limit Switches.
- The Small Cable Tie highlighted in Red is for the power cable.
- The Small Cable Tie highlighted in Yellow is only needed if you have the Ethernet Version, and is to secure the Ethernet Cable.

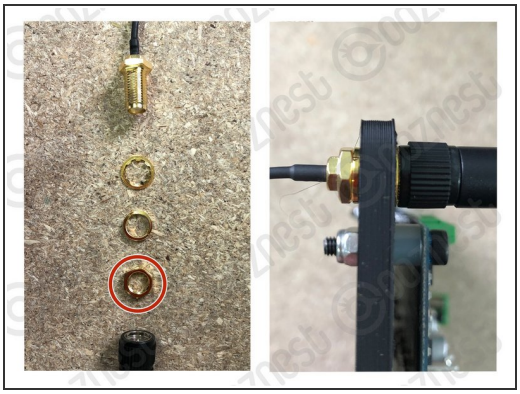
Step 2 — Mounting the Controller to the Duet Mount

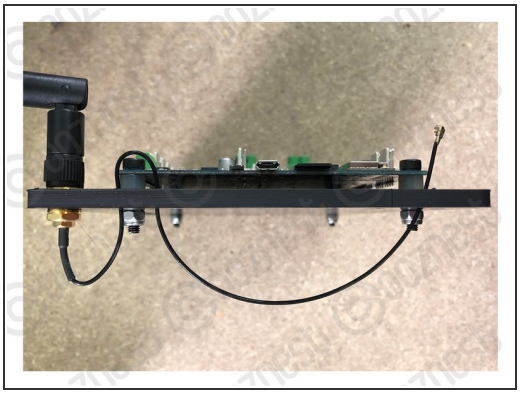


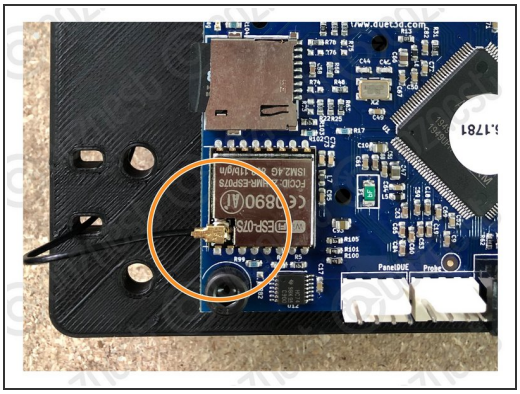


- Insert a M4-Cap-Head-Bolt-20mm through each hole on all 4 corners on the Duet 3D Controller.
  - Onto each bolt slide a 1/4"-Nylon-Spacer.
  - Now it is time to join the Duet to the Duet Mount. Insert the bolts into the holes on the Duet Mount and secure using 4 x M4-Nyloc-Nuts.

Step 3 — Install Antenna



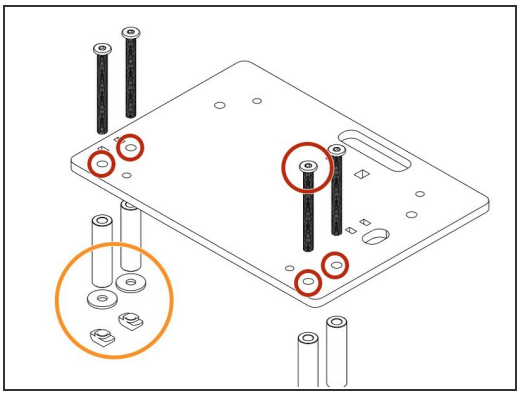
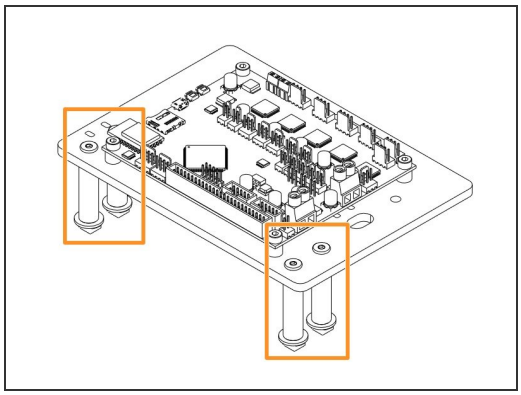
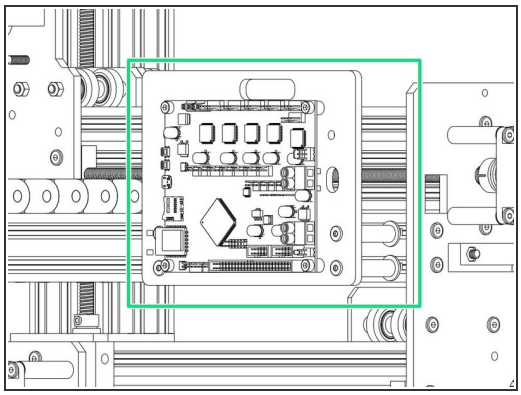




If you have received the Duet Wifi External Antenna version please follow this Step, if not proceed to Step 4.

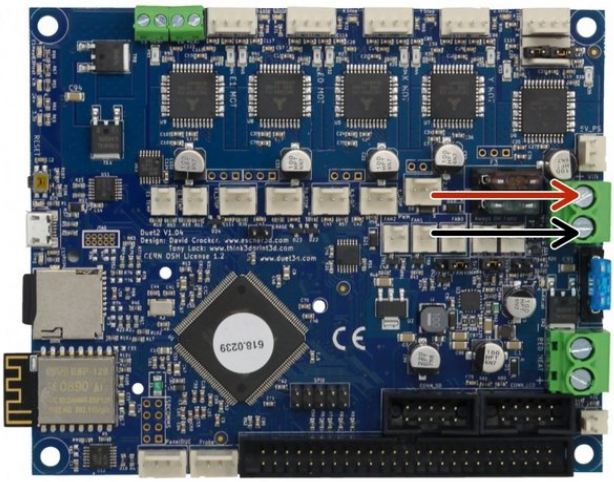
- Unscrew the antenna wire from the antenna arm. There will then be 4 parts, antenna wire, star washer, spring washer, hex nut, antenna arm.
  - Discard the hex nut as it is not needed for the assembly.
  - Insert the Antenna wire from the back of the Duet Mount with the spring washer. Once pushed through add the star washer and screw on the antenna arm.
  - Follow image 2 to route your cable through the holes on the Duet Mount.
  - Push the antenna fitting onto the Wifi module until it clicks into place.

Step 4 — Mounting the Controller to the Machine

- Insert 4 x M5-Low-Profile-50mm bolts through the holes on the Duet-Mount indicated in red.
  - Place an Aluminium-Spacer-40mm Spacers over each bolt followed by a Slot-Washer and finally an M5-Drop-In-Tee-Nut.
  - Line the assemblage up with the X-Gantry 2040 Extrusion on the right hand side of the machine (if looking from the back) and fix into place by tightening the M5-Low-Profile-50mm bolts until the M5-Drop-In-Tee-Nuts engage

Step 5 — Connecting the PSU Input Cable



⚠ The Mains Power should remain off during all wiring of the Duet Controller.

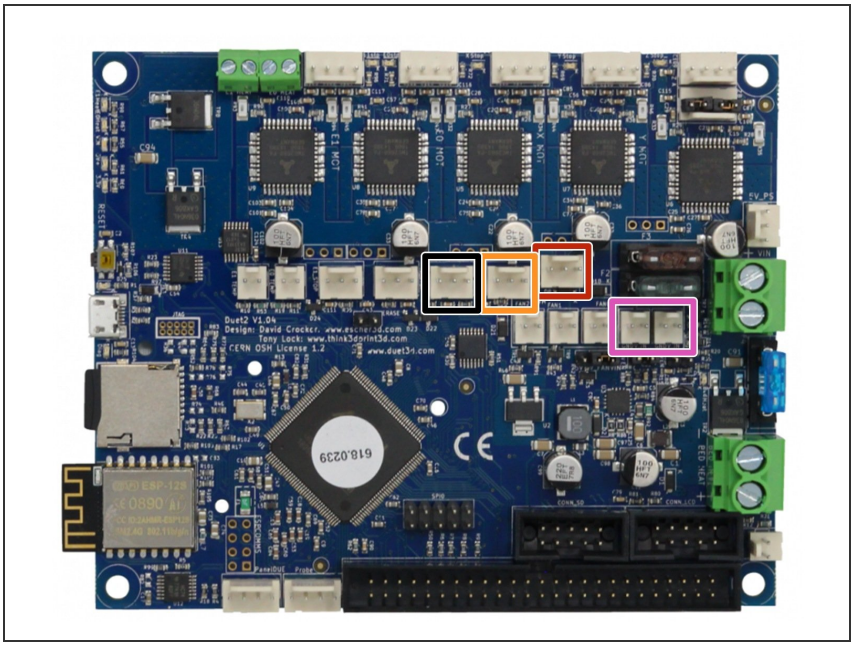
- PSU Cable from Power Supply - Connect Red Positive Wire into the Top Screw Terminal and Black into Bottom Screw Terminal.

Step 6 — Wire Identifications

If the wires in your kit have white printed tags, please ignore this step. Each wire, at the connector end has a coloured clip with a number. This colour and number identifies this wire. Please see key below.

- (0)(Black) X-Axis Limit Switch
- (1)(Brown) Y-Axis Limit Switch
- (2)(Red) Z-Axis Limit Switch
- (3)(Orange) X-Axis Stepper Motor Wire
- (4)(Yellow) Left Y-Axis Stepper Motor Wire
- (5)(Green) Right Y-Axis Stepper Motor Wire
- (6)(Light Blue) Z-Axis Stepper Motor Wire

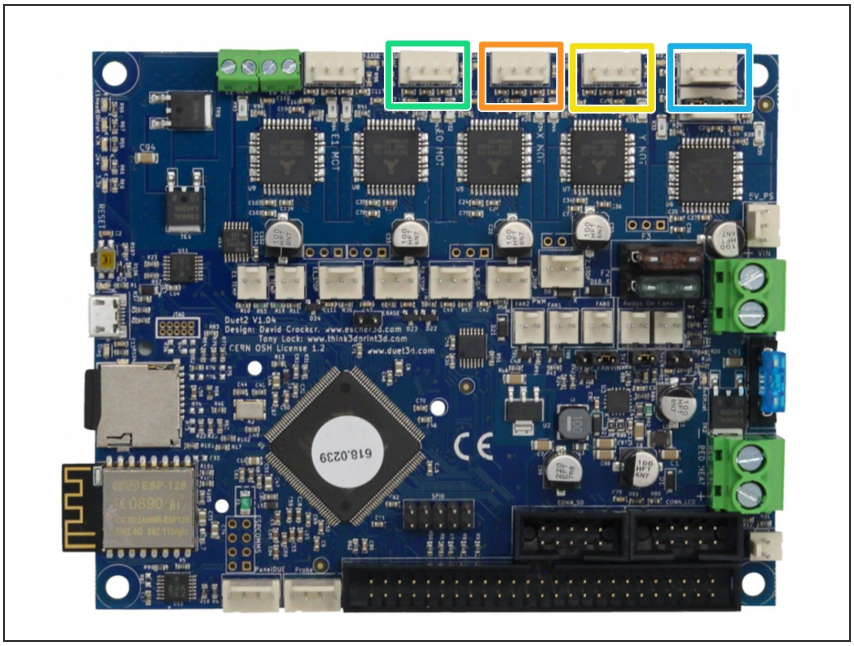
Step 7 — Limit Switches & Fans



ⓘ The connectors for the Duet controller are keyed, so there is only one way which they can plug in.

- (0)(Black) X-Axis Limit Switch
- (1)(Brown) Y-Axis Limit Switch
- (2)(Red) Z-Axis Limit Switch
- Fans connected to either of the Always on Fan Terminals.

Step 8 — Stepper Motor Connectors



ⓘ The connectors for the Duet controller are keyed, so there is only one way which they can plug in.

- (3)(Orange) X-Axis Stepper Motor Wire.
- (4)(Yellow) Left Y-Axis Stepper Motor Wire.
- (5)(Green) Right Y-Axis Stepper Motor Wire.
- (6)(Light Blue) Z-Axis Stepper Motor Wire.

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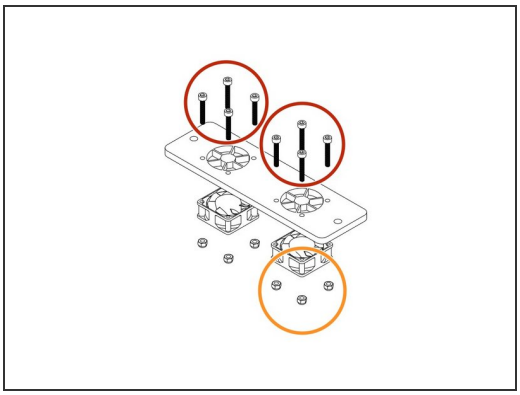
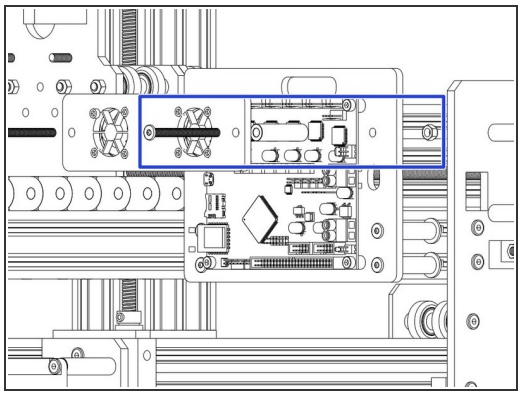
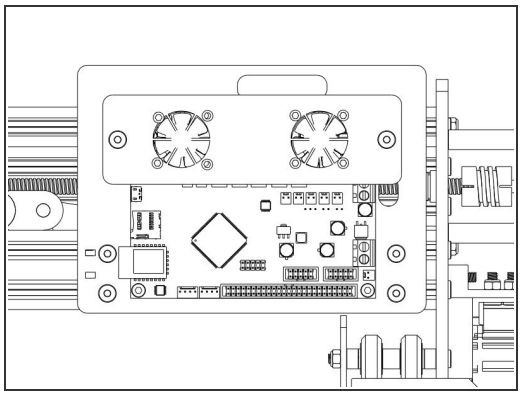
Step 9 — Mounting the Fans to the Board

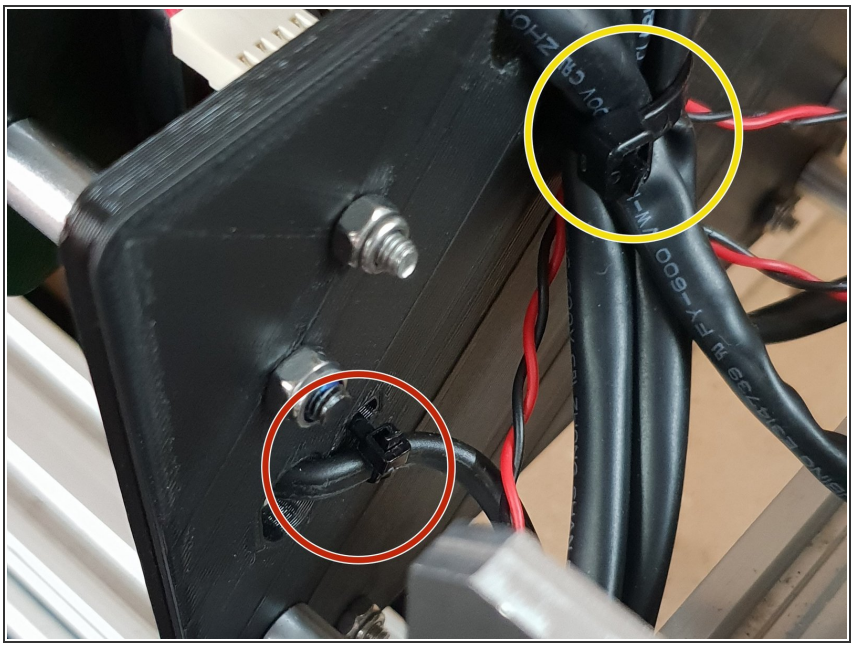




- Use 8 x M3-Cap-Head-Bolt-20mms & 8 x M3-Nyloc-Nuts secure the fans highlighted in Yellow onto the Mount with the Fan label facing outward.
- Thread 2 x M5-Low-Profile-60mm Bolts through the fan mount. Then slide the a Aluminium-Spacer-40mm highlighted in Blue over each bolt.
  - Now attach to the Main Board mount using 2 x M5-Nyloc-Nuts.

    ⚠ Connect the fans to 'Always On' Fan connection of your Duet Controller before tightening the M5 Nyloc Nuts.

  ⓘ It is important that Air is blowing towards the controller when the fans are on.

Step 10 — Tidying your Wires



- Using the already inserted cable ties fix the wires into place securely to prevent any unnecessary movement and to keep the machine looking neat!
  - ⓘ If you have the Ethernet version also secure that.
- PSU Cable from Power Supply secured.
- Stepper Motor Wires & Limit Switches secured.

Thanks for following the guide. Any issues, please contact us!