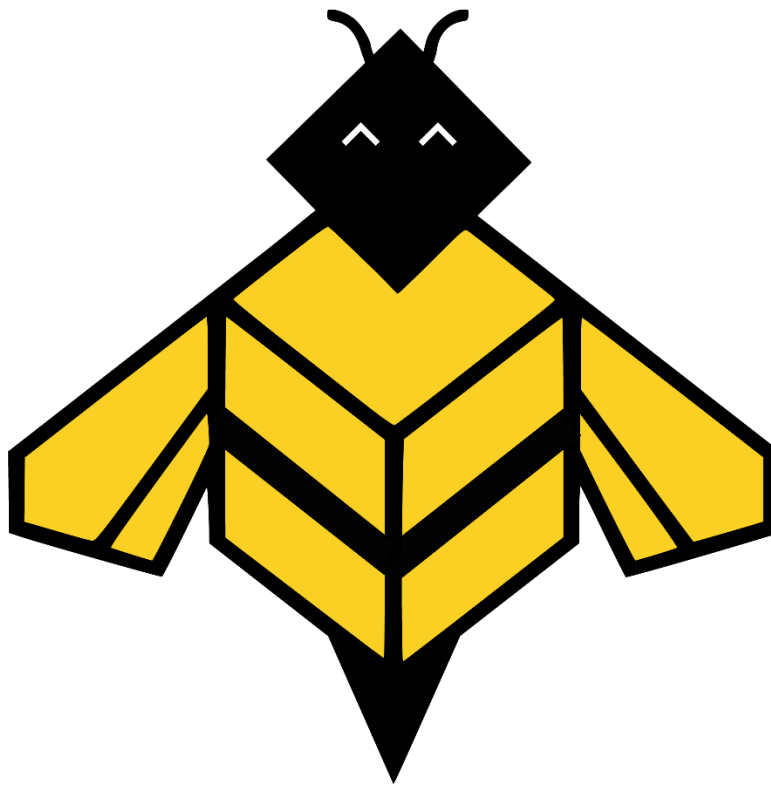**dicey tech**

User Manual

QBee
3D Printer

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Warning

Please read this manual before you start using your QBee

Hazards and Warnings

Your QBee 3D printer has motorised and heated parts. Always be aware of possible hazards when the print is operational.

Electric Shock Hazard

Do not open the electronics case when the printer is powered on. Before removing the electronics case cover, always power down and unplug the printer.

Burn Hazard

Always check the temperature (LCD screen or Web interface) before attempting to touch any heated parts. Avoid touching recently extruded plastic as it can stick to your skin and cause burns.

Fire Hazard

Never place flammable materials or liquids on or near the printer when it is powered on or operational. Liquid acetone, alcohol, or other chemicals may release vapors that are extremely flammable.

Pinch Hazard

While operating the printer, take care to never put fingers near any moving parts including belts, pulleys, or gears. Tie back long hair or clothing that can get caught in the moving parts of the printer.

Cut Hazards

Take care when handling the printer bed as the edges of the metal are sharp.

Age Warning

For users under the age of 18, adult supervision is recommended. Beware of choking hazards around small children.

Modifications and Repairs Warning

At Dicey Tech Ltd. we respect your freedom to modify your QBee desktop 3D printer. However, any modifications or attempted repairs that cause damage are not covered under the Warranty.

If you have any questions you can contact us via email: contact-us@3dicey.com

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Connect and Control your QBee 3D Printer

There are two options for connecting wirelessly to your QBee 3D printer: AP Mode and Wireless Network. In both options, you will use the web interface to control your printer.

Connecting in AP Mode

- Select the Macros button on your Control screen. Now on your Console screen, look for the IP address. It should be in the following format: 192.168.1.XX. To connect to the printer's web interface, you must input this IP in your browser's search bar.
- Choose AP Mode.g
- On your personal device, select the "QBEE" wi-fi network.
- Now input the IP address mentioned earlier into your preferred browser.

Congratulations! You are now connected to your QBee 3D printer! You can use the web interface to control motion, temperature, speeds, cooling, and of course upload and print models!

Web Interface Walkthrough
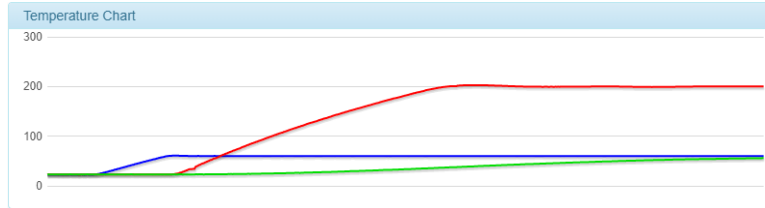
This is the web interface for your QBee 3D Printer.

1. Tool Section - where you can control temperatures for Tool 0 (left extruder, as seen from the front), Tool 1 (right extruder), and the Bed. You can also see the progress of

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temperature/time on the graph in the top middle of the page

2. <u>Main Tabs</u> – Where you can switch between controlling the machine, viewing the status and progress of your print, writing in the console, viewing and using uploaded gcode files, and many more!
3. <u>Jog Controls</u> – where you can move the extruder and the bed along their axis. In the top right corner, there is also the option to perform a 4-point bed levelling mesh.
4. <u>Extruder Control</u> – where you can extrude or retract specific amounts of filaments at different speeds. Please note that filament can only be extruded if it's at its melting temperature (which varies for different materials).
5. <u>Macros</u> – where you can select predefined features to disable stepper motors, cool down the tools, put the printer in AP Mode, and many more!

Let's quickly learn the ropes!

Select "Home All" in the Machine Control tab. This will 'home' each axis and bring the extruder carriage back to its origin, which serves as the main point of reference.

Hitting the +/- buttons for X and Y axis will increase/decrease the distance of the carriage from each axis' origin. The same applies for the Z axis: '+' will increase the distance of the bed from the nozzle, while '-' will decrease it. ATTENTION: Please make sure NOT to press a "Z-" button when the bed is close to the nozzle, as a crash might cause damage to your 3D printer!

Why not give it a go at moving the axes? First, make sure you clear the bed away from the nozzles. Lower it using the "Z+100" button, and then jog the +/- controls to move the rest of the axes.

Connecting via your wireless network

You can choose to stay connected to your printer through its own AP, however this will prevent your device from using any other wi-fi network concurrently. Alternatively, you can connect your QBee 3D printer to your local network and then access the web interface through your local wi-fi rather than through the printer's AP. You can do this by:

- On your Settings tab > System Editor > Config.g (fig.1)
- In Config.g file, scroll all the way down to the "Network" section. (fig.2) The only command we care about is: <u>M587 S"YourNetwork" P"YourPassword"</u> – just input your wireless network name and password inside the apostrophes, select Save Changes, and Yes – to restart the printer.
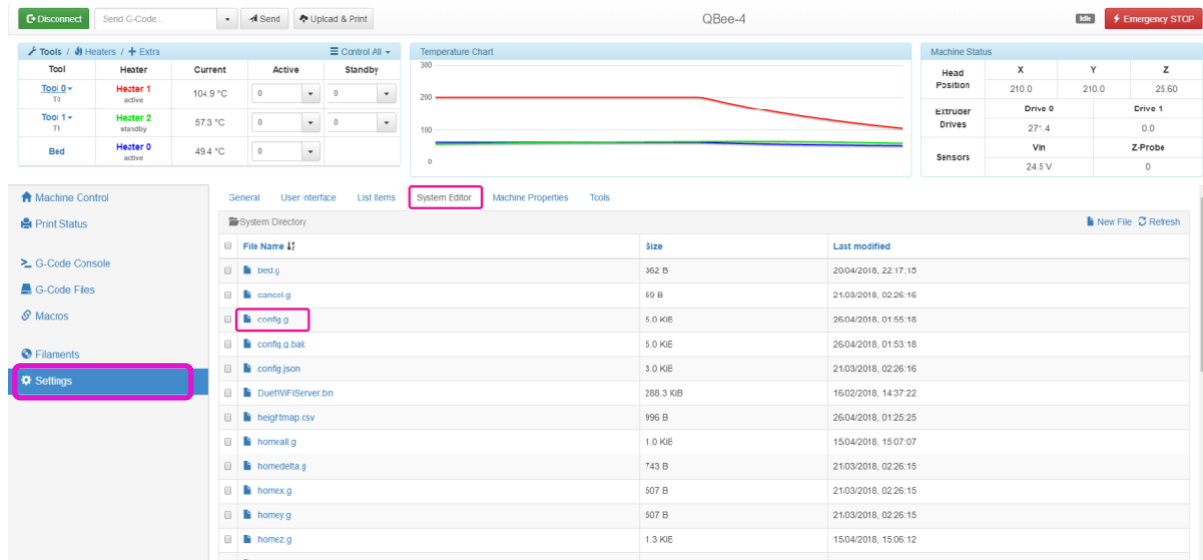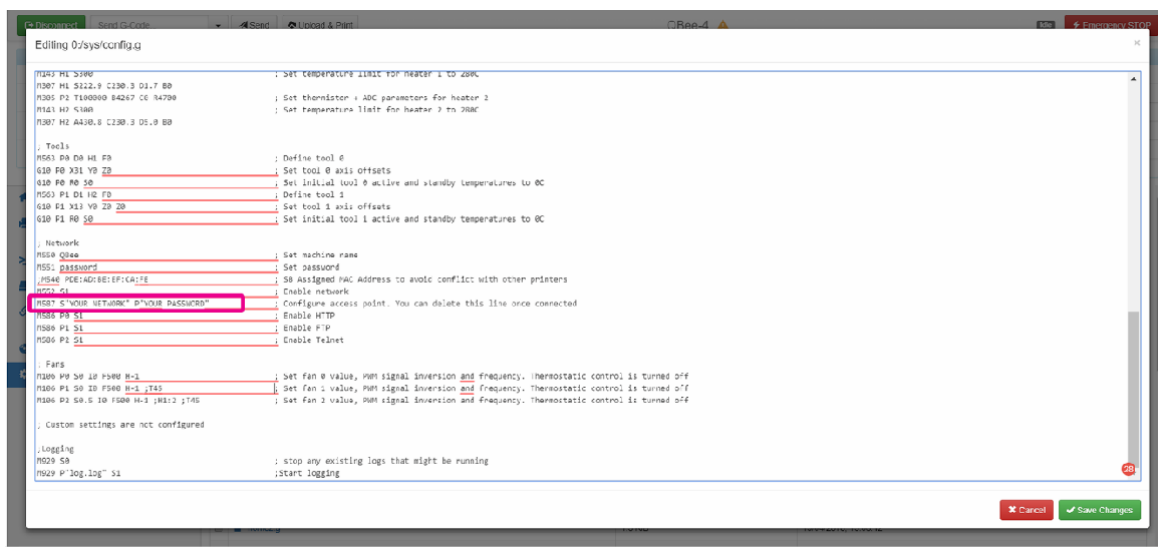
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fig.1

fig.2

Now you can connect your device to your local network and access QBee's web interface by typing the IP in your browser. You may also want to bookmark it for easy access.

Levelling the Build Platform

1. Manually bring the bed all the way down. You can do this when the printer is turned off, or by hitting the "Disable Steppers" Macro button.
2. Slightly raise the bed (e.g. push "Z-100") to prevent it from hitting the bottom on the next step.

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3. Click on the "Auto Bed Compensation" button (fig.3). This will perform 4-point mesh and based on the readings, it will compensate for unleveled parts on the bed. Ideally, we want the mesh image to be flat and green (fig.4). Turn the bed knobs on each corner, according to the readings your mesh provides, and repeat a mesh.

4. Repeat step 3 until you see a green image of your build platform.
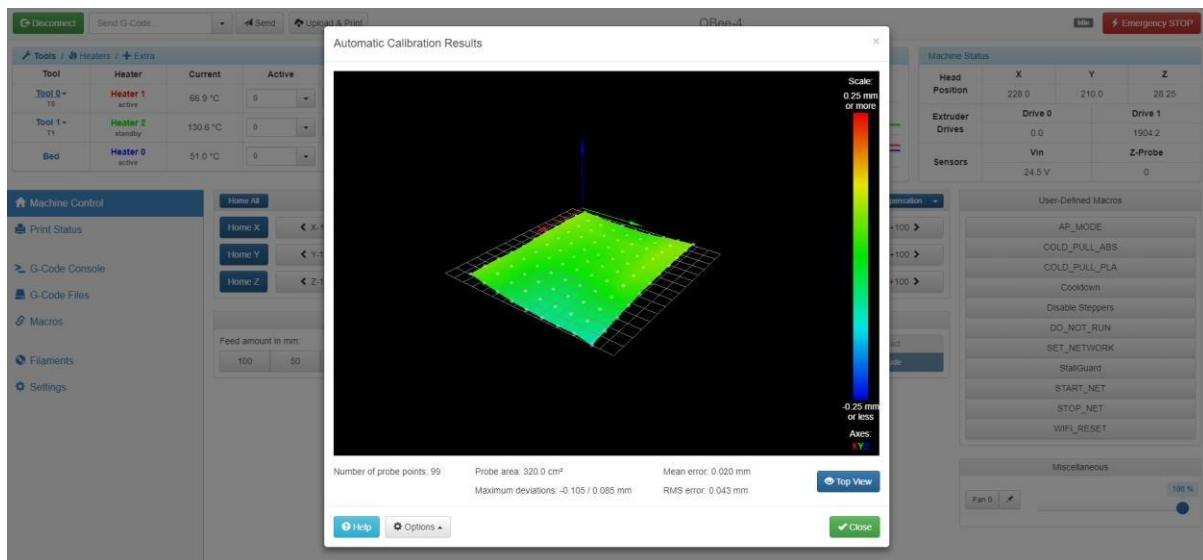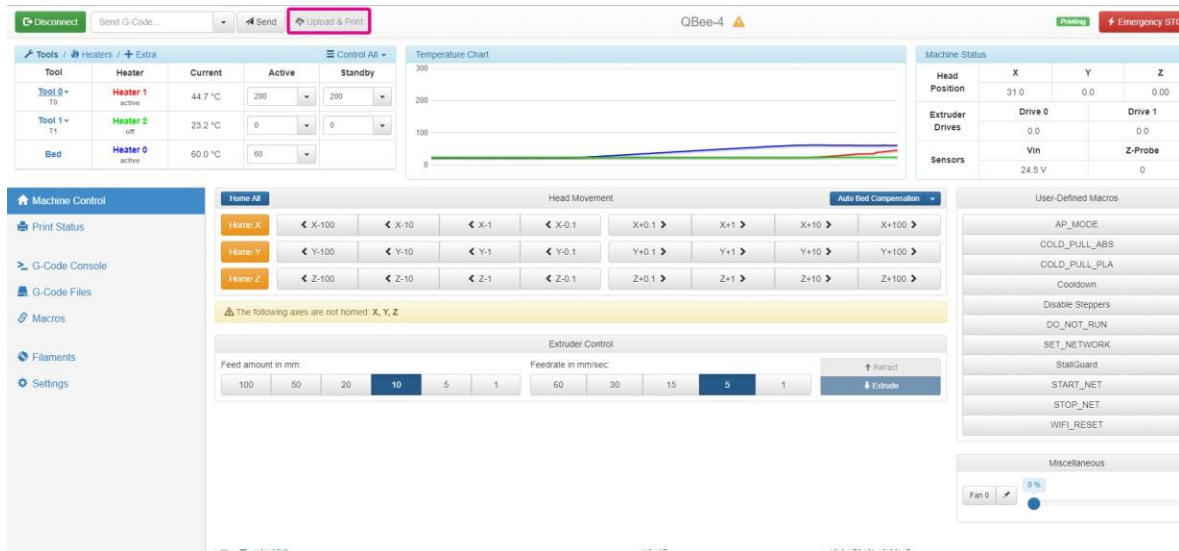

fig.3

fig.4

Printing

Once you have sliced your model and saved a **.gcode** file, simply drag and drop the file over the "Upload & Print" button on the top of your webpage. Once the file is uploaded, the printer will start heating up to the necessary temperatures and then start printing. That's it!

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Print Status

On the "Print Status" tab, while printing you will see this screen:
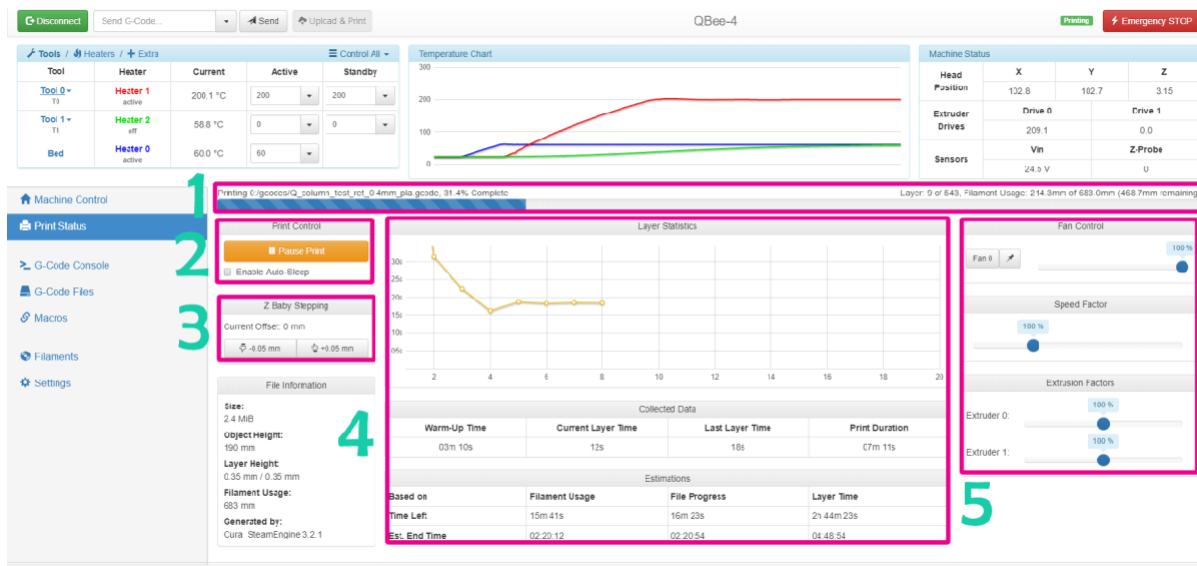
1. <u>Progress Bar</u> – shows you a graphic representation of the printing progress, as well as the current layer
2. <u>Print Control</u> – where you can pause your print, then hit resume, or cancel. It's useful to pause the print and clean up small plastic bits or strings that have the potential to interfere with the final quality of the model

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3. <u>Z Baby Stepping</u> – very useful to dynamically (i.e. while printing) raise or lower the bed during print. This is usually performed on the first layer, to ensure the distance between the nozzle and the bed is optimal for layer adhesion. **Please note:** INCREASING the baby step will LOWER the bed and DECREASING it will RAISE the bed.
4. <u>Layer Statistics</u> – where you can view stats like time spent on each layer and estimates for print completion
5. <u>Other Controls</u> – where you can dynamically (i.e. while printing) increase or decrease the power of the cooling fans, the print speed, and the flow of each extruder.

And there you have it, by now you should be well on your way to mastering your QBee 3D printer and bringing things to life!