BC TempMonitor

This device reads temperatures from a DS18B20 temperature probe and submits them back to the Brewers Chronicle website. It does not interface with existing systems in your brewery so it is a stand-alone monitoring device.

The device uses your local wireless network to connect to the Brewers Chronicle website to transmit temperature readings and target temperatures. Integrate a temperature monitoring or controlling device with your chilling system and you can then track usage against capacity.

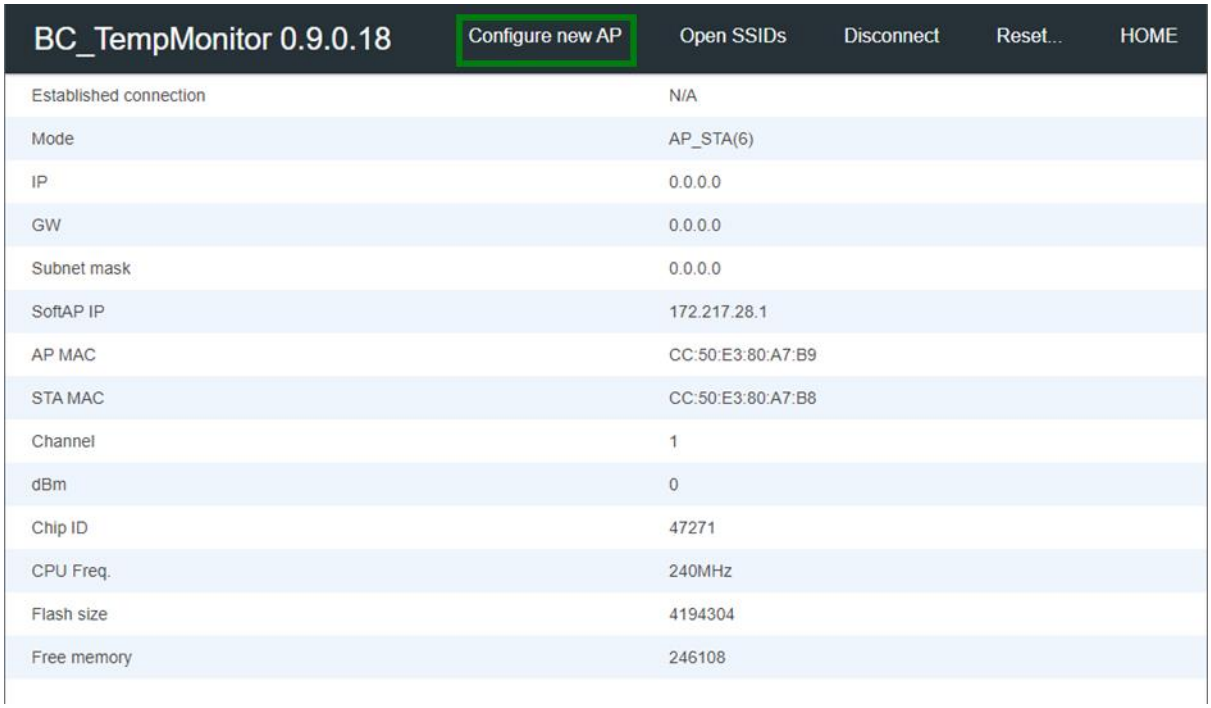
One thing to note: the local device webpage and advanced debug options only work when your computer is connected to the same Wi-Fi network as the temperature monitoring device.

Initial system configuration 3
Website interaction 6
Local device webpage 8
Advanced debug options 9
Technical specs 11

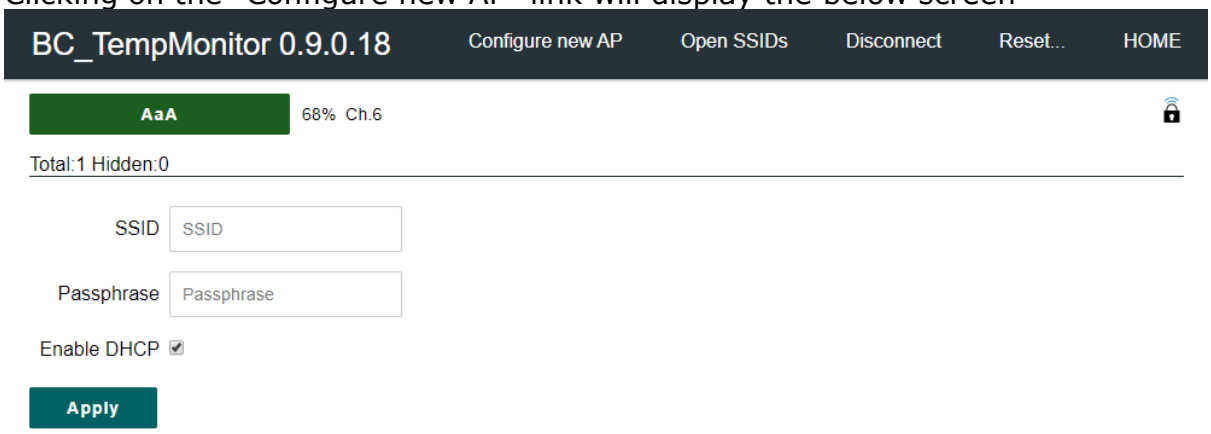
Initial system configuration

Powering up the device for the first time will create a wireless network called "BC_Device". Connecting to this network from any device will launch the website configuration portal. If a website doesn't launch automatically, please navigate to http://172.217.28.1. This should be the configuration portal address once you have connected to the Wi-Fi hotspot.

We can see below that there is no established connection.



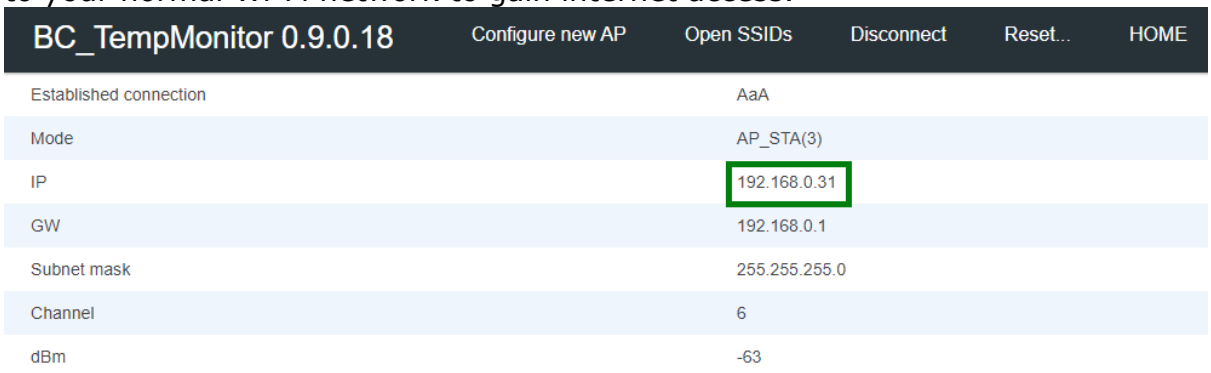
Clicking on the "Configure new AP" link will display the below screen



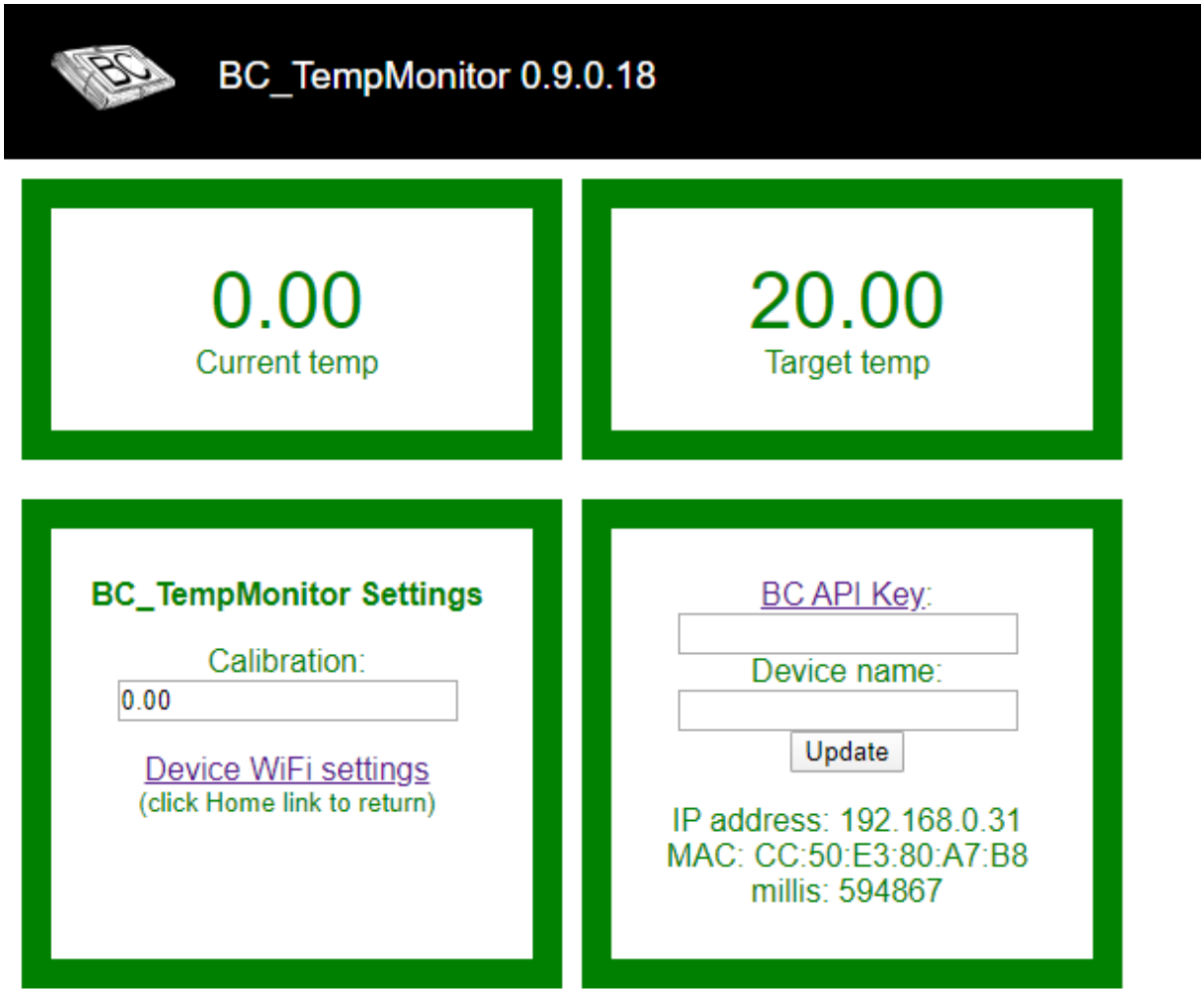
Select your desired Wi-Fi network for the device to connect to and enter the Wi-Fi password in the "Passphrase" textbox. This should reboot the device.

Once the device negotiates a Wi-Fi connection, the config screen should display the device IP address. Record this value as we will use that once you re-connect

to your normal Wi-Fi network to gain internet access.



Reconnect to the Wi-Fi network you used for the device and paste the recorded IP address into a new browser window. You should see the below screen.



Click on the "BC API Key" link on the device config screen. If you are only a member of a single brewery, the website will automatically display the details page. If you are a member of multiple breweries, then select the item you want to link the device to. Expand the "Integration and API" section and copy the "API Key" text.

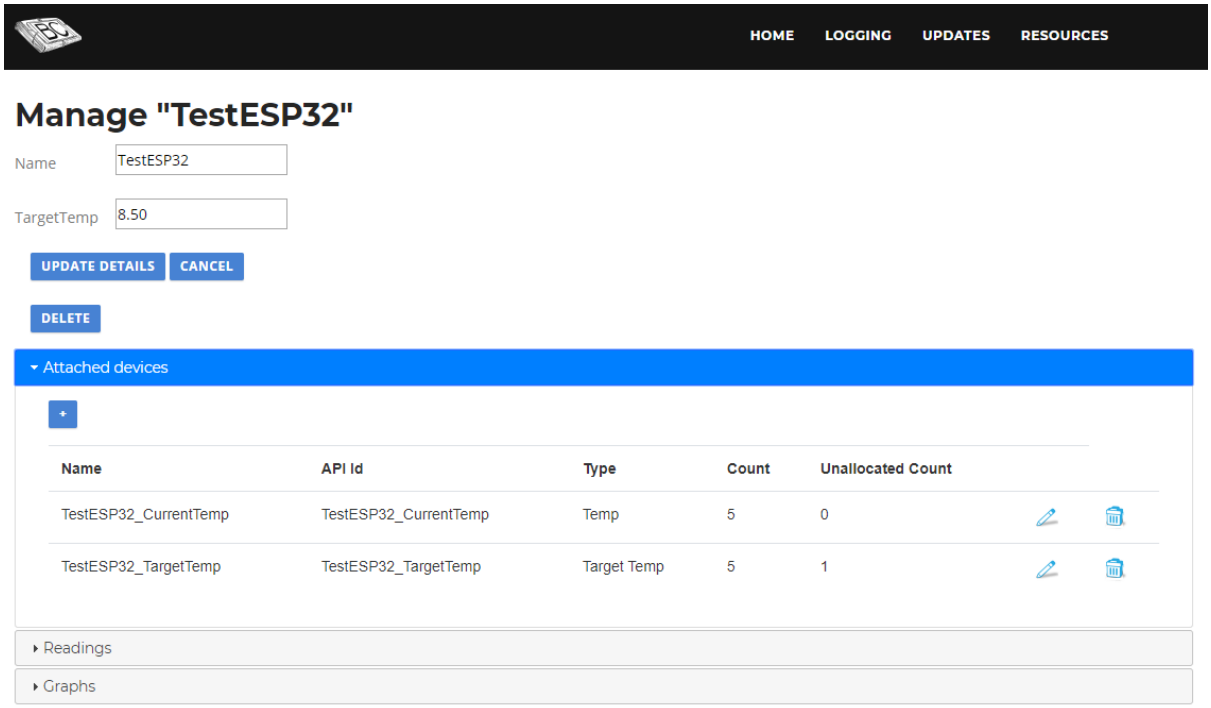
You are now ready to enter your API key from the Brewers Chronicle website and name your device. Make sure you erase the space that is present in the

textbox. I had to leave this space in to work around a problem with the web-server software I am using

Once these details are entered, the device will submit target and temperature readings to Brewers Chronicle every 15 minutes. The first readings submitted will automatically create a new brewery asset using the name you entered previously, and 2 new devices attached to that asset for recording current and target temperatures.

The details page for the asset displays the required target temperature, attached devices, prior readings, and a graph of those readings.

NB: One important item to mention is the temperature monitoring device only records the last 30 days of readings. Every night my server deletes any readings older than 30 days.



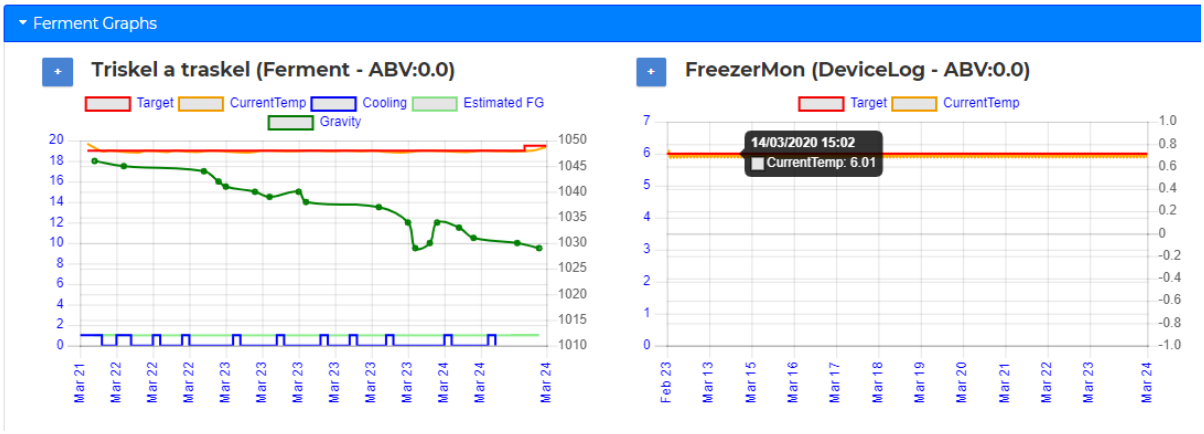
You should also receive an email informing you the device has been registered with the website.

Alerts:
Brewers Chronicle generates the following alerts for the monitoring device:

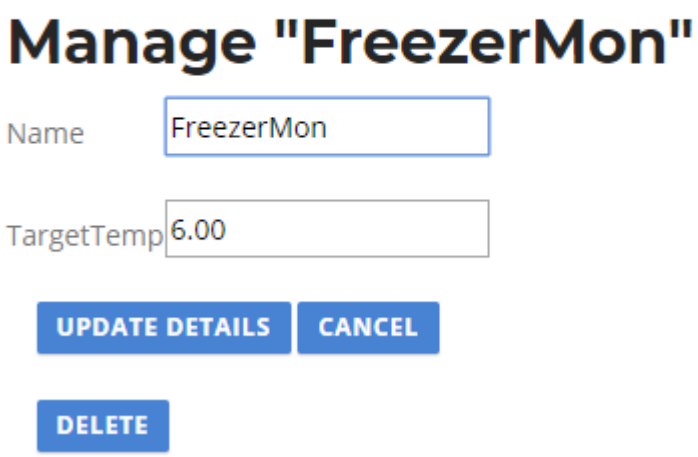
- Out of temp range => SMS, Email, and website
  - This alert is generated when the current temperature is 2 degrees outside of the target temperature on one of the submitted readings
- Not submitting readings => Email, website
  - This alert is generated when the device does not submit any readings for over 30 minutes.
- Schedule step activated => Email and website
  - If you set a new target value in the config section, this email lets you know that it has been synchronized down to the device.

Website interaction

Readings are displayed in the dashboard along with ferment readings as well.



Above you can see my “Triskel a traskel” American wheat ferment, and on the right-hand side is my keezer monitoring device. Clicking on the “FreezerMon” dashboard item will display the below screenshot. This configuration page allows you to set the target temp for the device.

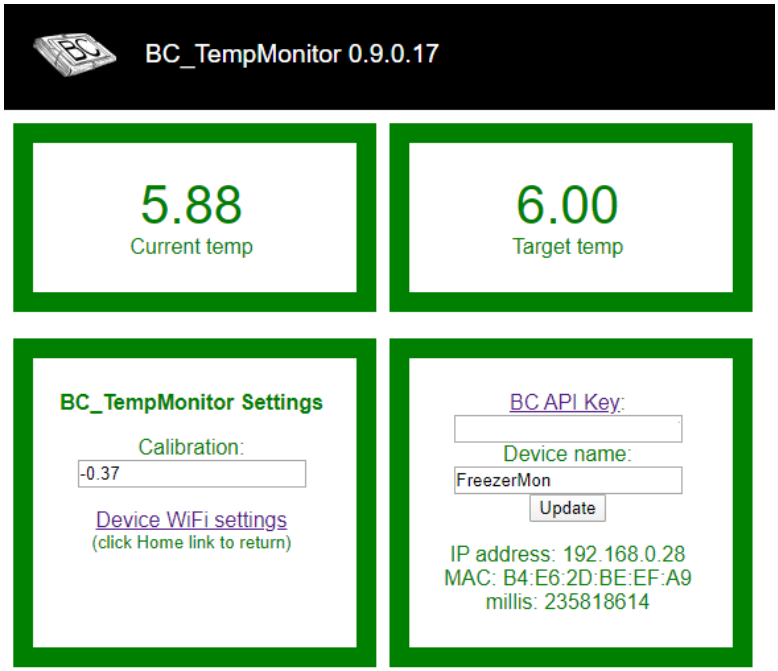


And further down the page you review prior readings and graphs.

When readings are submitted to the website, a few extra details are posted as well. You can hover over the info icon and display a tooltip with these details.

- "Local device IP": Clicking on this link will display the config page hosted on the device itself.
- Version is the current firmware version
- Wi-Fi RSSI: this is the signal strength the device currently experiences using your local Wi-Fi network. A value below -80 means that the signal strength is weak and the device may experience intermittent problems submitting temperature readings to the Brewers Chronicle website.

Local device webpage



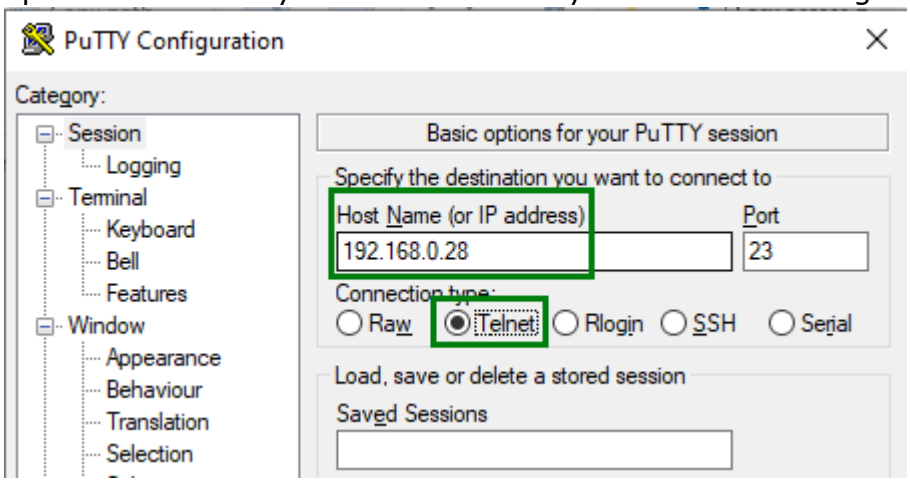
The above screenshot displays the local device webpage. This is where you can alter the BC API key and device name. Generally, you wouldn't change these values unless you wanted to shift the device between breweries or start a brand new log.

The calibration section allows you to enter a positive or negative value to alter the raw value received straight from the probe.

Clicking on the "Device Wi-Fi settings" link allows you to alter the Wi-Fi network and credentials used to connect the device to the Internet.

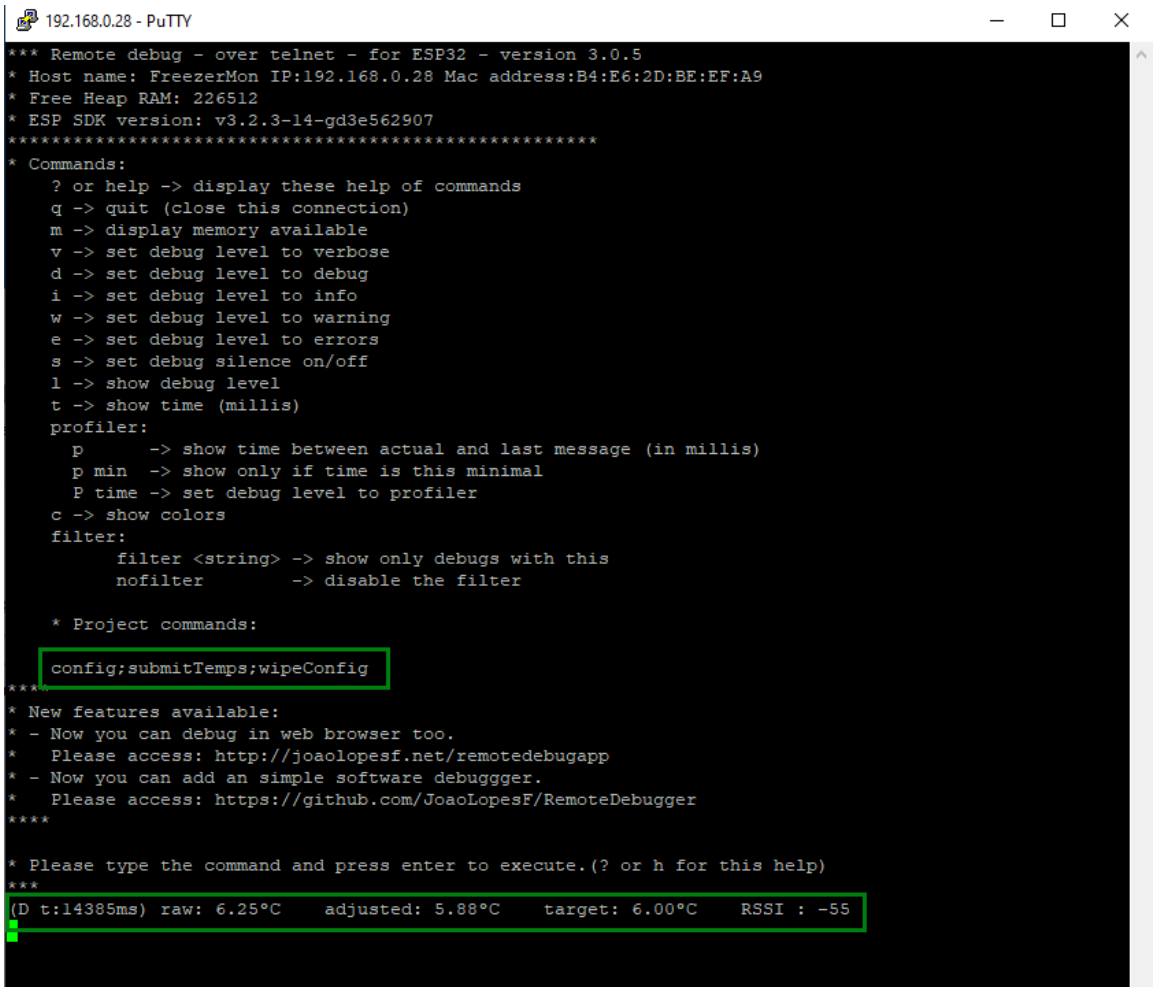
Advanced debug options

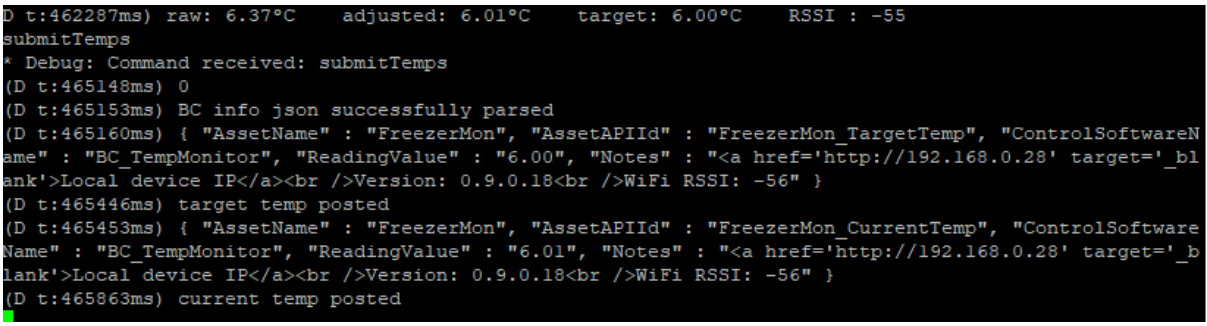
For advanced users you can telnet into the device for advanced debugging options. I use Putty for Windows as my telnet tool. Settings displayed below.



Once you connect to the device via telnet, you are presented with the below screen

The highlighted “project commands” are keywords you can type into the telnet session.



- Every 5 seconds, the line at the bottom will be displayed.
  - This display the raw temperature value from the probe,
  - optionally, the adjusted temperature value
  - current target temperature
  - RSSI: This is your Wi-Fi signal strength the device is experiencing. These values are always negative with values closer to zero being stronger.
    Anything below -80 will probably see connection problems
- Config: this will display the current settings defined in the web config
- submitTemps:
  - submits current target and current temperatures to Brewers Chronicle
  - retrieves the latest target temperature from your asset settings on the Brewers Chronicle website
  - 

- wipeConfig:
  - **Use this with extreme caution**
  - This command will reset the device back to factory settings.
    You would need to run through the Initial system configuration process again to connect to your local Wi-Fi network and set the BC API Key and device name

Technical specs

- DC Input of 7-12 volts
- Readings submitted to website every 15 minutes
- Only the last 30 days of readings are preserved on the website.