

Titan DC5 HD

Quick Start and Setup Guide



by Patrick Byars



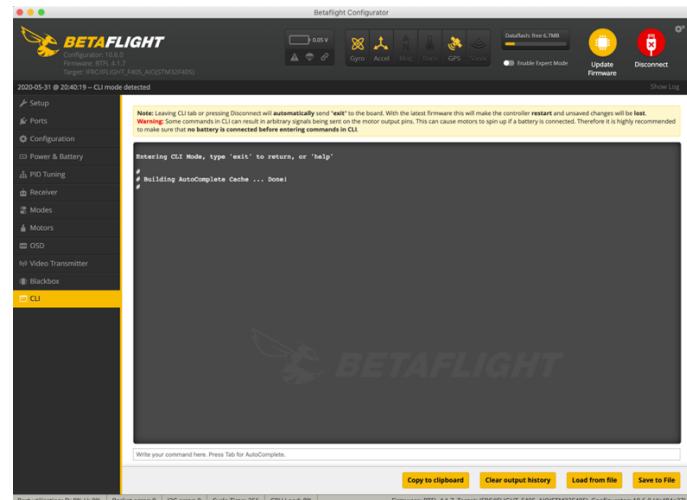
Disclaimer and Safety Guidelines

1. Store the flight battery in a dry and ventilated place away from direct sunlight to prevent the battery from overheating.
2. To avoid possible injury and damage, please fly in good weather conditions and in a safe environment.
3. Please return as soon as possible when there is low battery or strong wind conditions.
4. Please ensure that the power system or other electronic components are soldered correctly, that the power supply works normally and the various components are not damaged before flying, otherwise it may cause the equipment to burn out and other losses or damage to equipment or property.
5. Make sure to operate the aircraft in an open space. Tall steel buildings, mountains, rocks, trees, etc. may interfere with the transmitter signal on the aircraft.
6. To prevent the remote controller from interfering with other wireless equipment, please turn off other WiFi devices.
7. Do not fly near sources of electromagnetic or radio interference. Sources of interference include, but are not limited too, WiFi hotspots, routers, Bluetooth devices, high voltage power lines, high voltage power stations, mobile phone base stations, and television broadcast towers. Otherwise, the wireless transmission performance of the aircraft may be affected by interference and cannot fly normally.
8. Please charge/discharge the battery to a storage voltage of about 3.85V when the battery is not in use.

Caution:

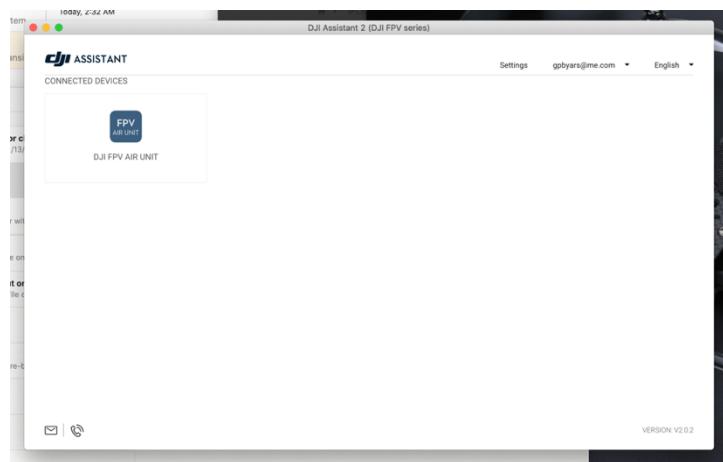
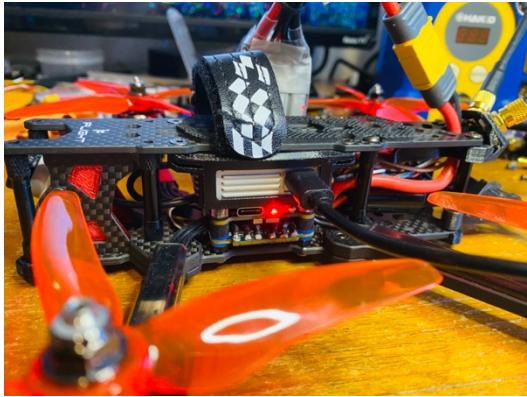
1. Users should ensure that they have a sufficient level of understanding of the aircraft and are aware of all emergency response measures.
2. Users should have a flight plan and do not be reckless, impromptu to fly the aircraft.
3. Please respect the privacy of others when you use aircraft to record video.
4. Stay away from the rotating propellers and motors.
5. After landing, first stop the motor, then turn off the flight battery, and then turn off the remote controller.
6. Turn off power or take off the propellers to prevent motors from high-speed rotation before setting the remote controller channels, upgrading firmware, and setting parameters.

Let's get started...



- ❖ The DC5 HD comes preconfigured and tuned with rates and PIDs and more.
- ❖ First, **Props off** (if not already, lol props off or fingers off) then plug into the flight controller's USB-C port.
- ❖ We will start by **backup your settings** in betaflight. Go to the CLI tab/page in betaflight and in the text entry box type Diff All and then hit enter. Next find the save to file button, click save to a file and save in a place you can find later.
- ❖ While in the CLI paste in `set gps_rescue_allow_arming_without_fix = on` then hit enter. Then type save and enter and you will reboot. With this you can arm and fly and GPS lock etc. will follow later but doesn't hinder arming. You can always set to off later if the need arises.
- ❖ Go back to the first page in betaflight and put the quad so it faces away from you and towards the screen. Hit the reset Z axis button and the view on screen should match your quad and when you move the quad that it moves in the same way.
- ❖ Notice on the right side of the screen various status fields, Find the block that says "Arming Disable Flags". If you have trouble arming check back on this box, it's got your answer 😊

Activate your Air Unit and update



- ❖ Activate your Air Unit (you will need to log into your DJI account) and after it will most likely insist on upgrading to the latest version (.500 as of this edit). Do so and upgrade but it may also ask you about a survey, Do not start the survey you can do later, it will ask again.
- ❖ The air unit can overheat without airflow but all is fine if you don't get side tracked. I recommend getting a small desk fan as part of your toolset, use it directly in front of the air unit
- ❖ Note: If the version downloaded does not match the version in your goggles and or transmitter, you should update those also so that all are on the same version.

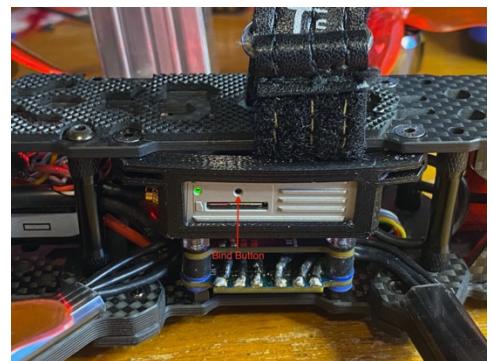
Binding and Batteries

- ❖ You will need your goggles and its power cable, your charged transmitter, and a lipo battery with a XT60 that is fully charged, the DC5 HD and a battery that is charged for it. Also a paperclip or blunt tool to push a recessed button.
- ❖ I recommend the iFlight Fullsend 1300mah 4S or 6S. Tattu and CNHL. I also highly recommend iSDT Smart chargers (806AC shown). Charges very fast and perfectly balanced, makes using storage mode easy. Saved me a bunch of money, I have a fire proof bag of bad (too low / delta V) batteries to go to the recycle center and thought, well let's try one on this charger? It charged it in 2mins perfect balance!! Stunned. Well I went thru that bag and recovered over a dozen batteries! It was \$60 at Pyrodrone and I may buy a second one. Yes. That good.
- ❖ If you will not be flying the next day or so, only charge your batteries to the **Storage level** (see your charger's instructions) or always do this - it will serve you well) and place in a fire safe place. Before flight, charge (or balance charge).

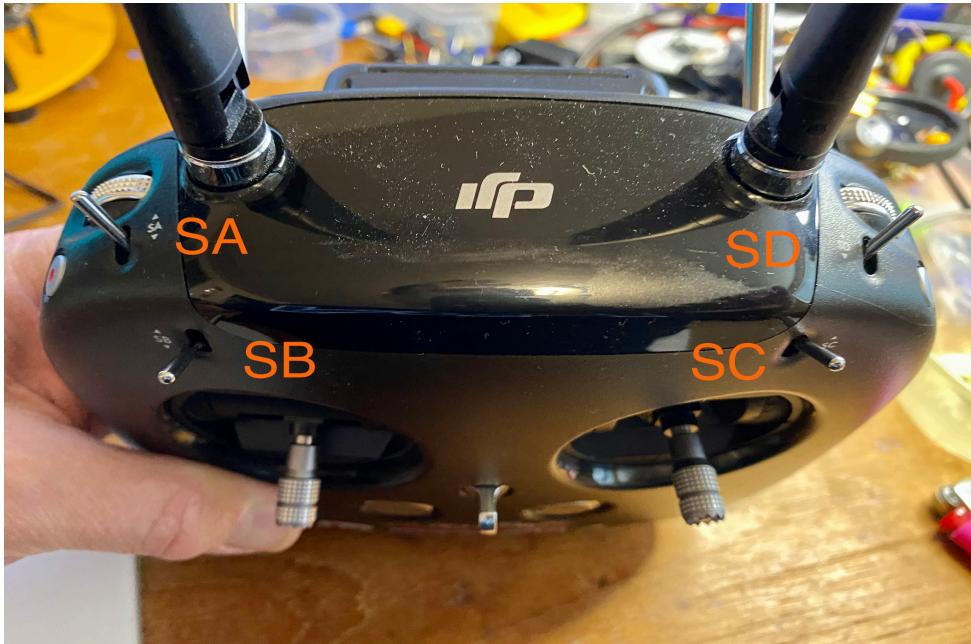


How to bind your goggles and DJI transmitter to your new DC5

- ❖ Next is activation and binding. There are great videos on how to do this from DJI <https://www.dji.com/fpv/info#downloads> is a link to the DJI page, a new pilot should watch all of these (they are pretty straightforward to understand). But I'll show also you the steps, as it's really pretty simple: Power up Quad, Goggles and DJI controller. use a paper clip and press the link button in the center of the air unit after it has turned **green**. It will turn **red** after pressed.
- ❖ Now, go to your DJI FPV goggles and find the recessed red button under where the battery cable connects to the goggles and press once, wait to hear beeps, then you'll hear air unit respond with beeps and note that the goggles now have video. If it doesn't the first time try again.
- ❖ Next we need to bind the transmitter but if you are using a different transmitter and receiver like FrSky or TBS Crossfire, follow that products instructions to bind instead and you are done as you only bind the goggles.
- ❖ We are using the DJI Transmitter ... so go to the air unit again, the LED should have turned **green** again. Press again with paperclip or blunt not sharp tool, and get the **red** light. Go to the transmitter (controller) and do the "three finger salute" by pressing once these three buttons all at the same time. It will start to beep and then you will hear the confirming beeps. Air Unit LED will be **green** again.



After Binding: Your DJI Transmitter



- ❖ Go to your goggles and set protocol correctly. On goggles, find the 5 way button/joystick Menu button. Press it, then choose Settings, then Device, and then Protocol. Make sure it says “**SBUS BAUD FAST**”. Next back up a menu or two to the settings menu and go to Display, OSD settings make sure **Custom OSD** settings is on.
- ❖ Standard convention for transmitters is all switches should be in up or the forward position which is off when you power off and on the transmitter, this is sometimes called the safe position.
- ❖ Your DC5 HD probably came configured with just one control that you can use (**Arm on SA**) and set with Angle Mode on always.

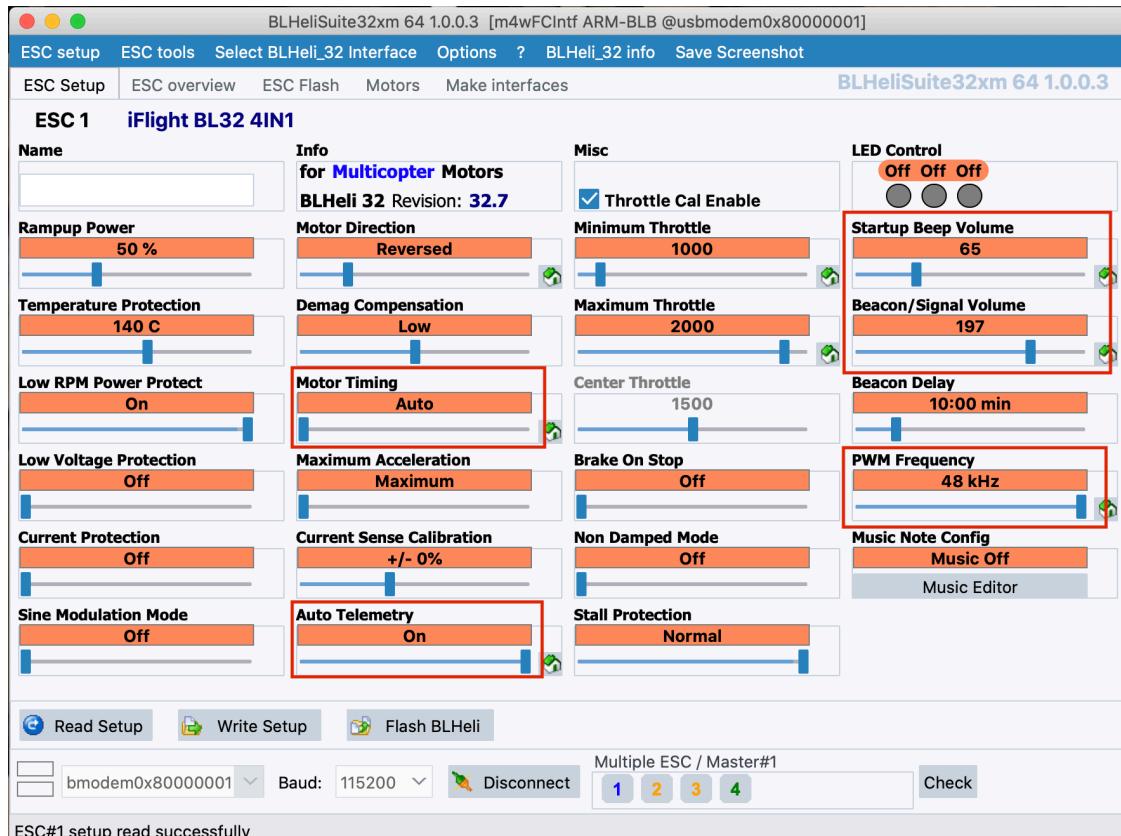
After binding...

- ❖ Once ready to fly, Power your transmitter and safe all switches in the up or off position. Check that the throttle is in fact at zero.
- ❖ SA is your Arm switch, move it all the way down to arm.
- ❖ If you don't have your goggles on put them on (unless just flying line of sight (LOS)) and move SA to the down or on position. To take off raise the throttle slowly but not too slowly, you want a smooth take off so give it some gas.
- ❖ To land locate the spot you want to land and come in slow and in steady forward and downward motion. Land and move throttle to zero and disarm by move switch SA to up or off position, Congratulations! Don't forget to **disconnect battery** from quad, **unplug goggles** and **turn off transmitter** once done flying.
- ❖ Following this guide is how to do a full setup including how to back up your settings, update the firmware, configure the ESCs with BLHeli32 Configurator, and in betaflight setup all pages including mode switches, rates, PIDs and RPM filtering and more but you don't need any of that for now, go fly! #SendIt





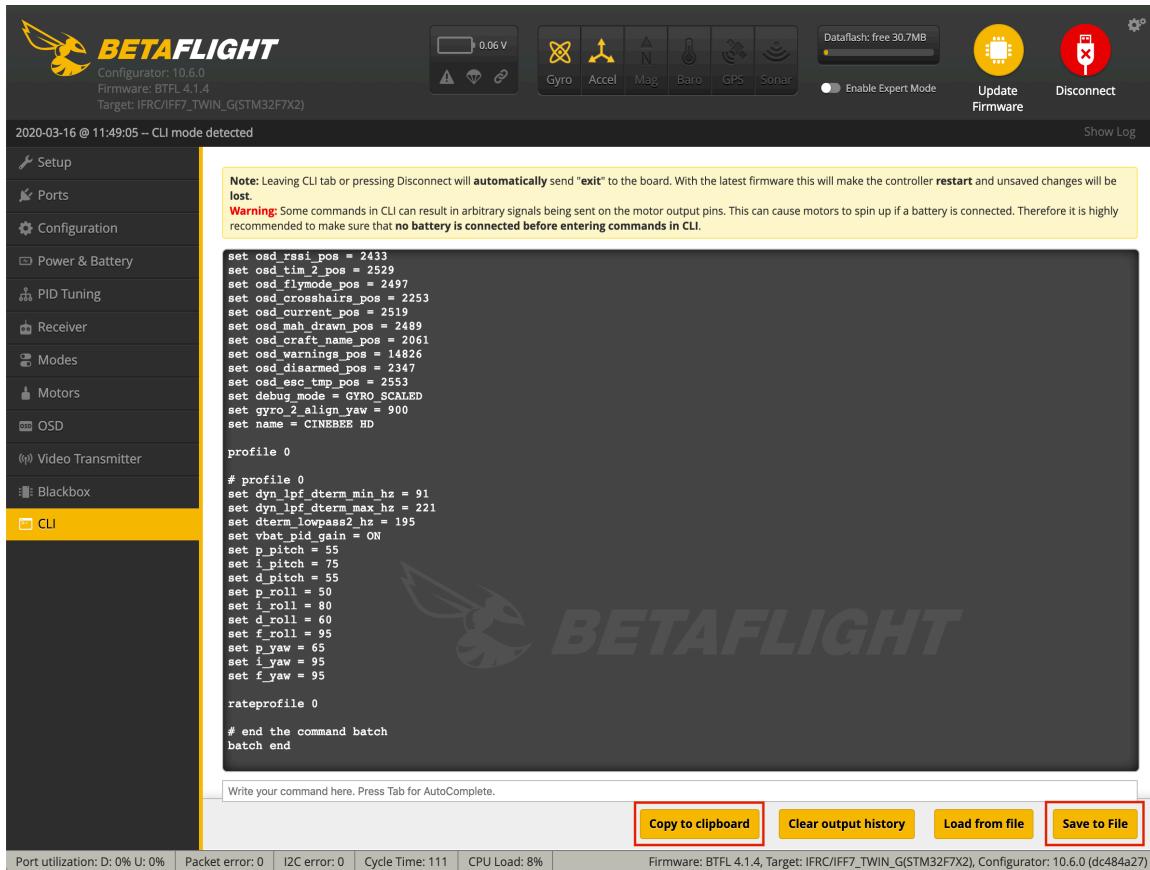
Updating Betaflight to the latest version and setting up RPM filtering and Bidirectional Dshot (*but first we should check the BLHELI32 ESC settings with BLHeliSuite32 configurator app*)



Verify your settings match these...

- ❖ We want to have BLHeli32 setup for BiDirectional DShot which requires ver 32.7 or later. Let's check the settings (and these need to be set for new parts) in BLHELI32 (from Oscar Liang's excellent guide on this subject FYI).
- ❖ Auto Telemetry is optional as is the beep and signal volume for startup and lost craft recovery settings.
- ❖ PWM Frequency: 48KHz for freestyle; Default (or higher) for racing.
- ❖ Motor Timing: Auto (or 20-22) for freestyle.
- ❖ This is also where you can change the motor direction, instead of swapping wires at the motor.

Updating Betaflight to the latest version and complete setup including RPM filtering continued...



- ❖ Next let's save your settings that are different than the default values with the DIFF command in the CLI.
- ❖ Clear the screen with the button for that and type DIFF (not diff all or dump all, we will be getting the "all" part of the settings after connecting for the first time as don't want to mingle or overwrite them. Good setup hygiene practices 😊) and then enter. The command executes (this can be done with the gui now too) now click the button "copy to clipboard". Also click save to file button and save where you can find it again later. But the clipboard is what we need right now.
- ❖ Next Click the Update Firmware round yellow button in the top right.

Updating Betaflight to the latest version continued...

2020-03-16 @ 11:57:57 -- Loaded release information for firmware from GitHub.

Welcome Changelog Privacy Policy Documentation & Support Firmware Flasher

Show unstable releases
IFF7_TWIN_G (IFRC)
4.1.5 - 15-03-2020 22:50
No reboot sequence
Full chip erase
Manual baud rate 256000

Warning

Please do **not** try to flash **non-Betaflight** hardware with this firmware flasher.
Do **not** disconnect the board or **turn off** your computer while flashing.

Note: STM32 bootloader is stored in ROM, it cannot be bricked.
Note: **Auto-Connect** is always disabled while you are inside firmware flasher.
Note: Make sure you have a backup; some upgrades/downgrades will wipe your configuration.
Note: If you have problems flashing **try disconnecting all cables from your FC** first, try rebooting, upgrade chrome, upgrade drivers.
Note: When flashing boards that have directly connected USB sockets (most newer boards) ensure you have read the USB Flashing section of the Betaflight manual and have the correct software and drivers installed

IMPORTANT: Ensure you flash a file appropriate for your target. Flashing a binary for the wrong target can cause **bad** things to happen.

Recovery / Lost communication

If you have lost communication with your board follow these steps to restore communication:

- Power off
- Enable 'No reboot sequence', enable 'Full chip erase'.
- Jumper the BOOT pins or hold BOOT button.
- Power on (activity LED will NOT flash if done correctly).
- Install all STM32 drivers and Zadig if required (see **USB Flashing** section of Betaflight manual).
- Close configurator, Close all running chrome instances, Close all Chrome apps, Restart Configurator.
- Release BOOT button if you've FC has one

Please load firmware file Flash Firmware Load Firmware [Online] Load Firmware [Local]

Port utilization: D: 0% U: 0% Packet error: 0 I2C error: 0 Cycle Time: 0 Configurator: 10.6.0 (dc484a27)

❖ You should be in the Firmware Flasher section.

❖ Select the IFF7_TWIN_G (IFRC) target and the latest betaflight (as of today 4.1.5).

❖ Click “Load Firmware online” button.

❖ Click the Flash Firmware button.

2020-03-16 @ 11:57:57 -- Loaded release information for firmware from GitHub.

Welcome Changelog Privacy Policy Documentation & Support Firmware Flasher

Show unstable releases
IFF7_TWIN_G (IFRC)
4.1.5 - 15-03-2020 22:50
No reboot sequence
Full chip erase
Manual baud rate 256000

Release info

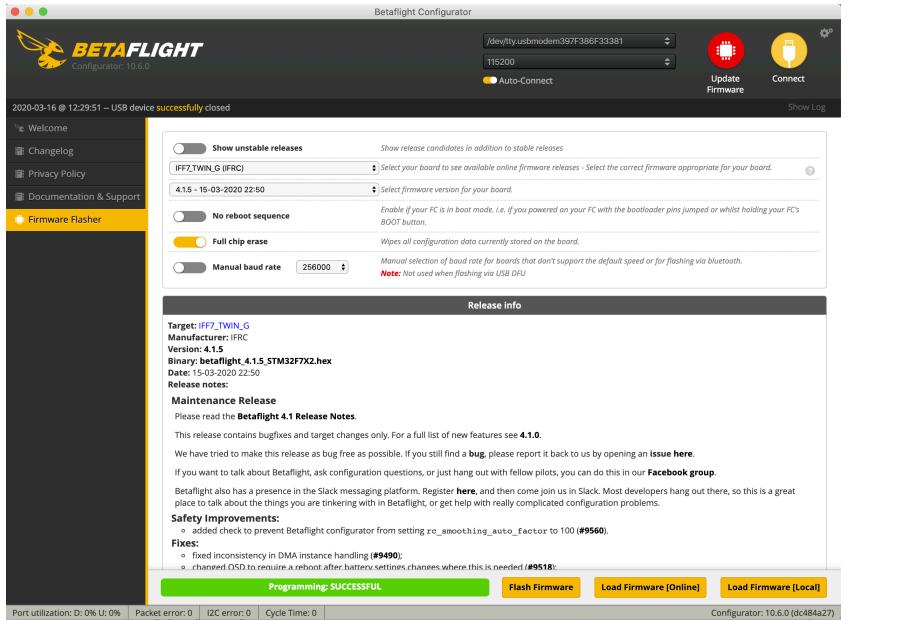
Target: IFF7_TWIN_G
Manufacturer: IFRC
Version: 4.1.5
Binary: betaflight_4.1.5_STM32F7X2.hex
Date: 15-03-2020 22:50
Release notes:
Maintenance Release
Please read the [Betaflight 4.1 Release Notes](#).
This release contains bugfixes and target changes only. For a full list of new features see [4.1.0](#).
We have tried to make this release as bug free as possible. If you still find a bug, please report it back to us by opening an issue [here](#).
If you want to talk about Betaflight, ask configuration questions, or just hang out with fellow pilots, you can do this in our [Facebook group](#).
Betaflight also has a presence in the Slack messaging platform. Register [here](#), and then come join us in Slack. Most developers hang out there, so this is a great place to talk about the things you are tinkering with in Betaflight, or get help with really complicated configuration problems.

Safety Improvements:
fixed check to prevent Betaflight configurator from setting `rx_smoothing_auto_factor` to 100 ([#9560](#)).
Fixed inconsistency in DMA instance handling ([#9490](#)).
changed OSD to require a reboot after battery settings changes when this is needed ([#951A](#)).

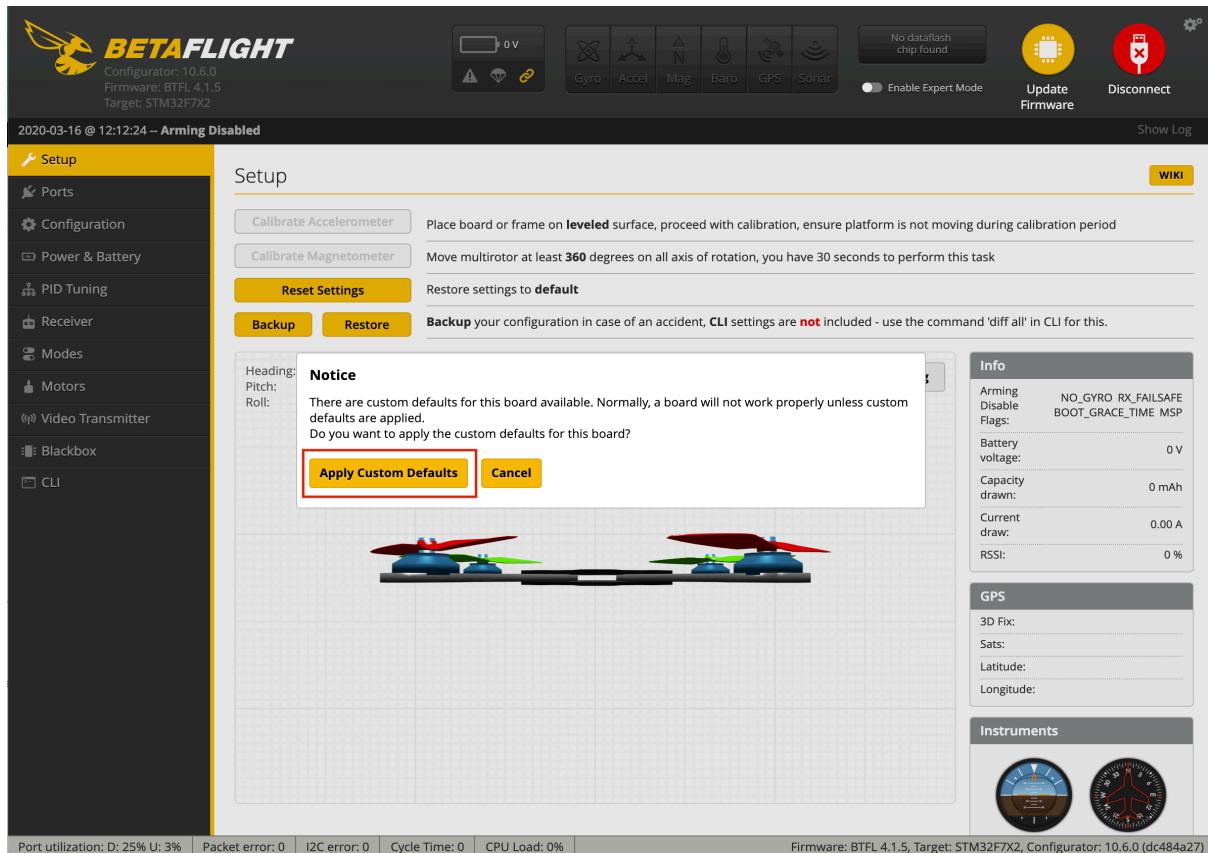
Loaded Online Firmware: (490312 bytes) Flash Firmware Load Firmware [Online] Load Firmware [Local]

Port utilization: D: 0% U: 0% Packet error: 0 I2C error: 0 Cycle Time: 0 Configurator: 10.6.0 (dc484a27)

Updating Betaflight to the latest version continued...



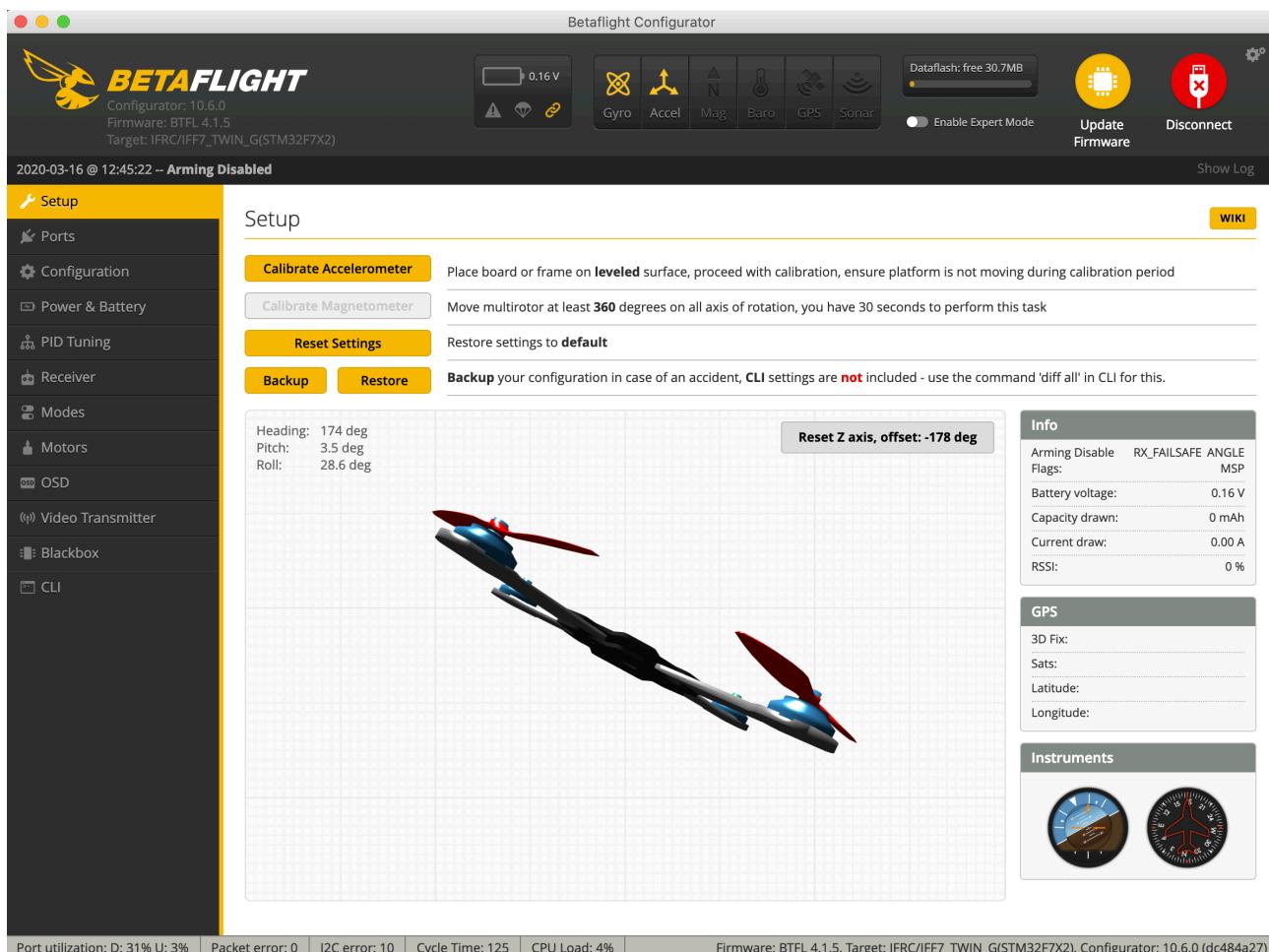
You are not done yet....



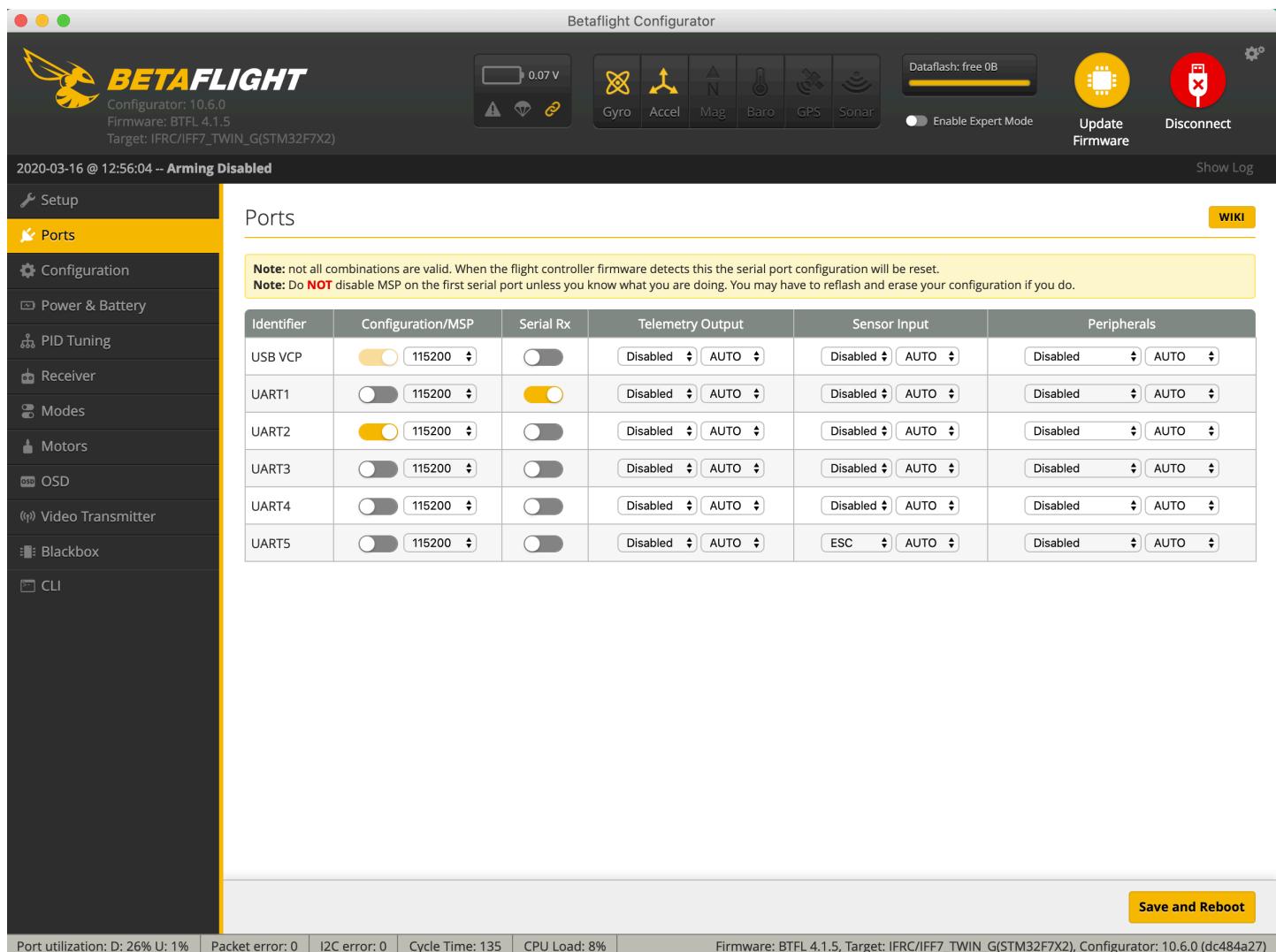
Be sure to click the “Apply Custom Defaults” (nearly always choose this) button

Betaflight setup for DC5 HD (Setup page)

- ❖ Let's review each page in Betaflight to see if correctly setup. Everyone is different and setups vary. For this guide I am using my current settings for my personal DC5 HD.
- ❖ This is probably the most useful and overlooked screens in Betaflight. for example if you cannot figure out why it won't arm, come here while connected with props off and check the "Arming Disable Flags" on the right here. But right now we have two important tasks to perform.
- ❖ First, Use the Reset the Z axis button and tilt / move etc the quad, and does it move the same way on screen as in real life? If not we will later at the Config BF screen need to set the Yaw axis value (hint might need -90).
- ❖ Second, is it level? If it is and looking good stop here, but if not, you will need to find the most level spot near your PC. Use a level gauge or a smartphone app to find the best spot and put your quad there. Then hit the calibrate Accelerometer button.

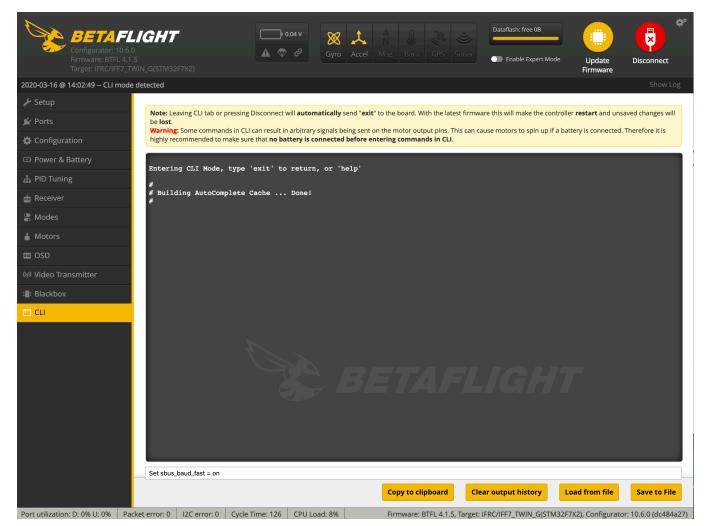
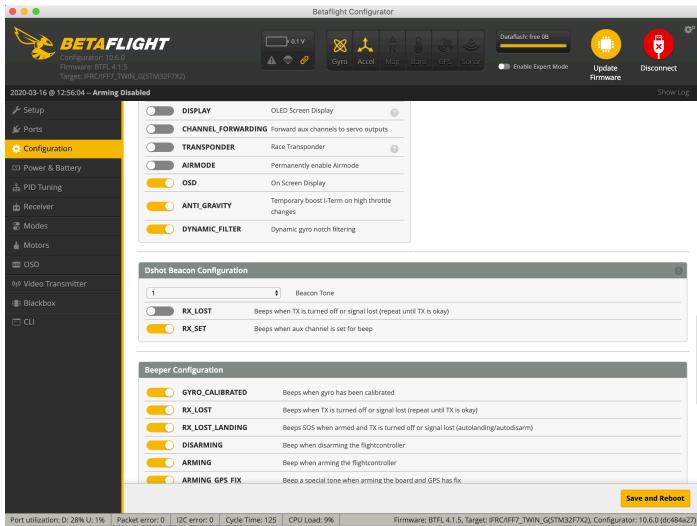
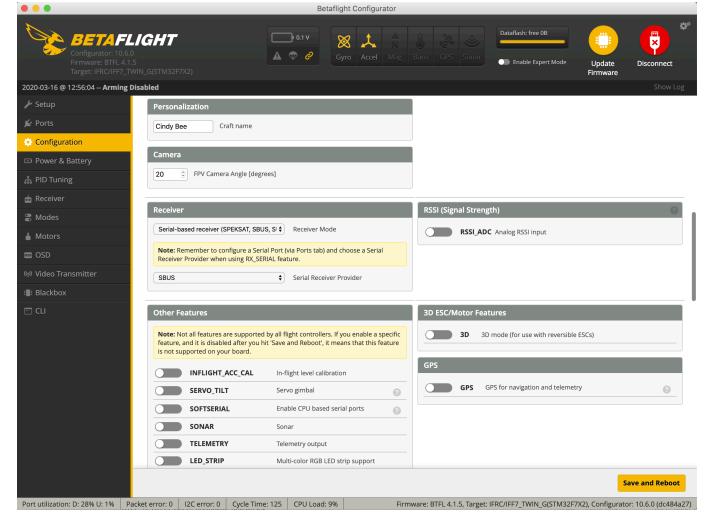
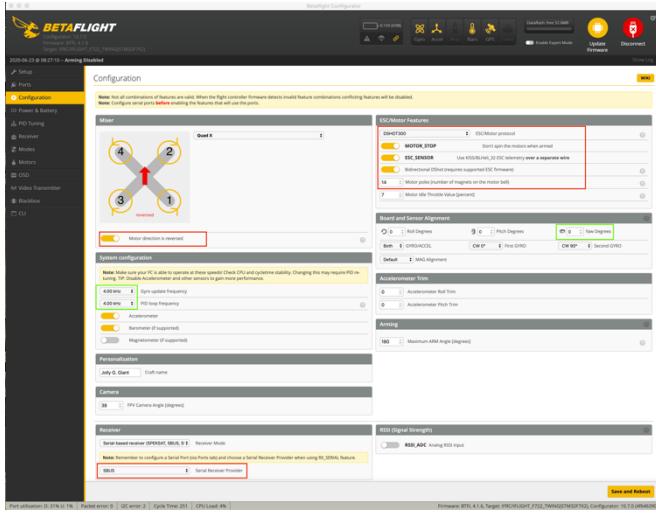


Betaflight setup for DC5 HD (Ports page)



- ❖ Verify you are setup like this if using the DJI transmitter:
- ❖ Serial Rx switch is set for UART1.
- ❖ MSP switch is set for UART2 (serial connection to Air Unit but as a master serial Port or MSP).
- ❖ ESC Sensor Input is set for UART5 (optional).

Betaflight setup for DC5 HD (Config page(s))



- ❖ Lot's of stuff here: check that the motor direction switch is set to **Reversed**.
- ❖ ESC Motor Features: **DSHOT600** is selected, **Motor Stop** if following my setup (will use in modes page), **ESC Sensor** and BiDirectional Dshot switches are all set to On. Motor poles should be set to 14.
- ❖ If on the setup page the quad didn't tilt the same way you moved it, you can adjust it here (my setup has **-90 set for Yaw Degrees**).
- ❖ Let's be sure we are set to Sbus Fast, go to the CLI and enter "**Set sbus_baud_fast = on**". And then "save". Next check to see if protocol is set right in your Goggles. On goggles, Go to **Menu, Settings, Device, Protocol**. Make sure it says "**SBUS BAUD FAST**".

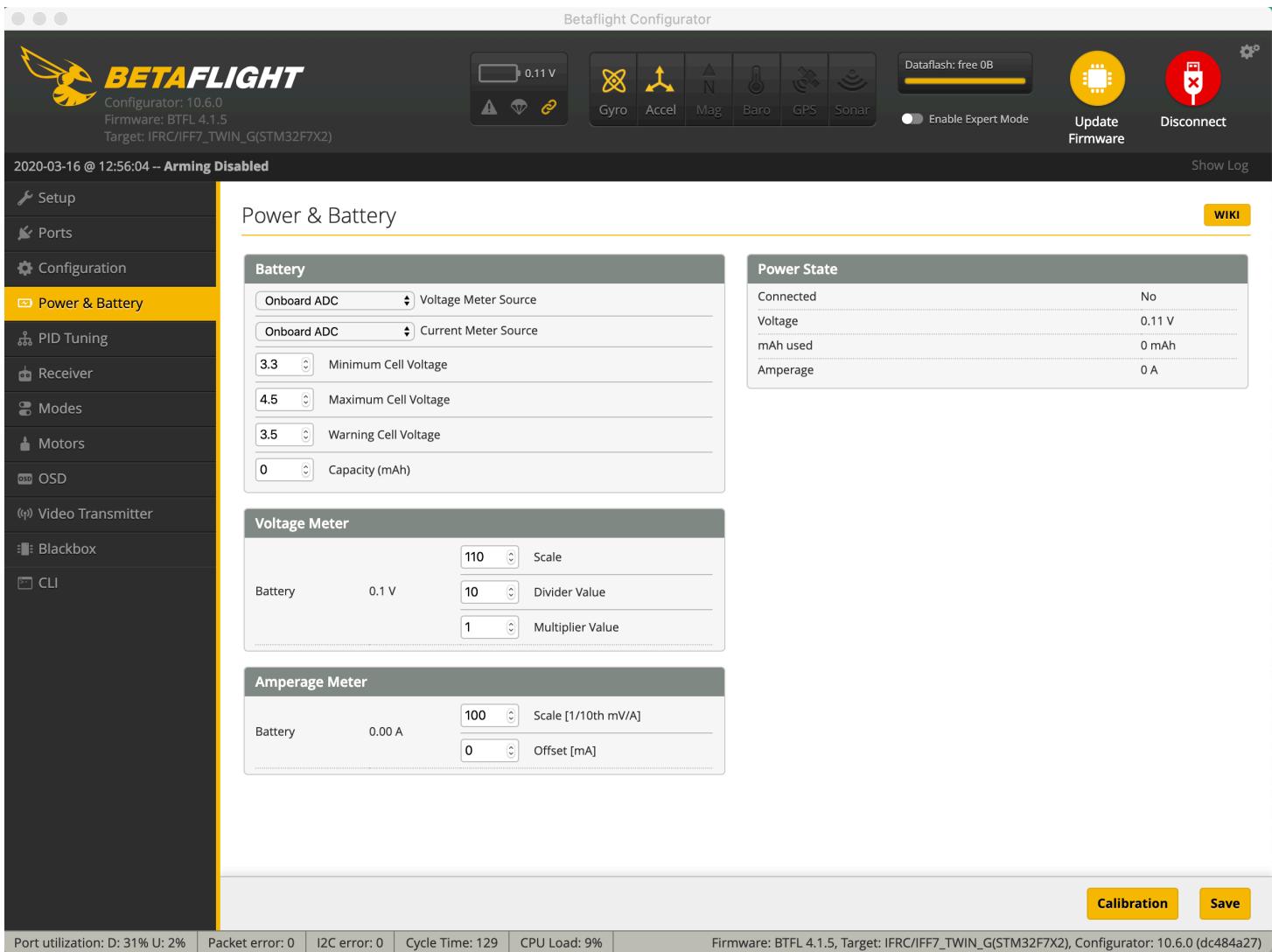
Betaflight setup for DC5 HD (Config pages continued)

- ❖ Turn off soft serial if it is set, as well as display and if following my setup, Airmode always on should be set to **off** (turned on in modes page).
- ❖ RX_Lost is optional.
- ❖ But set switch RX_Set to on, we have Dshot so we can use the motors to provide a beep. Useful to tell if transmitter is communicating (make it beep, better than the arm switch) and in lost craft recovery.
- ❖ I turn off Bat Low, as you cannot hear it while flying. Bat Critical is on so if after landing the battery is very low and needs a charge soon so it doesn't go below the voltage one can recharge from.
- ❖ Beep on Armed is unnecessary and wastes power. Turn it and the USB one off too.

The screenshots illustrate the Betaflight Configurator interface across three different flight modes:

- Arming Disabled (Top Screenshot):** This page contains settings for Personalization (Craft name: Cindy Bee), Camera (FPV Camera Angle: 20 degrees), Receiver (Serial-based receiver: SPEKTRUM, SBUS, SBus, Receiver Mode: Receiver Mode), Other Features (Inflight ACC CAL, SERVO TILT, SOFTSERIAL, SONAR, TELEMETRY, LED STRIP), and ESC/Motor Features (3D mode). It also includes RSSI (Signal Strength) and GPS sections. A note at the bottom of the receiver section states: "Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature." A "Save and Reboot" button is located at the bottom right.
- Arming Enabled (Middle Screenshot):** This page shows Dshot Beacon Configuration for RX_LOST and RX_SET, and Beeper Configuration for various events like GYRO_CALIBRATED, RX_LOST, RX_LOST_LANDING, DISARMING, ARMING, and ARMING_GPS_FIX. A "Save and Reboot" button is located at the bottom right.
- Armed (Bottom Screenshot):** This page lists numerous beeping events: RX_LOST_LANDING, DISARMING, ARMING, ARMING_GPS_FIX, BAT_CRIT_LOW, BAT_LOW, GPS_STATUS, RX_SET, ACC_CALIBRATION, ACC_CALIBRATION_FAIL, READY_BEEP, DISARM_REPEAT, ARMED, SYSTEM_INIT, USB, BLACKBOX_ERASE, CRASH_FLIP, CAM_CONNECTION_OPEN, CAM_CONNECTION_CLOSE, and RC_SMOOTHING_INIT_FAIL. A "Save and Reboot" button is located at the bottom right.

Betaflight setup for DC5 HD (Power & Battery page)



- ❖ Defaults are fine here for the DC5 HD
- ❖ You can now calibrate your power! it's very simple but you will need a digital multimeter (DMM). Follow the instructions after pushing calibration button to set.

Betaflight setup for DC5 HD (PID Tuning page)

PID Tuning

PID Profile Settings | **Rateprofile Settings** | **Filter Settings**

	Proportional	Integral	Derivative	D Min	Feedforward
Basic/Acro					
ROLL	50	80	60	20	95
PITCH	55	75	55	22	95
YAW	65	95	0	0	90

Note: Sliders are disabled because values were changed manually. Clicking the 'Enable Sliders' button will activate them again. This will reset the values and any unsaved changes will be lost.

Angle/Horizon

	Strength	Transition
Angle	50	
Horizon	50	75
Angle Limit	55	

PID Controller Settings

- Feedforward transition
- Acro Trainer Angle Limit
- Throttle Boost
- Absolute Control
- I Term Rotation
- Vbat PID Compensation
- Integrated Yaw
- I Term Relax
 - RP Axes
 - Setpoint Type
 - 20 Cutoff
- D Min
 - 27 Gain
 - 20 Advance
- Anti Gravity
 - Smooth Mode
 - 5 Gain

Refresh | **Save**

PID Tuning

PID Profile Settings | **Rateprofile Settings** | **Filter Settings**

IMPORTANT: We recommend using the sliders to change filter settings. Move both sliders together.
It is best to make relatively small changes and test fly after each change. Check the motor temperatures closely before making further changes.
Less filtering (sliders to the right, higher cutoff values) will improve propwash, but will let more noise through to the motors, making them hotter, possibly hot enough to burn out. Less filtering is possible on most clean builds and if rpm filtering is enabled.
Unusually high or low filter settings may cause flyaways on arming. The defaults are safe for typical 5" quads.
Note: Changing profiles will only change the D-term filter settings. Gyro filter settings are the same for all profiles.

Note: Sliders range is restricted because you are not in expert mode. This range should be suitable for most builds and beginners.

	More Filtering	Default Filtering	Less Filtering
Gyro Filter Multiplier:	1.2		
D Term Filter Multiplier:	1.2		

Profile Independent Filter Settings

Gyro Lowpass Filters

PT1	240	Gyro Lowpass 1 Dynamic Min Cutoff Frequency [Hz]
PT1	600	Gyro Lowpass 1 Dynamic Max Cutoff Frequency [Hz]
PT1	200	Gyro Lowpass 1 Cutoff Frequency [Hz]
PT1	300	Gyro Lowpass 1 Filter Type
PT1	3	Gyro Lowpass 2 Cutoff Frequency [Hz]
PT1	100	Gyro Lowpass 2 Filter Type

Gyro Notch Filters

PT1	0	Gyro Notch Filter 1 Center Frequency [Hz]
PT1	0	Gyro Notch Filter 1 Cutoff Frequency [Hz]
PT1	0	Gyro Notch Filter 2 Center Frequency [Hz]
PT1	0	Gyro Notch Filter 2 Cutoff Frequency [Hz]

Gyro RPM Filter

PT1	3	Gyro RPM Filter Harmonics Number
PT1	100	Gyro RPM Filter Min Frequency [Hz]

Dynamic Notch Filter

AUTO	Dynamic Notch Filter Range
0	Dynamic Notch Width Percent
90	Dynamic Notch Q
200	Dynamic Notch Min Hz

Profile Dependent Filter Settings

D Term Lowpass Filters

PT1	84	D Term Lowpass 1 Dynamic Min Cutoff Frequency [Hz]
PT1	204	D Term Lowpass 1 Dynamic Max Cutoff Frequency [Hz]
PT1	150	D Term Lowpass 1 Cutoff Frequency [Hz]
PT1	180	D Term Lowpass 2 Cutoff Frequency [Hz]

D Term Notch Filters

PT1	0	D Term Notch Filter Center Frequency [Hz]
PT1	0	D Term Notch Filter Cutoff Frequency [Hz]

Yaw Lowpass Filters

PT1	0	Yaw Lowpass Cutoff Frequency [Hz]
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Refresh | **Save**

Betaflight setup for DC5 HD (Receiver page)

Please read receiver chapter of the documentation. Configure serial port (if required), receiver mode (serial/ppm/pwm), provider (for serial receivers), bind receiver, set channel map, configure channel endpoints/range on TX so that all channels go from ~1000 to ~2000. Set midpoint (default 1500), trim channels to 1500, configure stick deadband, verify behaviour when TX is off or out of range.

IMPORTANT: Before flying read failsafe chapter of documentation and configure failsafe.

Roll [A]	1501
Pitch [E]	1492
Yaw [R]	1498
Throttle [T]	1003
AUX 1	1000
AUX 2	1000
AUX 3	1000
AUX 4	1000
AUX 5	1000
AUX 6	1000
AUX 7	1000
AUX 8	1000
AUX 9	1000
AUX 10	1000
AUX 11	1000
AUX 12	1000
AUX 13	988
AUX 14	988

Channel Map		RSSI Channel
AETR1234		Disabled

'Stick Low' Threshold	Stick Center	'Stick High' Threshold
1050	1500	1900

RC Deadband	Yaw Deadband	3D Throttle Deadband
0	0	50

RC Smoothing	
Filter	Smoothing Type
RPYT	Channels Smoothed
Auto	Input Cutoff Type
Biquad	Input Filter Type
Auto	Derivative Cutoff Type
Biquad	Derivative Filter Type
10	Auto Smoothness

Preview

Refresh Save

Port utilization: D: 39% U: 3% | Packet error: 0 | I2C error: 0 | Cycle Time: 129 | CPU Load: 12% | Firmware: BTFL 4.1.5, Target: IFRC/IFF7_TWINK_G(STM32F7X2), Configurator: 10.6.0 (dc484a27)

- ❖ Connect your DC5 HD to battery, power up your goggles and DJI Transmitter.
- ❖ With props off the DC5 and connected to transmitter as well as betaflight, verify the controls. Does the throttle work the correct control? Same for the rest and do the switches function?
- ❖ If the controls do not respond correctly you may need to change the setting that shows something different to “AETR1234” if using the DJI transmitter (Jumper T16 as well).

Betaflight setup for DC5 HD (Modes page)



- ❖ Your DC5 probably came configured with just one control that you can use (arm on SA). Here I show a much more useful setup for the Modes (Aux Switches SA-SD). First is what switch does what and following that is the modes screen and the #aux settings you can paste and run in the CLI (don't forget to save) for my settings shown here
- ❖ Standard convention for transmitters is all switches should be in up or the forward position which is off when you power on (or off) the transmitter, this is sometimes called the safe position.
- ❖ Your three position switches SA, SB, SC, SD respond to their settings in the betaflight firmware in your DC5 which has been set as follows:
- ❖ Switch B (**SA**) is your **Arm switch**, move to the bottom position to arm the Cinbee. Props will spin if in Air mode at this point.
- ❖ Switch A (**SB**) is your **Flight Mode Switch**: the default (all the way up) is plain **Acro** mode, the middle is **Angle Stability** mode position, and the bottom position is full **Acro** (with Air Mode and props will spin once armed) and is best for flips and rolls. More advanced pilots may want to flip this around so that Acro with Air Mode is default (switch in up position).
- ❖ Switch C (**SC**) is **Crash Recovery Arming mode** (a mouthful so its also known as turtle mode or turtle recovery mode. To use you must first disarm (SB is all the way up) then arm the Turtle (SC all the way down). Use your sticks to flip back over (see youtube videos on this subject to learn to use properly). Disarm Turtle Mode (SC all the way up). Now arm your Cinebee (SB all the way up) and fly home 😊 .
- ❖ Switch D (**SD**) is your **Bepper** that you enabled on the Config page, move switch SD down to the bottom position to use the motors to make sounds. Useful to confirm your transmitter is live as well as aid in lost craft recovery. Status beeps too.

Betaflight setup for DC5 HD (Modes page continued)

Configure modes here using a combination of ranges and/or links to other modes (links supported on BF 4.0 and later). Use **ranges** to define the switches on your transmitter and corresponding mode assignments. A receiver channel that gives a reading between a range min/max will activate the mode. Use a **link** to activate a mode when another mode is activated. **Exceptions:** ARM cannot be linked to or from another mode, modes cannot be linked to other modes that are configured with a link (chained links). Multiple ranges/links can be used to activate any mode. If there is more than one range/link defined for a mode, each of them can be set to **AND** or **OR**. A mode will be activated when:
- ALL **AND** ranges/links are active; OR
- at least one **OR** range/link is active.

Remember to save your settings using the Save button.

Hide unused modes

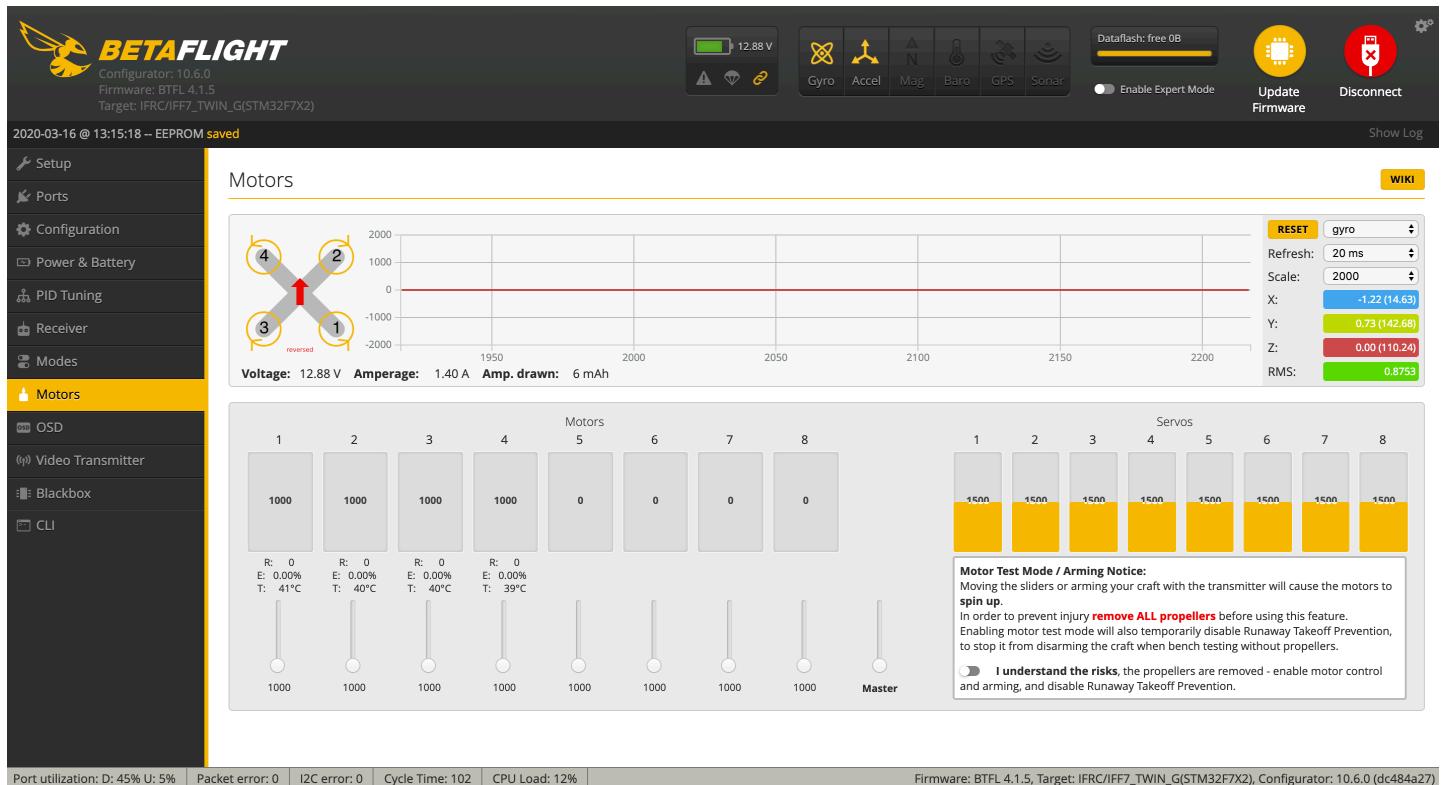
Mode	AUX	Min	Max
ARM	AUX 1	1700	2100
ANGLE	AUX 2	1325	1700
BEEPER	AUX 4	1700	2100
AIR MODE	AUX 2	1300	2100
FLIP OVER AFTER CRASH	AUX 3	1700	2100

Port utilization: D: 35% U: 2% | Packet error: 0 | I2C error: 0 | Cycle Time: 125 | CPU Load: 9% | Firmware: BTFL 4.1.5, Target: IFRC/FF7_TWIN_G(STM32F7X2), Configurator: 10.6.0 (dc484a27)

- ❖ Copy and paste these #Aux settings (following) to set the modes this way, paste into the CLI, hit enter and don't forget to click **save** button after.
- ❖ Or just use the Betaflight GUI and configure like this by sliding the bars (also don't forget that save button at the bottom of the page) 😊

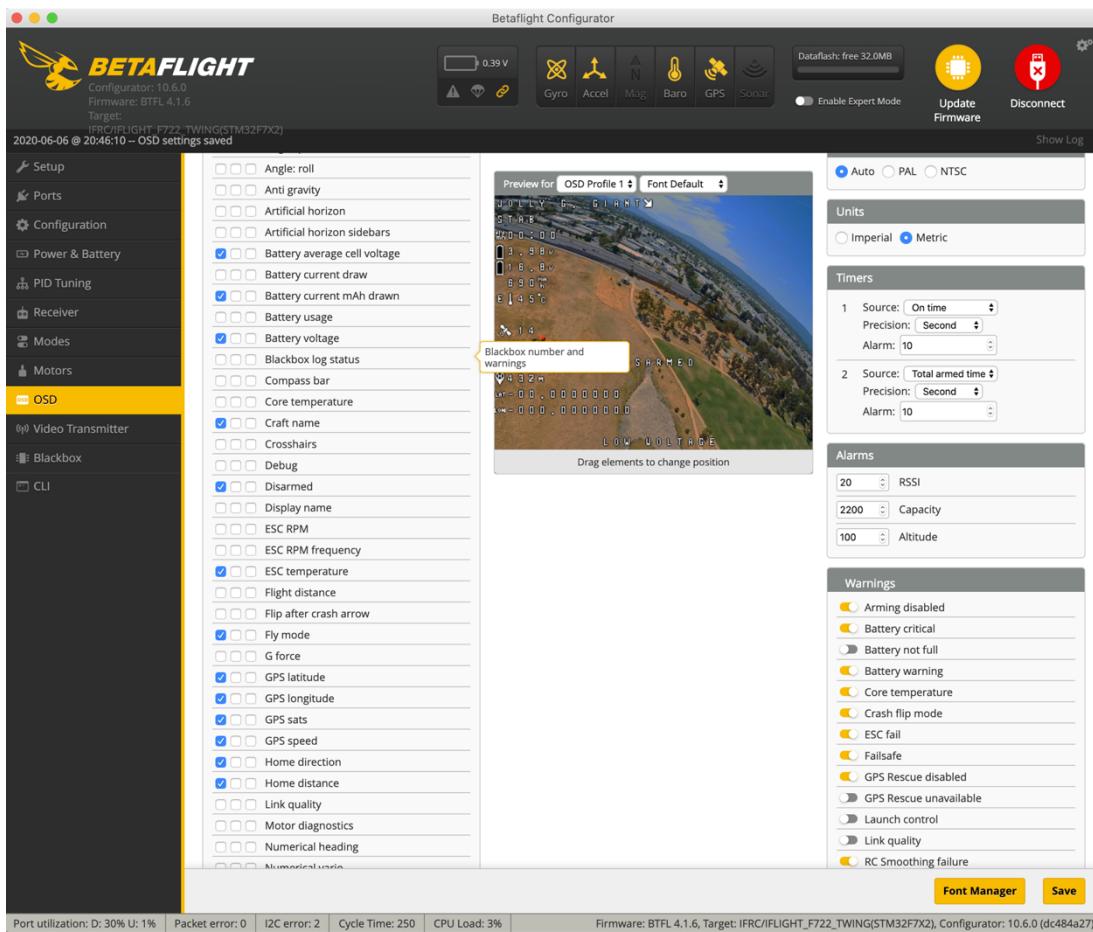
```
# aux
aux 0 0 0 1700 2100 0 0
aux 1 1 1 1325 1700 0 0
aux 2 1 3 3 1700 2100 0 0
aux 3 2 8 1 1300 2100 0 0
aux 4 3 5 2 1700 2100 0 0
```

Betaflight setup for DC5 HD (Motors page)



- ❖ **Props off!** or *Fingers off!* You have been warned lol. That's why the big message and a switch on this page. (flip that when stuck in MSP arming flag issue too)
- ❖ Note the direction shown for the motors and spin them slowly (just enough to spin) and verify **each motor is spinning in the correct direction**. If not, go back to BLHeli32 and correct (remember that setting?) then return here and test to verify.
- ❖ **DO NOT REV THE MOTORS!** Do not run up above 10-20% as you do NOT have the resistance from the props and the motors will quickly overheat and burn up.

Betaflight setup for DC5 HD (OSD page)



- ❖ Cut & Paste these to the CLI and then Save to quickly bring up these settings. Then edit and move around to your liking.

```
set osd_warn_batt_not_full = OFF
set osd_warn_launch_control = OFF
set osd_warn_no_gps_rescue = OFF
set osd_vbat_pos = 2176
set osd_rssi_pos = 411
set osd_link_quality_pos = 421
set osd_tim_2_pos = 2118
set osd_flymode_pos = 2080
set osd_throttle_pos = 461
set osd_vtx_channel_pos = 469
set osd_current_pos = 96
set osd_mah_drawn_pos = 2208
set osd_craft_name_pos = 2048
set osd_display_name_pos = 33
set osd_gps_speed_pos = 2336
set osd_gps_lon_pos = 2464
set osd_gps_lat_pos = 2432
set osd_gps_sats_pos = 2304
set osd_home_dir_pos = 2062
set osd_home_dist_pos = 2400
set osd_compass_bar_pos = 10
set osd_altitude_pos = 2368
set osd_warnings_pos = 14826
set osd_avg_cell_voltage_pos = 2144
set osd_battery_usage_pos = 489
set osd_disarmed_pos = 2379
set osd_nheading_pos = 259
set osd_nvario_pos = 291
set osd_esc_tmp_pos = 2240
set osd_flip_arrow_pos = 509
set osd_core_temp_pos = 502
set osd_stat_max_dist = ON
set osd_stat_endbatt = ON
set osd_stat_battery = ON
set osd_stat_max_g_force = ON
set osd_stat_max_esc_temp = ON
set osd_stat_flight_dist = ON
set osd_stat_total_time = ON
```



