

DJI NAZA-M: IDIOTS GUIDE

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INTRODUCTION

So everyone has told you how amazing the DJI Naza is and how simple it is to configure but you're struggling to get your multi-copter setup and flying and its driving you mental!

Ok I'm sorry to break this to you but they are right, it is genuinely really easy and hopefully this little guide will help you work out the little piece of the puzzle you have been missing.

Now we're done with the formalities let's get down to business and get you flying!

DIFFERENCE BETWEEN THE DIFFERENT NAZA UNITS?

At the time of writing this document there were three different versions of Naza-M

- Naza-M V1
- Naza-M Lite
- Naza-M V2

Hardware wise these units are all identical, there may be some very minor manufacturing revisions but they are all exactly the same.

So why three different units you ask? Well this is where it gets interesting: If we ignore the Lite version for the moment the V1 and V2 both run the same firmware and use the same Assistant Software however the Naza V2 is housed in a black and orange case and is supplied with an extra module (called the PMU) which allows for expansion.

DJI wisely decided to offer upgrades (such as an OSD, data link and camera gimbals) for the Naza but all of the ports were occupied on the V1 so the V2 was born and it shipped with the new PMU module.

However the PMU module can be simply purchased and attached to the V1 which in essence gives you all of the functionality of a V2.

So what's different about the Lite I hear you cry? I'll be honest with you and say I'm not 100% sure of the logic behind the Lite but I can only assume it was to keep DJI competitive at the lower end of the market because as mentioned hardware wise it is identical to the full-versions but here's the killer: DJI restrict you to using an old version of the Assistant software plus the Firmware is developed separately so some features and tweaks are actually missing from the Lite, which is a bit of a bummer!

WHERE TO START?

I'm going to assume you've been able to open the box, remove the Naza unit and make some vague attempt at fitting it to your air-frame, if you're struggling with the box please give up at this stage.

ORIENTATION

When looking at the top of your Naza (the top is the side with the sticker on) you'll notice that each plug/port is labelled and one end has eight ports labelled M1, M2, M3, M4, M5, M6, F1 & F2, this end is the FRONT so make sure that this is facing towards the front of your multi-copter.

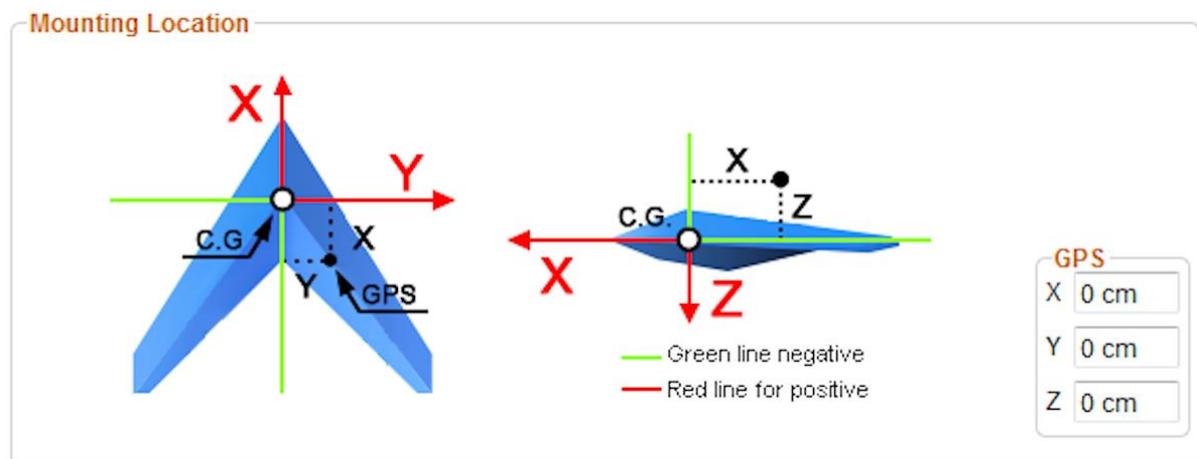
Now for the GPS module, this can catch a few people out! When you look at the top of the GPS module (the side with the DJI logo) you'll notice that there is a coloured ring with a small point or arrow coming out of it, that little arrow should always be pointing forwards.

The reason this arrow MUST be facing forwards is simply because this GPS module also contains a three axis compass so the Naza can detect which direction the craft is actually pointing in even if it is hovering stationary.

MOUNTING POSITION

The main Naza unit its self should be mounted as close as possible to the centre of the air-frame, this gives it the best opportunity to readings of the crafts current attitude.

Its' not so important for the GPS unit to be smack-bang in the middle (close is good) but needs to be as high as possible (hence the tall mount that is supplied) because the internal compass is very sensitive to interference from your motors due to them being little lumps of electro-magnetic radiating evilness and you wouldn't want the compass mistaking a motor for magnetic-north.



AIRFRAME CONFIGURATION

Naza supports nine different airframe configurations:

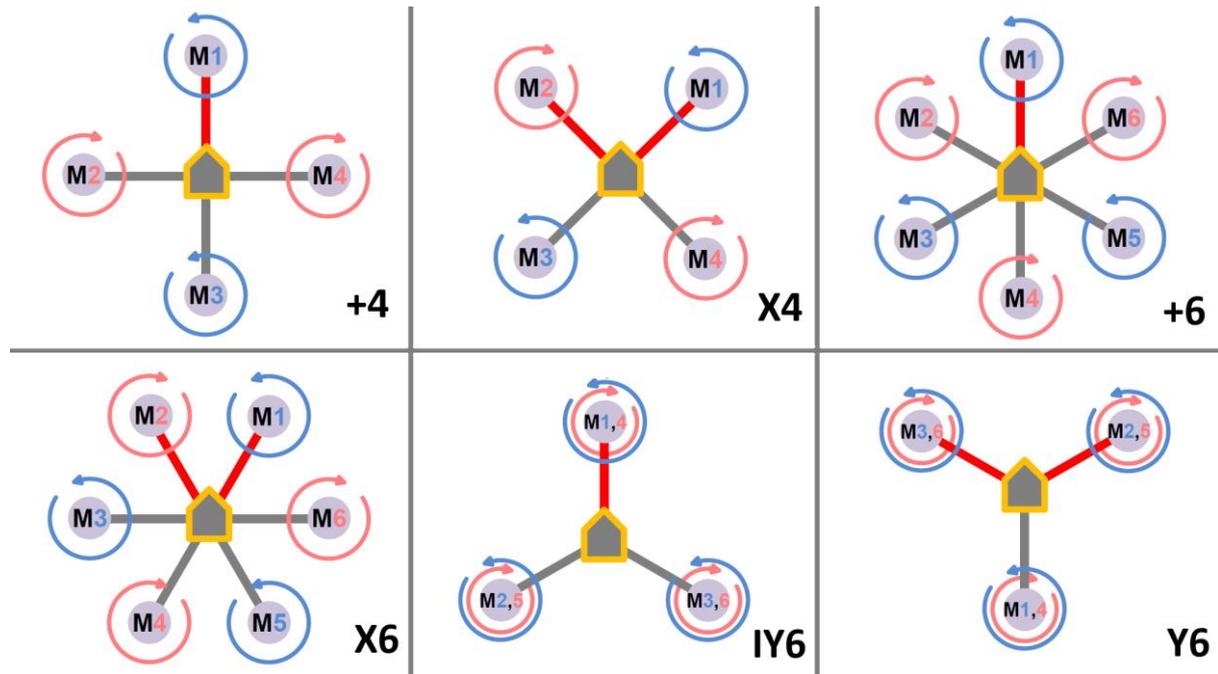
- Quad (Plus or Inline Configuration)
- Quad (X Configuration)
- Hexa (Inline Configuration)
- Hexa (X Configuration)
- Y6 (Reversed)
- Y6 (Traditional)

- X8 (X Configuration)
- Octa (Inline Configuration)
- Octa (X Configuration)

We are only going to cover the Quad, Hex and Y configurations.

Each configuration considers the front of the multi-copter to be in slightly different positions and the motor orders vary.

You must be extremely vigilant and make sure you get the motor order and rotation exactly as shown below:



If the motor is spinning in the wrong direction simply swap over two of the wires going from the speed controller to the motor, this will reverse its direction.

RADIO SETUP & FLIGHT MODES

These steps may seem trivial but they are massively important, if the Naza is not satisfied that the sticks are all centered and move in the correct direction it will refuse to initialise and you will have a useless brick sat in front of you.

Furthermore your flight mode switch must be carefully setup so that each of the three switch positions (yes you need a three position switch, we'll cover more on why this is important later) make each of the modes illuminate blue, again it's VERY important that they turn blue and stay blue otherwise you risk your Naza randomly engaging fail-safe.

TX / RADIO CONTROL CALIBRATION

Note: This step is absolutely crucial if you do not get this right your Naza will either refuse to initialise or worse still it will be erratic in flight and therefore dangerous!

First thing to check is that you have no trims or sub-trims set on your radio, so all of your stick trims should be centered and your sub-trims set to zero. **At no point should you ever use your**

transmitter to trim out your multi-copter, if you do introduce trims you will confuse the Naza and prevent it from arming.

As a side note if you do experience any problems with wandering that you think could be fixed with trimming your multi-copter you should check the following:

1. Your centre of gravity is correct.
2. You've input the correct values for the Naza's position on the craft.
3. You have got the Naza as close to the centre of the craft as is practical (notice I don't say possible as its ok to have it a little be off centre if it makes the build easier).

CALIBRATING THE STICKS

Now you should be ready to calibrate the sticks.

Stick Movement	Channel Result
Throttle Up	Bar moves RIGHT.
Throttle Down	Bar moves LEFT.
Rudder Left	Bar moves LEFT.
Rudder Right	Bar moves RIGHT.
Aileron Left	Bar moves LEFT.
Aileron Right	Bar moves RIGHT.
Elevator Forward (Nose Down)	Bar moves RIGHT.
Elevator Back (Nose Up)	Bar moves LEFT.

FLIGHT MODES

There are three different user selectable flight-modes: GPS, Attitude and Manual. In addition to these flight modes there is also a fail-safe which can be configured to either return the craft to where it was launched from or auto-land in the current positions.

On the Naza V1 & V2 fail-safe can also be assigned in the place of the Manual flight mode to allow you to re-call the craft at the flick of a switch.

Flight Mode	Description
GPS	This is GPS based stabilisation or loiter, it will hold the craft in the current position (using GPS as a reference) until you move the sticks.
Attitude	This is basic stabilisation, it will hold the craft in the current attitude (i.e. keep it level) until you move the sticks.
Manual	Full on manual mode for aggressive of 3D flight, this is only intended for expert pilots. There is no stabilisation.
Fail-safe	Returns the craft to home or auto-lands depending on your fail-safe settings.

This is bad:

Control Mode Switch



This is good:

Control Mode Switch

