



Emax Hawk 5 Review

Emax is probably best known for their motors, they've released a series of pretty successful mini quads in the past the Nighthawk, then Babyhawk and the Babyhawk-R, both very popular at the moment. Emax Hawk 5 presents an excellent option for both pro racers and new pilots.

There are lots of superb ready to fly quads available that are well SPEC really well built and incredibly well priced so how will this new

Hawk 5 stand up in this busy space in the market? We'll try to cover all needed information about this latest BNF configuration from Emaxmodel.

Quick Navigation

[Unboxing](#)

[Features & Specifications](#)

[Emax F4 Magnum Tower](#)

[Frsky XM+ Receiver](#)

[VTX](#)

[ESC](#)

[Frame & Build Quality](#)

[Motors](#)

[Avan Flow Propellers](#)

[FPV Camera](#)

[Battery Mount](#)

[Conclusion](#)

UNBOXING

It's an elegant package as we've come to expect from Emax. Let's take a closer look at what's in the box:



We've got the usual gear:

- Frsky XM+, F4 Magnum All-in-one Tower and Foxeer Micro instruction manuals
- Few bolts and nuts
- OSD control for the camera
- 2 sets of Avan Flow props
- 2 Pagoda V2 VTX antenna's, left hand circularly polarized
- Extension lead SMA to UFL
- Spare Arm, very useful
- Some tie wraps

First impressions straight out of the box; this is very very nicely built, very strong and solid, excellent.

Check **Emax Hawk 5** now on [Banggood](#), [Amazon](#) or [Gearbest](#).

FEATURES & SPECIFICATIONS

So let's take a closer look at this in more detail. The Hawk 5 is the newest five inch to 10-millimeter X-Frame Quad from Emax.

It is the first Emax quad aimed squarely at the racer market using high spec components. I'm sure this is their response to the other great [FPV racing drone configurations](#) being released from other manufacturers such as Diatone, Holybro and others.

EMAX F4 MAGNUM TOWER

It uses a flight stack connected together with pins and it's got very few wires, arms are incredibly thin but very strong.

The electronics are built around this [Magnum F4 Flight Tower](#).

This is a very neat and tidy stack, with pinned board interconnects between each of the PCBs. The mainboard combines an F4 flight controller and LC filter, a 5-volt regulator, black box and buzzer. It uses an STM32F405 MCU and the popular MP6000 gyro, flashed with Beta Flight 3.30. This has got an OSD as well.

The integrated LC filter with the 5 Volt/3A voltage regulator. Means clean power for all the other components and boards. Then the black box flight recorder has got 16 MB flash memory, and there's a buzzer mounted on the PCB.

On the PCB, because the stack is pinned together with connectors, there's hardly any wires. Other than the camera, and the main wires to the [quad motors](#) from the 4in1 ESC, there's nothing to be seen really. This makes it an incredibly neat build and the quality of the soldering is excellent.

Frsky XM+ Receiver

The Magnum Tower also includes a Frsky XM+ receiver. Although it's very small, the downside of this is you don't get telemetry, but you do have the Beta Flight OSD to show your battery voltages in your [FPV goggles](#). And it would be nice to have seen them using something like XSR receiver which is smart port enabled with full duplex transmission for telemetry. But I guess they don't see it being necessary for racing quad.

VTX

The VTX has 48 channels which are switchable from 25 mW to 200 mW which is perfect for race events.

It comes with a lightweight dipole whip antenna, but you also get this 80-millimeter extension with an SMA connector to U.FL, so that you can use your own antenna.

Additionally, there's a couple of Pagoda V2 antennas in the box which is a really nice touch.

But watch out though these are both left hand polarized, they didn't provide one of each; left hand and the right hand polarized. To fix them on you'll only need to add the extension, flip it onto the board and tie wrap under.

ESC

And at the bottom of the stack is a 30 a 4in1 ESC and current sensing board running BLHeli_S firmware - they support D Shot, Multi Shot and One Shot 125, so take your pick. But I suspect it will probably be D Shot 600. Emax claims that this can run 6s with a lower kV motor.

FRAME & BUILD QUALITY

The build quality is outstanding. It's got nice tidy wiring and good solder joints. I pulled this apart before the review to take a look under the hood and I'd have been thrilled if I built this.

The frame is a true X and it's amazingly solid and stiff. It uses the regular sandwich style of frame construction with top and bottom plates. This means it's very stiff and it's easy to change the arms if you break one.

The frame and the arms are nicely finished, and the arms have got a good amount of extra carbon outside the motor diameter here and this provides lots of crash protection. The camera is fairly well protected and easy to adjust with 2 mm dome head bolts on each side.

Other than the motor bolts all the bolts are countersunk and easy to get to, it's got a very nice finish. And each arm has got two bolts and they're easy to change without having to pull the whole thing apart.

The thickness of the arms is 4x5 mm by 9mm; these are pretty low drag arms. The quality of these is pretty good. And although they don't have sharpened edges, they're not sharp and there's some good degree of crash protection to stop the bell of the motor getting damaged.

Top plate is 2 millimeters thick and these interesting reinforcing braces along the side here. Those are 1.5 mm.

On the bottom, you've got the standard two plates sandwiching the arms. I have a good feeling this will be pretty tough to break in a crash.

The top plate has got a small cutout so you can see the VTX channel and the channel selector button. Although it's quite small here, is nice and easy to get to on the side.

And one thing I've noticed with most BNF quads is there's always something silly that hasn't been quite finished off: the buzzer isn't connected or the battery strain relief isn't there, and similar details which can frustrate you along the way.

But with the Hawk5, everything's just ready to go. The battery wires have got some strain relief with a cable tie, and the buzzer is integral to the flight stack and the flight stack uses these nice flexible vibration mounts.

They've even fixed a 470 microfarad capacitor across the power supply connectors on the PDB to suppress noise. It's a very nice touch, and very nicely finished.

Motors

And as you'd expect from EMAX they've used some of these powerful LS 2206 2300 kV Lite Spec racing motors, and it'll be interesting to see how these nuts up using their new props. EMAX achieved to combine such requirements into a motor that can meet all aspects by reducing the weight while maintaining the durability and performance in check.

Avan Flow Propellers

EMAX make quite a lot about these props. They're 5x4.3x3 and are designed to give a constant 4.3 pitch across the whole blade, which apparently gives a linear control feeling across the whole throttle band.

Most of the weight is around the hub which means it's got a low moment of inertia, basically that makes a very responsive propeller, because the way it is all centered around the hub.

FPV Camera

For the camera they've used the low latency Foxier Arrow Micro V2. It's a 600 TVLine CCD camera with a wide-angle 150-degree lens which is perfect for fast racing.

Battery Mount

One clever feature of this frame is that you can choose where you want to mount the battery on the top or on the bottom.

Credit: Emax USA

Everyone's got their own preference and this is the first time I've seen this. It doesn't solve the problem of who's right: [top mount or bottom mounters](#), there's arguments for each way and what flies best for Acro and what flies best for racing.

Personally I think it's what works best for you. And the Hawk 5 gives you this option. In fact you could easily do it back-to-back test if you wanted to.

If you bottom mount the battery there's plenty of room on the top for a GoPro. But there's no mount so you'll have to find your own. If you're going to use this to race you probably don't want the extra weight of a GoPro on the quad.

Weight without the battery is near enough 260, with props on it's going to be 270 grams, which is what the spec says.

CONCLUSION

On the face of it this is an outstanding and properly complete mini quad that will get you racing straight out of the box.

Spares seem to be readily available although I suspect you won't be able to buy individual boards from the F4 tower.

Cost-wise this is only around 250 dollars, which is slightly cheaper than most of the BNF quads in this 5 inch range. But it doesn't compromise on parts, they're very high spec so it's great value for money which is always a good thing.

You just need a [transmitter](#), some [goggles](#) and a few lipos and you're good to go

Racing. Hope you found this Emax Hawk 5 Review helpful so you can make a proper decision that satisfies your needs.

DN

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