Subject: 3D Printed Multirotor Aircraft
Posted by rcshop on Fri, 06 Jan 2012 23:18:36 GMT
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Over the holidays, I received my prototype fully 3D printed Multirotor Aircraft Frame.

Every thing was printed on Shapeways, except for the mounting hardware and electronics, of course.

File Attachments

1) kodak 12-2011 178.jpg, downloaded 904 times
2) kodak 12-2011 218.jpg, downloaded 907 times
3) kodak 12-2011 215.jpg, downloaded 870 times
4) kodak 12-2011 198.jpg, downloaded 884 times
5) kodak 12-2011 301.jpg, downloaded 889 times

Subject: Re: 3D Printed Multirotor Aircraft
Posted by underitall on Sat, 07 Jan 2012 14:51:52 GMT
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Cool, looks good.
What is that board, something like an Arduino using an accelerometer?
Thanks,
Tom.

Subject: Re: 3D Printed Multirotor Aircraft
Posted by rcshop on Sun, 08 Jan 2012 01:26:57 GMT
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It's a ArduPilotMega (APM), for the Arducopter. The blue board you see is the IMU board sitting on top of the APM that under it. It's got accelerometers, gyros, gps, and magnetometer.
If youre interested, check out diydrones.com

I have a blog there, if you want more information:
http://diydrones.ning.com/profiles/blogs/introducing-firefly-mark-one-first-3d-designed-and-printable-quad?commentId=705844%3AComment%3A750963&xg_source=msg_com_blogpost

I plan to make the frame available for sale soon, in this shop.

Cheers!

Subject: Re: 3D Printed Multirotor Aircraft
Posted by underitall on Sun, 08 Jan 2012 11:40:58 GMT
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Hi, thanks for that, looks like a good bit of kit.
I've bookmarked the site, looks good.
Thanks,
Tom.

Subject: Re: 3D Printed Multirotor Aircraft
Posted by rcshop on Sun, 08 Jan 2012 21:25:50 GMT
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Thanks! I'll post an update and PM, when I'm ready to put it on sale. Should come in just under $100 for the kit. All that's needed to complete the kit is some mounting hardware and the electronics.

Subject: Re: 3D Printed Multirotor Aircraft
Posted by InCrafting on Mon, 09 Jan 2012 20:26:00 GMT
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this is what I've always dreamed to have I'd really like to see it flying. By the way, do you have any estimates as to how much the motors and electronics would cost?

Subject: Re: 3D Printed Multirotor Aircraft
Posted by rcshop on Mon, 09 Jan 2012 21:36:54 GMT
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InCrafting wrote on Mon, 09 January 2012 20:26this is what I've always dreamed to have I'd really like to see it flying. By the way, do you have any estimates as to how much the motors and electronics would cost?

My motors are in the mail, so hope to be flying in a couple of weeks. Flight video to be added,

once I get it going.

Check out my blog on DiYDrones for a detail list of electronics.

http://diydrones.ning.com/profiles/blogs/introducing-firefly
-mark-one-first-3d-designed-and-printable-quad?commentId=705
844%3AComment%3A750963&xg_source=msg_com_blogpost

The 4 motors and speed controllers should cost about $50. Depending on what flight control board you use, it could range from $60 to $200. DiYDrones store has a new board now that is $199, and has everything you need for autopiloting the craft here:

https://store.diydrones.com/APM_2_0_Kit_p/br-ardupilotmega-0 3.htm

Or you can get a very basic one, with gyros only:

http://www.kkmulticopter.kr/index.html?modea=vieweng&mc_
selected=MultiCopter&sc_selected=KKMulticopter&sn=fl ycam_blue&id_no=93

Subject: Re: 3D Printed Multirotor Aircraft
Posted by InCrafting on Mon, 09 Jan 2012 22:43:59 GMT
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thanks for the reply. Seems to be quite pricey in comparison to the one by parrot (
http://www.amazon.com/Parrot-AR-Drone-Quadricopter-Controlle
d-Android/dp/B003ZVSHB0/ref=sr_1_1?s=electronics&ie=UTF8 &qid=1326148772&sr=1-1)

update: actually the end price would be about the same, but without ability to control it via smartphone's accelerometer (if I understood it correctly)

Subject: Re: 3D Printed Multirotor Aircraft
Posted by rcshop on Tue, 10 Jan 2012 02:06:59 GMT
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InCrafting wrote on Mon, 09 January 2012 22:43thanks for the reply. Seems to be quite pricey in comparison to the one by parrot (
http://www.amazon.com/Parrot-AR-Drone-Quadricopter-Controlle

d-Android/dp/B003ZVSHB0/ref=sr_1_1?s=electronics&ie=UTF8 &qid=1326148772&sr=1-1)

update: actually the end price would be about the same, but without ability to control it via smartphone's accelerometer (if I understood it correctly)

These are two different class of quads. The Parrot is very user friendly, but not an open system that can be reprogrammed. Good for indoor flying in close proximity to the phone. The phone is actually a limitation.

The Arducopter controller I recommended has onboard accelerometer, and gyros for stabilization, with built in electronic compass for heading lock. It's got GPS for defining autonomous mission waypoints, and barometer for high altitude hold. Two different class of quadcopter really. The firmware is open sourced, so you can tinker, if so inclined.

You can also go the low end route and get the KKmmulti board, for $100 (or cheaper) and just have gyros.

From a frame point of view, I can add all the mount points for the Parrot Drone parts, and mount them on my frame, once the foam falls apart.

That's the beauty of using 3D printers!

Subject: Re: 3D Printed Multirotor Aircraft
Posted by InCrafting on Tue, 10 Jan 2012 20:57:37 GMT
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rcshop wrote on Tue, 10 January 2012 02:06autonomous mission waypoints, and barometer for high altitude hold
wow.. now it sounds much cooler to me!!

Subject: Re: 3D Printed Multirotor Aircraft
Posted by rcshop on Tue, 24 Jan 2012 20:06:42 GMT
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Ok folks, I have successfully flow a version of this frame.

Here's a video on the first flight:

http://www.youtube.com/watch?v=hAg4sKyz_pg

More details including parts list to complete the build is in this blog on DiYDrones:

http://diydrones.com/profiles/blogs/first-flight-of-3d-print ed-firefly-mark-one-quadcopter-frame

PM me if you are interested in building this amazing aircraft, and need to know where to start.

Cheers,
Ellison