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[mode="copter"]. mode Loiter,RTL,AUTO mode [mode]
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1. ** ** + **
2. PDB ESC ESC
3. PDB ESC
4. Replace the PDB and ESCs with a 4-in-1 ESC because they tend to produce less interference probably because their wires are shorter and closer together and they also have an aluminum plate on top which may help reduce the interference.
5. Add aluminum shielding (even gutter tape) around the wires from the ESC to the motors may reduce the AC interference. Aluminum will not help reduce the primary DC interference from the PDB, ESCs and the wires connecting them.

../../../../images/3281_dimg2.jpg

Maxwell's Equations - The Magnetic Field on the Axis of a

Current Loop

Geometric details (from [this web page.](#))
[loopa](#)

The application of the [Biot-Savart law](#) on the centerline of a [current loop](#) involves integrating the z-component.
[image4](#)
The symmetry is such that all the terms in this element are constant except the distance element dL , which when integrated just gives the circumference of the circle. The magnetic field is then:
[image5](#)

There are 3 things to get from this drawing and the equation for the magnetic field B as you move away from a current loop along the Z axis:

1. The magnetic field increases as a function of the enclosed loop area πR^2
 - Big loop = big magnetic field
 - Reduce the magnetic field by twisting the loop to close it. aka twist the wires together and keep your return path close to the source
 - In the case where you have a PDB and 4 ESCs you have 4 loops that start at the Deans connector on the PDB, go out to the ESC and return back to the Deans connector. In the case of the 4 in 1 ESC the current flow is much more concentrated in one area and you don't have the big loops so consequently you decrease the magnetic field.
2. The magnetic field increases as a function of current
 - Where there is the option, you can deliver the same power and decrease the magnetic field by increasing the voltage and decreasing the current.
3. The magnetic field decreases as a function of the cube of the distance
 - It is more complicated when you are close to the loop but when $z \gg R$ the denominator goes to z^3

There is one more thing and that is that the direction of the magnetic field depends on the direction that the current flows so when you rotate a battery it changes the magnetic field produced by the current flowing in the battery.

It can't be stated enough that minimizing the enclosed loop areas and moving the compass away from the current will help things work better and "yes", power distribution boards with big circular thick high current PC traces on them produce significant semi-spherical fields as large or larger than their diameter.

Natural and Artificial Magnetic Anomalies Warning

- # GPS for yaw

- Configure GPS for yaw

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