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rs2k / **raceflight**

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# License violation on binary release #225

[New issue](#)
Closed
mlyle opened this issue 3 days ago · 5 comments


mlyle commented 3 days ago



@hydra @rs2k

Despite claims of a "clean rewrite", the current code clearly infringes the GPL from Cleanflight and is obviously derived code. Here's some disassembly of the current Revolution binary:

```

21874:    041b    lsIs    r3, r3, #16
21876:    0c1b    lsrs   r3, r3, #16
21878:    f043 0330    orr.w  r3, r3, #48 ; 0x30
2187c:    8013    strh   r3, [r2, #0]
2187e:    8813    ldrh   r3, [r2, #0]
21880:    b29b    uxth   r3, r3
21882:    f043 0340    orr.w  r3, r3, #64 ; 0x40
21886:    8013    strh   r3, [r2, #0]
bit_h_reset
21888:    2180    movs   r1, #128 ; 0x80
mpu_ra_pwr_mgmt_1
2188a:    206b    movs   r0, #107 ; 0x6b
2188c:    f007 ff44    bl     0x29718
attemptsRemaining = ... 21?
21890:    f04f 0915    mov.w  r9, #21
21894:    2096    movs   r0, #150 ; 0x96
delay 150
21896:    f010 f989    bl     0x31bac
2189a:    4632    mov    r2, r6
2189c:    2101    movs   r1, #1
MPU_RA_WHO_AM_I
2189e:    2075    movs   r0, #117 ; 0x75
218a0:    f007 ff1a    bl     0x296d8
218a4:    f89d 3064    ldrb.w r3, [sp, #100] ; 0x64
MPU6000_WHO_AM_I_CONST
218a8:    2b68    cmp    r3, #104 ; 0x68
Subtract 1 from attempts remaining
218aa:    f109 39ff    add.w  r9, r9, #4294967295 ; 0xffffffff
218ae:    d025    beq.n 0x218fc
218b0:    f019 09ff    ands.w r9, r9, #255 ; 0xff
back to top of loop
218b4:    d1ee    bne.n 0x21894
218b6:    aa0e    add   r2, sp, #56 ; 0x38
218b8:    9204    str   r2, [sp, #16]
218ba:    aa0f    add   r2, sp, #60 ; 0x3c
218bc:    f894 3230    ldrb.w r3, [r4, #560] ; 0x230
218c0:    9202    str   r2, [sp, #8]
218c2:    f7ff b967    b.w   0x20b94
218c6:    460a    mov   r2, r1
218c8:    9109    str   r1, [sp, #36] ; 0x24
218ca:    210c    movs  r1, #12
218cc:    9105    str   r1, [sp, #20]
218ce:    210b    movs  r1, #11
lots of stack manip
218fc:    4632    mov   r2, r6
218fe:    2101    movs  r1, #1
# MPU_RA_PRODUCT_ID
21900:    200c    movs  r0, #12
21902:    f007 fee9    bl     0x296d8
21906:    f89d 3064    ldrb.w r3, [sp, #100] ; 0x64
# 0x14 to 0x18 is OK (REVC4..REV D8)
2190a:    2b14    cmp   r3, #20

```

## Projects

None yet

## Labels

None yet

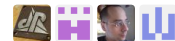
## Milestone

No milestone

## Assignees

No one assigned

## 4 participants



## Notifications

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```

2190c:    d3d3            bcc.n  0x218b6
2190e:    2b18            cmp    r3, #24
21910:    d902            bls.n  0x21918
# 0x54 to 0x5a is OK. (REVC4.. RevD10)
21912:    3b54            subs  r3, #84 ; 0x54
21914:    2b06            cmp    r3, #6
21916:    d8ce            bhi.n  0x218b6

```

Vs.

[https://github.com/cleanflight/cleanflight/blob/master/src/main/drivers/accgyro\\_spi\\_mpu6000.c#L158](https://github.com/cleanflight/cleanflight/blob/master/src/main/drivers/accgyro_spi_mpu6000.c#L158)

It goes on to lay out a very similar structure with function pointers followed by the gyro scale, etc. There are many ways to do this, but the Raceflight code chooses to do the exact same operations in the exact same order with the exact same constants.



**webbbn** commented 2 days ago



Coment #9 from [this issue](#) also raises questions about whether this was truly started as an independent work, or if it's a derivative product:

... We plan to replace all the MSP stuff in the next couple weeks with our new core, so it would be nice to know about any issues that make it less compatible.

There's also a serious question of how the developer could possibly be following "clean room" procedures when they clearly have intimate knowledge of the Baseflight/Cleanflight codebase.

<http://digital-law-online.info/lpdi1.0/treatise27.html>



**mlyle** commented 2 days ago



There's also a serious question of how the developer could possibly be following "clean room" procedures when they clearly have intimate knowledge of the Baseflight/Cleanflight codebase.

Yes, and you can't clean-room one piece at a time, reintegrating it with the main work, while giving it out to semi-public release and be OK.

Note that I didn't go searching all over the place for derivative code. This is the first function I decompiled because I knew it would be easy to find.



**digitalentity** commented 2 days ago



Also simply looking at the strings in the code you instantly notice mixer list that include HELI and AIRPLANE mixers, also you have strings for ancient sensors like BMP085 and ADXL345 (obviously for CLI but what's the point in implementing those if they use the fancy "super secret gyro"). Same for GPS-related PID names, same names for features in CLI, obviously reused blackbox etc.

I just opened two binaries side by side and strings look amazingly similar.



**proggod** commented 2 days ago

Collaborator



Before this all gets blown out of proportion after [@rs2k](#) catches up on some sleep him and [@hydra](#) will both make a statement, talk about release time lines for our code, whats being released etc, before our actual release of our flight controller. So stand by this week for details on that. I can tell you we are releasing code, and we are integrating a lot of code into cleanflight over the course of the next few weeks, so we don't need to go on a witch hunt. I can also tell you that we have an entirely new code base and core being released as well. We are working together to make sure code bases play nice with everything, and cleanflight gets all the benefits of the raceflight development. This has been planned for some time, and has not been made public.



**proggod** closed this 2 days ago



**hydra** commented 2 days ago



The code is GPL, there's no arguing with that. My feeling is that the raceflight guys should have kept their binaries private until they were ready to release the source as well and that was a mistake, one that I have communicated to them personally. I too would like to be able to see full source for each release made via the raceflight slack channel which contains any of the Cleanflight codebase.

Anyone that has their code current in any version of raceflight that has been distributed in binary form up to now are of course entitled to do what they must if they are not happy.

That said I'm not going to burn any bridges as I'm looking forward to the future and to see how the raceflight guys can contribute to Cleanflight, hopefully this situation will be resolved so that everyone is happy.



**mylie** commented 2 days ago



Before this all gets blown out of proportion after **@rs2k** catches up on some sleep him and **@hydra** will both make a statement, talk about release time lines for our code, whats being released etc, before our actual release of our flight controller.

You're distributing binaries on the internet; you've got to ship source code at the same time, not when you feel like it. GPL3 is quite clear on this.

At this point anyone who is a copyright holder in cleanflight can choose to DMCA you or litigate against you. Just up to them whether they feel like it's worth it.

And beyond that-- how lame. You mock people in your string table (**@borisbstyle**, **@betaflight**):

```
Sorry Boris, this ain't betaflight  
Only original code allowed.
```

While being a bunch of plagiarists who aren't giving back. You're happy to take everyone else's code for free, but will you share yours? Naaaah.



5



**tracernz** commented 2 days ago



Anyone that has their code current in any version of raceflight that has been distributed in binary form

There are a great many names on that list dating back to the beginning of MultiWii..



**HABTomas** commented 2 days ago



Hi Guis

You are all doing great work with something that you love , work together have fun!!! This shit is only hurting you and the hobby, it's not fun at all! So thank to you all for creating something so great for all of us that don't understand a shit about programing!!

So have fun!!



**digitalentity** commented 2 days ago



**@proggod**, **@rs2k** do you think deleting comments is going to make you look better?



7



DieHertz commented 2 days ago • edited



@digitalentity This obviously belongs here:  
[Streisand effect](#)



glowtape commented 2 days ago • edited



Either way, you have one of the previous contributors clearly desiring release of the source code. Since you've admitted over at MWOSD that there's still at least their GPL code present in your codebase (--edit: well, ref wasn't deleted after all, too dumb to read), you're kind of bound into complying. So how about it?



WillManidis commented 2 days ago • edited



Why was the issue closed? This is clearly unresolved.



mlyle commented a day ago



Before this all gets blown out of proportion after @rs2k catches up on some sleep him and @hydra will both make a statement, talk about release time lines for our code, whats being released etc

We're all still waiting.



joshuabardwell commented 23 hours ago



I have an announcement, and @proggod has asked me to make it here first.

@proggod has been looking for someone that both the RF devs and the community can trust to do an audit of the RF code, to help answer the question of whether a GPL violation is occurring. The auditor will receive full access to the RF github repo, so he has to be someone who both the RF devs and the community can trust.

The person that has been settled on is Jonathan Davis, Skitzo.

When he's not being a Master of Flow, Skitzo is a game developer, so he's got the programming chops for the job. We all know that Skitzo switched over to RF, but he's not involved in the development of RF, and as far as I can tell, he's a straight shooter. For the record, @proggod asked me to do the audit, specifically because I am a big fan of Betaflight and not associated with the RF project in any way, but I don't feel that I am a skilled enough programmer to perform the audit.

The reason I'm making the announcement and not @proggod or @rs2k is because @proggod asked me to interview Jonathan for the "big reveal" of his findings and to help disseminate information about the audit through my public channels. Rather than Jonathan reporting to @proggod and maybe the info getting tainted or shaped, Jonathan will report to me directly, and @proggod and all the RF devs will hear the results on my channel, the same as everybody else.

This information isn't secret--in fact, it's public--but I would love to get any feedback that y'all have here before I make a wider announcement. What do you think of this idea?



joshuabardwell commented 23 hours ago



PS: During the announcement interview, I would also like to include someone who is an authority on the GPL, so that the right questions can be asked, to determine if the project is violating the GPL. If any of you have any suggestions about who that might be, contact me with them. Obviously, an air of impartiality is

important...



**digitalentity** commented 23 hours ago · edited



With all due respect, I can't say I agree.

Skitzo is flying RF and thus wants that firmware to continue, therefore he's not unbiased exactly like any of RF/CF/BF/etc devs or pilots.

For a trustworthy audit we need somebody completely independent and not interested in either CF or RF or two auditors one of which is affiliated to RF, other - to CF to provide two independent reports.



4



**mlyle** commented 23 hours ago



**@joshuabardwell** --- very clearly a GPL violation is occurring. The first function I decompiled/reversed is clearly derived from Cleanflight. The exact same delay intervals, order to check registers, acceptable MPU version IDs are the same range; the structure filled with constants about scale are used. The exact same floating point constants are used and not their reciprocals or other valid choices that would result in the same behavior. They're placed into similar structures and not other layouts of memory.

There are thousands of possible design choices on how to do this, and somehow Raceflight has come to the exact same choices-- when written by developers that have access to the Cleanflight sources and experience working on that source code base. This makes it very clear that Raceflight is derived from Cleanflight.

For reference, I am not involved in Cleanflight or Raceflight; I am a developer of dRonin-- and I have the utmost respect for the work Betaflight and Cleanflight are doing.



9



**mlyle** commented 23 hours ago



Also I would just like to state that I am disturbed that there is a seeming-attempt to be transparent here when comments from leaders of other related projects have been deleted by Raceflight maintainers in this very thread. That does not bode well for the trustworthiness of this process.



9



**tracernz** commented 22 hours ago



So the purpose of the audit is to determine the extent of the violation, because that seems kind of irrelevant? :/



2



**digitalentity** commented 22 hours ago



**@rs2k @proggod**

How about releasing the source? If it's 100% your authentic work you can chose to release it under a license that it prohibiting derivatives of the code (in a sense not an open-source license) - you'll be able to enforce that in court if you have to.

But if you have some code derived from CF/BF/whateferFlight this be what GPL demands.



**joshuabardwell** commented 22 hours ago



**@mlyle** I'm not really the one you need to be arguing with. I'm neither a good enough coder, nor knowledgeable enough about the GPL to say whether or not a violation is occurring. I'm just providing a venue for findings to be announced, and hopefully to generate some discussion of the findings. If you are an expert on the GPL and can make a convincing argument that a violation is occurring, let's talk about you making that argument on my channel, where it can be heard.



**digitalentity** commented 22 hours ago



PS: You can publish only hardware drivers, R/C RX code, MSP code, CLI code (those are 99% unrelated to flight performance but they are a major (really major) part of the code.



**digitalentity** commented 22 hours ago



**@joshuabardwell**, I think **@mlyle** got a crystal clear argument in the first post of the thread. The only thing that was required from RF to prove him wrong was to throw us a bone - give us the source code of that driver so we could see for ourselves that it's not derived from CF. Apparently at the moment this won't be enough...



**joshuabardwell** commented 22 hours ago



BTW, for the record, I have a Bachelor's in CS from GA Tech, and I have been a hobby programmer basically my whole adult life. So it's not like I'm oblivious here, but the auditor has to be at least as good as the people he's auditing, and I'm not. I also know a bit about the GPL, but the intricacies of exactly what might constitute a violation, I don't feel qualified to judge in a case like this even if to others, it's cut-and-dried. The intensity with which some people feel that it's cut-and-dried actually makes me retreat more into a question-asking mode rather than a statement-making mode.



**seaweeduk** commented 18 hours ago



Have to say I agree with others that Skitzo isn't a particularly unbiased source for auditing this seeing as he's already flying it and has a vested interest in it. I'd also like to see some more information regarding his credentials as a programmer.



**tracernz** commented 18 hours ago



**@rs2k @proggod** You guys should probably have a good read (or three) of <https://www.softwarefreedom.org/resources/2008/compliance-guide.html>. You will find there are many things you didn't know. Section 5.2 (which presumably you are currently in violation of since you haven't ceased distributing the derivative work) should be now of particular interest. 🙄

👍 1



**dexX7** commented 17 hours ago



**@borisbstyle**: users subscribed to this thread should receive new messages with email, so even if messages are deleted, they are certainly not lost.



**seaweeduk** commented 17 hours ago



Can confirm I see Boris' posts in my email inbox, it's disgusting that they are being deleted this whole thing is coming across as very shady indeed.

**digitalentity** commented 17 hours ago



Heh, and another message from Boris they removed.

Have to say I agree with others that Skitzo isn't a particularly unbiased source for auditing this seeing as he's already flying it and has a vested interest in it. I'd also like to see some more information regarding his credentials as a programmer.



tracernz commented an hour ago

@rs2k @proggod You guys should probably have a good read (or three) of <https://www.softwarefreedom.org/resources/2008/compliance-guide.html>. You will find there are many things you didn't know. Section 5.2 (which presumably you are currently in violation of since you haven't ceased distributing the derivative work) should be now of particular interest. 😊



borisstyle commented 22 minutes ago

Not much point of posting as all my messages get deleted, but someone will read it probably :D.  
Who ever reviews. Don't forget to go historically though every released binary as if this would be the case it is important to know how many times GPL was violated.



Write Preview AA B i [formatting icons]

Projects: None yet  
Labels: None yet  
Milestone: No milestone  
Assignees: No one assigned  
13 participants [avatars]  
Notifications: Unsubscribe  
You're receiving notifications because you were mentioned.



glowtape commented 17 hours ago • edited

This is a farce beyond imagination. The first reply to this issue links to some other Github project where one of the owners of the Raceflight project admitted that there is still code from another GPL project in Raceflight at the time he made that comment. Up until that point there were beta releases quasi-publicly available. There's nothing to discuss or review here. Up to at least that date of comment, the source code to the relevant beta releases has to be made public.

@digitalentity There isn't selective releasing of source code. Any bit of GPL3 code in your project requires you to release ALL of it.

@joshuabardwell It almost reads like you're trying to ignite a smoke bomb. There's nothing intricate here. By their own admittance there was GPL code until at least 11 days ago, there's been beta builds quasi-publicly available (I have several .bins), yet there's no source code. This is a clear violation.



digitalentity commented 16 hours ago

@glowtape  
The latest binary release of RF has a date tag of "Sep 22 2016", however the last commit to this repository was made on Jun 14 by @proggod. So where's the code of the last released version?






digitalentity commented 16 hours ago

@glowtape I must have misunderstood you, sorry. I agree, all GPLed code should be released. I just say if they did a rewrite they can at least give us samples of the code that are not affecting flight performance so we could compare and see for ourselves.



seaweeduk commented 15 hours ago

Here's the first post from Boris they deleted too, for anyone who missed it

 **borisbstyle** <notifications@github.com> 20 Sep (2 days ago) ☆    
to rs2k/raceflight, me, Manual ▾

[@proqqod](#) I wondered why I didnt get a reply on that CF issue last time when I mentioned rewrite :D. Just out of interest....why lying to everybody about the rewrite? Wasn't it just easier to write your own code when going to this direction? I mean with 25 year experience as code teacher you are capable of writing own code right?  
I see you started selling own boards. I would expect you couldnt wait long enough to rewrite and decided to clone open source in the meanwhile for quicker time on the market in this one.



**mashu** commented 13 hours ago 

So Skitzo after whom flight mode is called is going to be unbiased external auditor who is clearly going to bend reality for us. Us is those who dont live in this another dimension where clear GPL3 violations are debated ? This is getting more absurd every minute;)



**joshuabardwell** commented 12 hours ago 

[@glowtape](#) maybe this is obvious to people with more experience with the GPL. I'm still in the "coming up to speed" process on the facts of this issue. If you or anybody else has facts that you think need to be a part of the story, please get in touch with me.



 **digitalentity** commented 11 hours ago 

Joshua, I think [@glowtape](#) is trying to say that Skitzo as an auditor is going to be biased and his report won't prove anything.



Violating GPL is using the code to make derivative work and not distributing the source along with it. There is evidence that RF might have used the CLI, Blackbox and gyro driver from Cleanflight, therefore they are obliged to publish the whole code as GPL doesn't allow to combine open source and proprietary code.



**joshuabardwell** commented 11 hours ago 

[@digitalentity](#) I feel like one of the things that I contribute to the community is to translate complicated technical topics for general consumption. It feels like that ability might apply to this situation. Can we talk about this more, one-on-one?



 **digitalentity** commented 11 hours ago 

Can you email me your Skype (my email is in Github profile). I'll be online in about 20 minutes.



**glowtape** commented 9 hours ago 

I haven't actually said anything in regards of Skitzo.

What I however am saying is that there's more than enough pointing towards a violation that pretending that things are more intricate is a little disingenuous.





glowtape commented 9 hours ago • edited



I mean, what is there even to discuss? @myle showed strong evidence that an old GPL'ed function is still present and @proggod of Raceflight itself said over on the MWOSD project that the MSP code still has to be replaced by their own implementation (it's certainly not a wild assumption that this is still the old Cleanflight implementation). All while there are public binary releases out.



myle commented 9 hours ago



And the saga continues in #226, where we pick out data structures from the Blackbox implementation and find them to be curiously similar ;)



OhmEye commented 9 hours ago



This is a ridiculous situation. Disputing that RF contains GPL'd code is nonsensical. It's proven, it's obvious, and it's logical. It's not a reasonable claim that the entire body of GPL'd code in RF has been rewritten from the ground up since June do be entirely original and non-derivative. The current binaries show beyond doubt that this has not happened, which is reasonable and obvious. It defies belief that it's possible for any audit of the source can result in a verification that the source is completely original from the June RF GPL'd codebase yet just happens to generate the same binaries.



MAVProxyUser commented 8 hours ago



Heh Kalyr played with fire and got burned? I'm not surprised. Reap what you sow...



joshuabardwell commented 8 hours ago • edited



@OhmEye it's actually because the RF devs claims are so spectacular that I'm intrigued by the offer to audit. If a magician puts a rabbit in a box, and then bets you \$100 that the box is empty... well, for one thing, you're a sucker if you take the bet, but at the same time, you've got to wonder where he hid the rabbit. And if he offers to let you look at the box, you kind of want to say yes.



OhmEye commented 7 hours ago



@joshuabardwell Oh, I don't think anybody should turn down an offer to view their source. I also don't think one has to be a lawyer or GPL expert to compare RF source to BF/CF and see similarities. Of course I haven't seen their current source, but the idea that they stopped updating the github repo in June and wrote an entirely new project from scratch since that time with the same functionality and features without any code duplication or derivation is literally incredible. The fact that the binary contains the same code proves beyond doubt that some source is the same, even should there turn out to be source obfuscation, which on the face of it makes an audit unnecessary for the purposes of determining a GPL violation. GPL violation has already been proved, I don't see how it can be honestly disputed.

Meanwhile, if an audit is going to happen it should be by somebody acceptable to people on both sides of the claims, which typically means somebody accepted as unbiased. I think the purpose of an audit at this point would basically be to determine the extent of violation, how much GPL or derived code exists. I'm not sure why that matters other than for curiosity, since any at all is enough for violation and it's unreasonable in the extreme that they really have only some small overlooked things.



joshuabardwell commented 7 hours ago



@OhmEye from a legal perspective, I doubt any of this matters, because I doubt any stakeholders with a claim will reach the point of litigation.

From an ethical perspective, I definitely think there is a difference between "one line of code" which is technically a GPL violation, and wholesale copying.

In other words, as far as most of us are concerned, the extent of the violation is probably what we care about most.



mlyle commented 7 hours ago



@joshuabardwell now I'm up to 3 functions reverse engineered (out of 3 attempted), all identical to Cleanflight except one constant being different (21 attempts to initialize the gyro instead of 5). The other issue has annotated assembly dumps and side-by-side code comparisons. I can keep doin' this all day :P



2



OhmEye commented 7 hours ago



@joshuabardwell I also doubt this will actually go to litigation, and I think it's unlikely to capture the attention of the EFF just based on the small userbase.

I agree there's an ethical difference between some inadvertent bits here and there and wholesale copying. I'm having a hard time understanding how anybody familiar with the history of the \*flight codebase can suspend disbelief enough to entertain the notion that there is not a significant amount of copying or derivation in this case. Really, this is so very clearly not a situation where only a minor or overlooked amount of code was carried forward.

So yes, it's precisely because most of us are concerned about the extent of the violation that I think it's so egregious. Bluntly, my personal curiosity is more about discovering if there is any significant amount non-derived code at all. Yes, I suspect it's that bad.



webbbn commented 7 hours ago



@joshuabardwell Did you switch sides? I thought you were here representing RaceFlight. Are you now admitting that you believe their is a violation, but they don't plan to do anything about it? Why don't the RaceFlight principals come here to defend themselves?

Even though we all have our individual projects, the open source flight controller community is pretty well connected, which is demonstrated by the players involved in this discussion, which are not all MultiWii/XFlight developers. Does RaceFlight want to start a business based on theft and deception?

Reputation means something, and if RaceFlight thinks they have something unique that can't be duplicated and surpassed honestly by this community, then I think they might end up learning a hard lesson.



tracernz commented 6 hours ago



Even though we all have our individual projects, the open source flight controller community is pretty well connected, which is demonstrated by the players involved in this discussion, which are not all MultiWii/XFlight developers.

We just need some APM guys in here and we'd have everybody. I suspect they have enough of their own licensing issues to deal with at the moment with DroneCode though. 😞

rs2k referenced this issue 6 hours ago

**More GPL violation in Raceflight - Blackbox #226**



vadav commented 5 hours ago



@joshuabardwell In regards to using Skitzo as a neutral audit.. forget it.. he announced ahead a month ago to working with the RF team.. <https://youtu.be/PV-k1-yRbgg?t=324>



mlyle commented 5 hours ago • edited



Let's talk about the "Super Secret Gyro"! Thanks to people who pointed me to the Raceflight beta code for the revolt board.

Let's look at what the gyro readout code looks like for the "Super Secret Gyro"! Again, despite doing a "clean rewrite", they seem to have chosen the exact same structure layouts and order of function parameters as CleanFlight!

```

; save stack
366b8:    b5f0        push   {r4, r5, r6, r7, lr}
; r3 = 0x20006acc (ram address) -- mpuConfiguration
366ba:    4b69        ldr   r3, [pc, #420] ; (0x36860)
; grow the stack 12
366bc:    b083        sub   sp, #12

; let's put our argument out of the way for later use
366be:    4604        mov   r4, r0

; pull out the word (function pointer) 4 bytes into this structure -- mpuConfiguration.read
366c0:    685d        ldr   r5, [r3, #4]
; pull out the byte at the beginning of this structure (mpuConfiguration.gyroReadXRegister)
366c2:    7818        ldrb  r0, [r3, #0]
; argument 2 = where we grew the stack to (&data)
366c4:    466a        mov   r2, sp
; arg1 = 6
366c6:    2106        movs  r1, #6
; ret = mpuConfiguration.read(mpuConfiguration.gyroReadXRegister, 6, data);
366c8:    47a8        blx  r5
; check for 0 retval, go to end / return if so
366ca:    2800        cmp  r0, #0
366cc:    f000 8086   beq.w 0x367dc

; very crude state machine math and floating point readout code follows
366d0:    4b64        ldr  r3, [pc, #400] ; (0x36864)
366d2:    781a        ldrb r2, [r3, #0]
; if r2 = 3 then r2 = 0
366d4:    2a03        cmp  r2, #3
366d6:    bf04        itt  eq
366d8:    2200        moveq r2, #0
; store the altered r2 back to the beginning of the structure.
366da:    701a        strbeq r2, [r3, #0]
...

```

vs. accgyro\_mpu in cleanflight:

[https://github.com/cleanflight/cleanflight/blob/master/src/main/drivers/accgyro\\_mpu.c#L285](https://github.com/cleanflight/cleanflight/blob/master/src/main/drivers/accgyro_mpu.c#L285)

```

bool mpuGyroRead(int16_t *gyroADC)
{
    uint8_t data[6];

    bool ack = mpuConfiguration.read(mpuConfiguration.gyroReadXRegister, 6, data);
    if (!ack) {
        return false;
    }
}

```



rs2k commented 5 hours ago

Owner +

Come on now, this is just getting pathetic. How many ways are there to read a gyro or print a string?

1



mlyle commented 5 hours ago • edited



You have a configuration structure in memory that consists of a 1 byte register number, 3 bytes of alignment gap, and then a function pointer to do the read. It is the exact same code structure as cleanflight.

The function pointer receives 3 arguments in this order-- the register number, the number of bytes to read, and a destination pointer. It returns 0 on failure, which most c code doesn't do. It's the exact same structure as cleanflight.

The target for the read is on stack.

There's dozens of choices of how to do each of these things.

Come on now, this is just getting pathetic. How many ways are there to read a gyro or print a string?

I don't know--- millions or billions of equivalent, likely programs? But you guys ended up with the exact same one.



treken commented 4 hours ago



As a former developer I can understand that when someone kangs your code and takes credit for it it's like a slap in the face. I won't lie, although I used another's code in many instances I would always give credit even if the code evolved into completely different strings/structure we would still preserve credit from the coder that the code originated from. Not even getting into GPL it's just an ethical issue above all. Someone will always stand on the shoulders of giants at some point



mlyle commented 4 hours ago



Let's pick something else then. Cleanflight uses a somewhat improbable constant.

```
return lrintf(throttle_correction_value * sin_approx(angle / (900.0f * M_PIf / 2.0f)));
```

which equals

$$3.14159265358979323846 * 900 / 2.0 = 1413.71669411540695730700$$

0x44b0b6ef in hex

Well look, there it is in the revolt image:

```
00024290 ef b6 b0 44 74 88 00 20 e4 86 00 20 64 91 00 20 |...Dt.. ... d.. |
```

Let's look at how address 24290 is used in the code:

```
indirected load of pointer from ram
2402e: 4b97 ldr r3, [pc, #604] ; (0x2428c)
cr7 = 1413.71..
24030: ed9f 7a97 ldc 10, cr7, [pc, #604] ; 0x24290
24034: edd3 7a00 ldcl 10, cr7, [r3]
floating point, what a pain. multiply by throttle scale angle
24038: ee20 0a27 cdp 10, 2, cr0, cr0, cr7, {1}
2403c: eebd 0ac0 cdp 10, 11, cr0, cr13, cr0, {6}
24040: ee10 3a10 mrc 10, 0, r3, cr0, cr0, {0}
compare angle to 900
24044: f5b3 7f61 cmp.w r3, #900 ; 0x384
24048: bfa8 it ge
if (angle > 900)
angle = 900;
2404a: f44f 7361 movge.w r3, #900 ; 0x384

2404e: ee00 3a10 mcr 10, 0, r3, cr0, cr0, {0}
; divide by this 900 * m_PI / 2.0f constant
24052: eef8 7ac0 cdp 10, 15, cr7, cr8, cr0, {6}
24056: ee87 0a87 cdp 10, 8, cr0, cr7, cr7, {4}
; and truncate it
2405a: f00d f975 bl 0x31348
```




Compare to the cleanflight throttle angle correction code:

<https://github.com/cleanflight/cleanflight/blob/master/src/main/flight/imu.c#L495>

```
int angle = lrintf(acos_approx(rMat[2][2]) * throttleAngleScale);
if (angle > 900)
    angle = 900;
return lrintf(throttle_correction_value * sin_approx(angle / (900.0f * M_Pi / 2.0f)));
}
```

Miraculously, you guys picked the same values for cutoff angle and chose to do the math in the exact same ways. You didn't convert to radians earlier in the process, you don't do a tangent correction; you choose this scaling instead of power scaling. Very nifty-- it's like you are perfectly mentally attuned to make the same choices that the MultiWii-derived projects do.

Never mind that every other flight stack on the planet is different-- APM, PX4, OpenPilot et al, AQ32-- you just always happen to pick the constants, parameter conventions, units, math scaling that Cleanflight does.

 2  1  1



**glowtape** commented 3 hours ago



Come on now, this is just getting pathetic. How many ways are there to chose an arbitrary cutoff angle?

 2



**tracernz** commented 3 hours ago



@rs2k I will ask one simple, straightforward question which you should be able to answer easily. Are the binaries at <http://raceflight.net/beta> compiled from any GPL-licensed source code for which you (or other raceflight devs) are not the copyright holder?

 1  1



**trollcop** commented 3 hours ago



Looks like I need to update the DCL to include these two clowns in it.

 1



**joshuabardwell** commented 2 hours ago



@webbbn I'm disappointed that there has been any conclusion that I have taken sides. When Fidel Castro called up Barbara Walters to do an interview, she didn't say no. Okay, there are all sorts of problems with that analogy, but I think you can get the gist. When a controversial figure makes an overture to open up to a neutral third party, there are lots of reasons why the third party might agree. It only becomes problematic if, like Kim Jong Un and Dennis Rodman (for example), the neutral third party is a gullible rube who becomes a propaganda mouthpiece for the controversial figure. I submit it is far, far too early in this process for anyone to determine whether that has happened with me.

As I said in another comment: if I could sum up the thing that I do for the community, it is to take complicated topics and present them in a form that average people can understand. My approach to this situation is no different.



**webbbn** commented 2 hours ago



@joshuabardwell Do you have access to the RaceFlight repository? If you really consider yourself a neutral 3rd party, then I'm sure we could guide you through the process of "auditing" the source code. All

you have to do is look at a few places in the code and tell us if it's the same as in the CleanFlight code. And/or you can get @tracernz's question answered.



**deepimpactio** commented 2 hours ago



@joshuabardwell I am pretty confident you are a neutral 3rd party and outstanding member of the community and a straight shooter (as long as you don't pull a Casey Neistat on us) ;)

I just came here because I want to know if I install this Raceflight on my drone toy if it will fly faster and higher than anyone else's.



**Deckoz2302** commented 2 hours ago



@joshuabardwell I've asked to review the code many times...anyway

Both versions of the GPL require you to provide all the source necessary to build the software, including supporting libraries, compilation scripts, and so on.

GPLv3 talks about "distribution" a lot—when you share the program with someone else, you're distributing it. Distribution requires a release of all relevant sources under GPL.

GPLv3 offers a reprieve for good behavior after a license violation: if you violate the license, you'll get your rights back once you stop the violation, unless a copyright holder contacts you within 60 days(both Dominic and Boris have done so and been ignored). After you receive such a notice, you can have your rights fully restored if you're a first-time violator and correct the violation within 30 days(30 days has come and gone) Otherwise, you can work out the issue on a case-by-case basis with the copyright holders who contacted you, and your rights will be restored afterward.

Basically release your source.



**kaspergrubbe** commented 2 hours ago



Maybe one of the offended parties can get in touch with the EFF, and ask them to give advice on the matter? Maybe they will know a person that can help with the review (if that is still necessary).

They offer legal assistance and advice: <https://www.eff.org/pages/legal-assistance>

(.. and if you're not a donor already, I can only recommend being one, they do important work!)



**mlyle** commented an hour ago



Note probably the FSF (Free Software Foundation) is a better choice than the EFF (Electronic Frontier Foundation)-- which specializes a lot more in civil liberties online instead of free software rights.



**trollcop** commented an hour ago



All this would be a complete fucking non-issue if only people coded for fun (for example baseflight) instead of trying to extract the most money out of poor retards (all for-profit projects that were forked from baseflight).

rs2k, you're a faggot, not because you're a for-profit scumbag but because you copied your trash from clifton-flight instead of just using baseflight and a real compiler.

then all these clowns couldn't decompile and compare the code since ARMCC generates way better code than GCC ever will. LOL.

...



MAVProxyUser commented an hour ago



@rs2k don't make me pull a 3dr on you and contact the FSF =]  
<http://lists.dronecode.org/pipermail/dronecode-tsc/2015-July/000070.html>



proggod commented 37 minutes ago

Collaborator



We have heard the rift we have created in the FPV community and we have decided to release our current beta code base as GPL. There is GPL in the current releases. We will release the source for our beta releases in a GPL license, over the next week. We need time to notify any other developers involved and make sure all the gpl headers, and everything else are clearly displayed in the code, before releasing the full source code as GPL.

We feel that over all this will benefit everyone in the long run, and push the hobby even further forward. I am sure everyone will still have mixed feelings from what is going on, but hopefully you can see that we are sincerely trying to rectify the situation.



4



joshuabardwell commented 36 minutes ago



@Deckoz2302

Basically release your source.

@proggod

proggod commented 19 seconds ago

Well, fuck me.



MAVProxyUser commented 24 minutes ago



HAHAHAH you deleted all the comments? Way to save face...

The internet never forgets.



mlyle commented 23 minutes ago



@proggod I welcome and look forward to increased transparency and compliance with licenses. Even with this rectified, I think it's unfortunate you guys A) made public statements that you weren't violating the GPL and didn't have any code and had rewritten things, and B) have expunged the history here.

Still, I'm hopeful that you guys will do better and take the honest path next time around.



proggod commented 22 minutes ago

Collaborator



I really would appreciate you don't comment much in here, we don't want the message diluted. We just want to make it clear we are releasing the source.



MAVProxyUser commented 19 minutes ago



You don't want the message diluted? Then why did you delete all the comments and rewrite history? Gimme a break...



MAVProxyUser commented 16 minutes ago



"We just want to make it clear we are releasing the source" make a blog post... put it on <http://raceflight.net/gpl> then add a GPL statement to all the boards you are selling regarding the code you put on em. ;) <http://raceflight.net/shop/>



Deckoz2302 commented 15 minutes ago

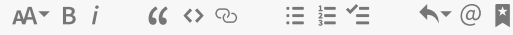


The community will appreciate your efforts and contributions and ability to continue to contribute to all aspects of future flight controller software. Thank you.



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Styling with Markdown is supported

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