“Drone Is Disconnected”: Why This Happens and How to Fix It

Nothing beats the panic that sets in when your drone disconnects mid-flight. If you’re lucky, you’d be faced with the problem *before* your drone takes off and goes out of reach.

Either way, the “drone is disconnected” notifications are pretty common with modern drones.

But this doesn’t mean they *have* to be a part of your drone flying sessions.

The point is that drones only disconnect under particular circumstances. And if you make it impossible for them to exist, you can undoubtedly enjoy a seamless experience.

This post is all about helping you do just that. We’ll be covering what the root problems may be and how to fix them. You’ll also find advice on troubleshooting some of the most popular DJI models.

What happens if your drone disconnects?

A drop in connection usually lasts a few seconds. Your drone will notify you that it’s disconnected before the connection is automatically restored.

But what if your drone disconnects and stays that way? Would it simply go down and crash? Here’s the answer.

What happens if your drone disconnects depends on how it’s programmed and configured. Modern, full-featured drones have fail-safe mechanisms in place that allow them to automatically return to their starting points or land in place if the GPS signal is lost.

DJI models, for example, automatically initiate their Return to Home (RTH) functionality when there’s a lack of connection for multiple seconds.

It’s important to note that landing in place isn’t always safe. If your drone is flying over water and it disconnects with *that* as its backup option, there’s little chance for its survival.

Under other conditions, your drone may simply hover until the connection is picked back up.

That reaction isn't too bad assuming you can actually reconnect your drone in a timely manner. But if you just leave it to hover for a bit too long, your drone may start to drift off and inevitably crash.

The YouTube video below shows how a DJI Mini 2 executes its safety features when it disconnects.

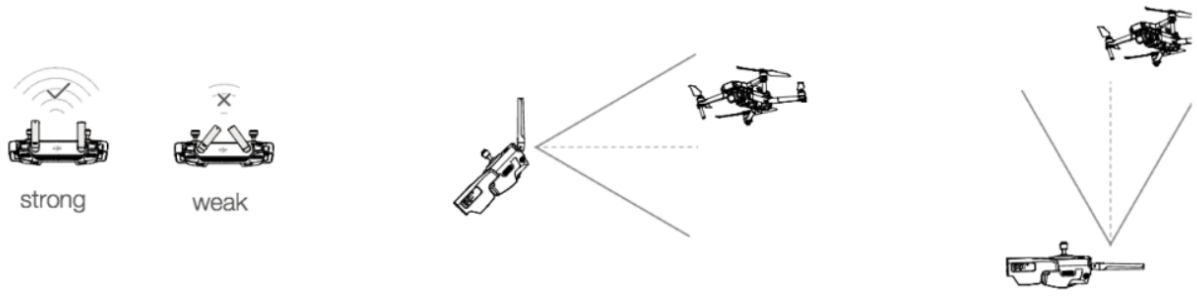
https://www.youtube.com/watch?v=albjy0edKqE

Why does your drone keep disconnecting?

Now, let's get to the heart of the matter. I did my research and found a select number of problems that are typically to blame for connection failures. Take a look.

Your drone may be disconnecting because it's flying out of its connectivity range, isn't being operated in a suitable environment (due to interference), or is low on battery. Connection issues can also come from using a faulty USB cable or delaying firmware updates.

In some cases, your drone controller's antenna may simply be facing the wrong direction. The antennas should ideally be parallel to each other and perpendicular to your flying drone.



With that out of the way, let's expand on *why* the causes I mentioned earlier are the most common.

Out of Range

This one's self-explanatory. As you increase the distance from a drone to its controller past a certain point, you lose out on signal strength.

What this point is for you depends on the range of your drone model. It identifies the radius within which a strong signal can be maintained and can typically be found on a specification sheet.

If you fly your drone a bit too far away, veering it out of its range, you'll start to notice connectivity issues. Communications get harder because radio waves lose intensity.

It's ultimately pretty obvious that you're required to fly your drone within its range.

However, I wouldn't blame you if you accidentally fail to do so. It's easy to overlook your drone's capabilities while trying to shoot the best footage possible.

Poor Flight Setting

Most pilots make sure they're taking their drone out on a sunny day to avoid the weather getting the best of their mission.

But here's the thing: there are a few more setting-related boxes you should check before flying.

And one of the most important ones refers to electromagnetic interference, which is typically found in areas with surrounding technology. Sources of interference could be anything from power lines to a simple high-frequency device.

Similarly, pilots of drones using WiFi transmission often face disconnections.

All of this means that your drone may keep disconnecting because you're flying in a developed region with signal crowdedness.

And that's not all.

Another little challenge is presented by physical objects. If you're operating your drone with metallic objects around you (or below you, because the ground counts as well), there may be evident disruptions in data transmission.

Faulty Cable

For a camera drone to be truly useful, there needs to be a way for the pilot to see exactly what is being recorded. This is accomplished by a live feed.

An extra device is linked with the controller through a USB cable. The device may also then function as a platform for additional control features.

Now, here's why this part is important.

If you've set everything up properly but use a faulty USB cable, there will obviously be hiccups in the (what needs to be continuous) flow of data. And this points toward connectivity issues.

The real problem is that a cable's health can often be deceiving, which is why pilots tend to unreasonably disregard it. It's important to remember that a cable does not need to have *visible* damage for it to malfunction.

On the other side of things, there may be an issue with the USB ports instead. An insecure connector can definitely be the cause for a drone falling in and out of connectivity.

Outdated Firmware

We've discussed hardware through antennas and cables. However, we can't simply leave our list of causes to just that.

The truth is that a lot of your drone problems may be stemming from software bugs or app instability, both of which can only be fixed through the installation of updates.

If you run with an outdated version for too long, your drone app's data may become corrupt and cause disconnections. Alternatively, your app may freeze entirely as you're trying to fly your drone.

It's needless to say that updating drone firmware is very simple. But if that's the case, why is outdated firmware even a common cause?

Well, it's common because drone pilots often forget to keep tabs on their device ecosystem. Update alerts don't always come through which is why I always recommend checking for one yourself before a flight.

How do you reconnect a drone?

You now know what kind of circumstances can lead to disconnections. This will help you be better prepared for your next flying session.

But what are you supposed to do on the day? Here's how you can try reconnecting your drone right there and then.

You can reconnect a drone by visually locating it and moving to be in its range. You can then try restarting your controller and your linked mobile device. If your drone is flying out of range and momentarily disconnecting, keeping it in GPS mode will give you a better chance of reconnecting it.

A drone set to GPS mode will simply hover in the same position when you're not controlling it. In other words, it will counter the forces of wind on its own (or at least it will try to). This has helped prevent flyaways for many pilots.

Once you've managed to reconnect it and bring it back down, here are a few things you can try doing to prevent disconnections for good. (A lot of these points refer back to our causes.)

- Restart your drone and update its firmware.
- Try another USB cable and see if disconnections persist.
- Check your smartphone's compatibility with your drone.
- Try a different radio frequency to find a more facilitating communication channel.

A particular drone model may also have more specific solutions. More on that later.

It's important to note that this section targets an unstable connectivity problem, where your drone connects to your controller but also keeps disconnecting later on.

If you're unable to even establish a connection, you have a different problem. I've written a separate post on drones that won't connect to their controllers at all.

Why does your DJI Phantom 4 say disconnected?

You're more likely to come across a "disconnected" notification on a DJI drone as opposed to a different one.

And don't get me wrong, this isn't a bad thing. Other (cheaper) drones may not have a protection mechanism at all.

Let's take a look at why pilots operating the Phantom 4 come across such an alert.

According to DJI representatives, your DJI Phantom 4 may say "disconnected" due to the drone or remote controller functioning on outdated firmware. Other commonly reported causes for the Phantom 4 are a faulty USB cable and corrupt cache files.

As a side note, a faulty USB cable is reported as a common cause for *most* of the popular DJI models. These include the DJI Mavic Pro and the DJI Mini 2.

The drone firmware can be refreshed through the DJI Assistant 2. The YouTube video below is a step-by-step tutorial for the process.

And as I mentioned in the section above, corrupt cache files are to do with the drone app — which in this case is the DJI GO app. All you have to do is reinstall it to get rid of the issue.

If you address these causes (along with the general ones) and the disconnections persist, you may have to take your drone in for a full diagnostic.

https://www.youtube.com/watch?v=IyU5vXBqToQ

Why does your DJI Mini 2 keep disconnecting?

The DJI Mini 2 has a few specific causes that I haven't mentioned yet. Take a look.

Your DJI Mini 2 may keep disconnecting because of the inserted micro SD card. It may be physically damaged or storing corrupt files. Other causes include remote controller issues and a weak signal due to electromagnetic interference.

The Mavic Mini series is a bit notorious for being easily affected by interference from neighboring areas. Whether that's because DJI cut a few corners or not, I can't tell.

Make sure you're not testing the drone's range, your controller is positioned correctly, and perhaps try a different location.

Finally, the SD card may not be the most common cause of disconnections, but it's one that has been reported nonetheless.

You can test your SD card by flying your drone without it and seeing if the issue still comes up. If it doesn't, you can try formatting the card through your drone app or replacing it (for a recommended one) altogether.

Conclusion - How does a drone stay connected?

To wrap it all up, a drone stays connected through a process that allows data transmission. And interruptions in that process result in disconnections.

A drone stays connected through radio frequency. The transmitter in a controller sends radio signals to the receiver in a drone. This allows wireless communication. Most drones also have built-in WiFi, which is what they use to send a live feed to a device.

Drones aren't the only devices that use radio waves for data transmission. Therefore, the transmitters and receivers need to be tuned to the same frequency *and* use radio frequency identification.

The deeper you study the process, the more complex it starts to sound. But the good news is that it's all automatic. So you don't have to think about the intricacies of drone connectivity — as long as you're facilitating it properly.