

Discover gimbal technology in smartphone camera module

Vivo X50 Pro is the first smartphone to come with gimbal image stabilization technology, which can blur existing optical image stabilization (OIS) technology. So how does it work?

According to *Slashgear* , Vivo revealed gimbal stabilization technology at the beginning of the year as an Apex 2020 concept phone with promise of 300% higher image stabilization performance than OIS today.

Camera stabilization gimbal on Vivo X50 Pro

The rear camera module of Vivo X50 Pro contains 4 lenses, of which the 48 MP main sensor is backed by gimbal stabilization technology, with the lens having a 2-ball structure to achieve a 3-axis, basically makes the lens float inside the camera case. It not only moves in two directions but also the third dimension helps compensate for tilt movement - something not seen on phone cameras.

Combined with OIS and electronic image stabilization (EIS), the camera is almost invincible when shooting in unstable conditions. The phone begins to show strength during times of shaking hands or while running on rocky terrain when the lens moves in the opposite direction of shaking to disable motion.

Having a built-in gimbal on the phone for the main lens offers many advantages. First of all, it helps bypass the carrying of unrealistic mechanical objects and second, a less vibration lens means more stability while shooting in zoom mode. The further the zoom goes, the more the movement of the phone is amplified. Therefore, a camera lens equipped with a gimbal ensures that the captured images and videos will be sharper and reproduce colors accurately.



Gimbal stability is far superior to OIS and EIS

Outperform OIS and EIS

EIS provides some stability, but this is a software solution that uses the smartphone's accelerometer to detect motion and then align the frames together. OIS, on the other hand, is a hardware solution that uses the microelectromechanical system (MEMS) gyroscope to detect motion. The camera system is then adjusted for lens movement to compensate for vibrations.

Setting up the gimbal camera on Vivo X50 Pro takes motion adjustment to the next level as the entire camera case moves to get a better access effect on three axes. Combined with the movement of the lens inside the camera for OIS to perform, the phone can take stunning photos or smooth videos in low light. This puts the X50 Pro's camera far ahead of flagship devices like the Huawei P40 Pro, Galaxy S20 Ultra or iPhone 11 Pro.



Beautiful design and great camera are what make Vivo X50 Pro popular

The camera trend shift is daring

Once Vivo has established a stable imaging technology, it wouldn't be surprising if other smartphone manufacturers (OEMs) follow suit and start developing their own similar technology. Because Vivo has the same parent company as Oppo, it is not surprising that gimbal stabilization will be coming to many phones coming next year. Vivo has set a new trend in which other smartphones will surely benefit in the near future. At \$ 650, Vivo's phone is clearly targeted at buyers who prefer the next-generation camera in their pocket and don't mind the drop in hardware compared to other hardware.

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