

# Now imagine your smartphone as a digital microscope

22 May 2016, by Nancy Owano



Here is a delightful thought, that you can look at the world of tiny things in nature and all surroundings using just your smartphone camera and nothing else.

If the thought grabs you, you may want to check out what is going on at [Kickstarter](#), with something called Blips.

Stick-on lenses turn the camera on your phone into a microscope. *Popular Photography* and a number of tech sites have been looking at the campaign and are quite impressed.

Shane McGlaun in *SlashGear* wrote, "they are essentially like little stickers that stick to your [device](#) over the camera [lens](#)." The advantage in Blips is that they are simple; they are not clunky and they are not hard to handle.

"Thanks to their design they can be attached to any smartphone over and over again, and their little 'carrying case' is small enough to slide right into your wallet," said DL Cade in *PetaPixel*.

Attach them to your smartphone like a piece of

tape; they use electrostatic charge to stick to your smartphone camera's existing lens and are slim enough to carry alongside your credit cards, said Andrew Liszewski in *Gizmodo*. He noted that the Blips lenses are just millimeters thin. "The lenses are so thin, you can actually just leave them attached to your phone and still slide it into your [pocket](#)," he said.

The Blips devices come in two versions, macro and micro: a [macro lens](#) with 10x magnification and a [micro lens](#) that can make individual cells visible, said *Gizmodo*.

Stan Horaczek, *Popular Photography*, said that "despite their very tiny size, the lenses make some impressive optical promises. The Micro version seems truly impressive, claiming to capture details about 1/7000th of an inch in [size](#)."



OK, he said, so the images do not look exactly perfect, but, after all, he added, "we're sticking tiny

lens on the front of the iPhone here, not using a super-expensive, pro-grade microscope. But, the results are pretty impressive." He added, even if they don't turn out as great as promised, "they're still pretty cheap and let you take pictures that would otherwise require really specialized equipment."

Addressing the magnification power of Blips the creators said on their FAQ page:

"When you apply Blips Macro you can see on your screen an image magnified about 8-15x without the use of additional digital zoom. The range 8-15x is due to the differences among the smartphones or tablets employed. With Blips Micro you can see on your screen an image magnified about 16-30x."

The company site said Blips works on all models of smartphones and tablets, but "Obviously the [amount](#) of magnification you get depends on your phone's capabilities," said *PetaPixel*.

There is a dedicated app available that helps the Blips user with special features.

Italy-based SMO SmartMicroOptics is the company behind this. "SMO aims to provide the possibility of viewing the micro-world to everyone," said the company statement.

The team's expertise centers around imaging systems, developed in the neuroscience department of the Istituto Italiano di Tecnologia (IIT).

It appears as if this team can extend plenty of virtual high fives with those who are supporting them. The campaign has raised \$91,193 out of their \$17,096 goal—with 33 days to go at the time of this writing.

The basic pledge of \$23 includes :1 Micro lens 1 Macro lens 2 sponges. An app is included; it is iOS and Android compatible. According to the Kickstarter page, supporters can expect delivery in September.

The creators have an answer to the question of why they do not offer Blips for higher magnification

and their response is interesting. They stated that "magnification is not an important parameter for digital optics (and microscopy); the most important parameters are resolution, i.e., the ability to [distinguish](#) tiny features, and field of view, i.e. the imaged area without scanning your device on the sample. With proper lighting BLIPS Micro can achieve a resolution

APA citation: Now imagine your smartphone as a digital microscope (2016, May 22) retrieved 20 January 2022 from <https://techxplore.com/news/2016-05-smartphone-digital-microscope.html>

*This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.*