

# The Tricorder Is Real!



Holy Spock! The Star Trek Medical Tricorder Is Real, And It's Only \$150

The device you're looking at is called the Scanadu SCOUT and, basically, it's a medical tricorder that will give you precise vital information about any human being within seconds, just on contact.

It's very real and it works now. I tried it myself, and knew I was looking at the beginning of a personal health revolution. Star Trek-level stuff. Except it's coming at the end of 2013.

And it's not only SCOUT—the company has two other devices—ScanaFlo and ScanaFlu—which are like having your own medical labs to go. Best of all, those two are so cheap that they are disposable.

SCOUT will not be disposable, though. The unit is a tiny hardware device that reads your vital health information on contact. You simply place it on the left temple and, in less than ten seconds, it will read your pulse transit time, heart rate, electrical heart activity, temperature, heart rate variability and blood oxygenation. Then it sends this information to an

app on your iPhone or Android phone, which displays it for you. You can even store your vitals for tracking, which could prove fundamental to many health situations at home.

Watching SCOUT at work was something almost magical, like having one of those giant health monitoring units reduced to a slice of plastic that fits on the palm of your hand. Which, actually, is exactly how it became to be.

## How SCOUT was invented

I talked with Walter de Brouwer, the Belgian genius who founded Scanadu after working at MIT and on several high profile tech projects, including One Laptop Per Child. A few years ago, Walter's own kid ended up in the intensive care unit of a hospital. Frustrated with the complicated devices that monitored his child's health, he started to think about how could all of this information be turned into something that normal people could understand. He tinkered around at the ICU and became so knowledgeable that he eventually was assisting some of the nurses there, who often would get confused themselves.

Walter thought that there was a need for something that would be able to monitor anyone's health, anywhere, with ease and at low cost. He thought about instantaneous vital readings, molecular diagnostics, visualization, and storage of personal health data all wrapped in an easy-to-use device that would connect to your smartphone or tablet to show you all the information you could need in a simple way. Not only for yourself, but for remote assistance too.

Most probably, Walter had watched too much Star Trek in his college years. He wanted to make a tricorder. So he did.

## How does it work

At first, he thought it was possible. In fact, there are other teams who are working in similar projects to win Qualcomm's Tricorder X-Prize Competition, or the Nokia Sensing Challenge. So what if all had failed so far?

So Walter started to work on what would become SCOUT, ScanaFlo and ScanaFlu. He assembled four teams of specialists at the NASA Ames Research Center in Moffett Field, California. Each team—engineers, chemists, doctors, mathematicians and software engineers—worked together to come up with new, smart ways not only to monitor vitals, but to detect actual infections within seconds. According to Walter, they use all the tricks in the book: imaging and sound analysis, molecular diagnostics and data analytics, all combed by "a suite of algorithms to create devices that offer a comprehensive, real-time picture of your health data."

SCOUT is their first product. This personal health tricorder is so simple that it will cost around \$150 when it appears at the end of 2013, after it gets US government approval. It may very well become as ubiquitous as home thermometers, which were introduced in the 19th century. In fact, says Walter, that's the whole point :

Consumers don't have the tools they need to monitor their

health and make informed decisions about when they're actually sick and need to see a doctor. We want to empower consumers to take control of their health and give them direct access to their personal healthfeed.

Judging from what I saw, SCOUT may be exactly that.

### Detecting infections

Along with SCOUT, I saw two other products that were even more impressive: ScanaFlu and ScanaFlo. I couldn't get photos of these—they are still in a rough prototype stage—but they are easy enough to visualize.

For ScanaFlo, imagine a disposable blue plastic rectangle with a QR code and a window that reveals paper swatches and a color calibration target. To get a reading, you need to pee on the rectangle as one would on a pregnancy test. Depending on the content of your urine, the swatches will change color.

But what do these colors mean? You don't have to guess or remember. Point your smartphone at the QR target and it will take a photo, telling you if it detects anything out of the ordinary based on the hue of the paper swatches, which react differently depending on your health status. According to its creators, ScanaFlo tests for "pregnancy complications, preeclampsia, gestational diabetes, kidney failure and urinary tract infections."

ScanaFlu works in a similar way. Instead of a rectangle, it's a square with a small protuberance on which you have to spit. Your saliva will be distributed to different test units using tiny nano-vessels. Incredibly enough, this "disposable cartridge will provide early detection for Strep A, Influenza A, Influenza B, Adenovirus and RSV." Like ScanaFlo, you will use your phone's camera to have a result sent to your app.

These disposable systems will be sold in packs, also at the end of 2013.

### Why this is the future, and why it is so important

I'm not a hypochondriac, but it's not hard to see the importance of these devices. While being able to monitor your own health would never eliminate the need for doctors, it could do wonders for everyone's well-being. These cheap devices will keep track of your own health but, as I discussed with Scanadu's founder, they can also be easily used to detect infection outbreaks at a national or planetary level, with people anonymously uploading data to a cloud. The Center for Disease Control or the World Health Organization can literally keep their fingers on the pulse of the entire planet. The possibilities are truly endless. No wonder Stephen Wolfram is one of their advisors. If they are successful, I can't wait to see what people can do with all this anonymous data.

If these gadgets can really provide you with instantaneous feedback about your health status for such a low price, this will be the beginning of something much bigger. The monetary savings in prevention alone—and not depending on expensive laboratories for many tests—makes it all worthy.

But even more exciting is the potential increasing accuracy of diagnostics, based on the tracking of data over time. As Dr. Alan Greene, Chief Medical Officer at Scanadu, says:

When it comes to health, averages don't cut it. Vitals change throughout the day and vary from person to person, so it makes no sense to assume we are all the same. Health decision shouldn't be based on averages, they should be based on a real, accurate and personalized healthfeed of data, which we now have the power to give to the consumer in the palm of their hand.

Indeed. The future looks good. I'm ready for this, Dr. Bones.

...Jesus Diaz  
<http://gizmodo.com/5965143/holy-spock-the-star-trek-medical-tricorder-is-real-and-its-only-150>

## January Calendar

January 14 — Amiga-By-The-Loop Chapter  
7:30 PM — Main Grand Prairie Library  
901 Conover Drive, Grand Prairie

January 14 — Board of Director's Meeting  
Approximately 9:15 PM — Location TBD

January 28 — Newsletter Deadline — 8:00 AM

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