

# Fingerprint tech from Qualcomm uses ultrasonic sound waves

3 March 2015, by Nancy Owano



Password-less authentication to protect user data—we have heard the call into the future from tech giants before and for good reason: Users are frustrated over having to remember numerous password combinations to enter accounts; they can easily forget passwords and have to ask support services for help, and instead depend on easy to remember combinations that are also vulnerable to easy detection. Users share with vendors a concern over criminal theft of passwords and private data. Snapdragon Sense ID 3D fingerprint technology may soon be a step forward in wider use of fingerprint authentication.

This is a security solution from Qualcomm Technologies (a subsidiary of Qualcomm) and it is based on ultrasonic technology. (*Ars Technica* said on Monday it was the same tech that is used in ultrasonic medical imaging, just smaller.) The Qualcomm approach uses ultrasonic sound waves to penetrate the outer layers of the skin. In doing so it captures three-dimensional details that are not possible to catch with present capacitive touch based fingerprint technologies. The tech enables a highly detailed surface map of the fingerprint. Also, it can power through common contaminants on the finger such as sweat, hand lotions and condensation. Raj Talluri, senior vice president, product management, said, "Snapdragon Sense ID

3D Fingerprint Technology's unique use of ultrasonic technology revolutionizes biometrics from 2D to 3D, allowing for greater accuracy, privacy and stronger authentication."

The video said the tech uses the FIDO Alliance protocol integrated in Snapdragon processors. This refers to integration with the FIDO (Fast IDentity Online) Universal Authentication Framework biometrics standard. FIDO helps to facilitate secure online communication among connected devices. Qualcomm Technologies said the new standard "is designed to allow any website or cloud application that offers FIDO authentication to interface with a broad variety of existing and future FIDO devices." *Ars Technica* described FIDO as "an industry consortium that is pushing interoperability between all levels of the [biometrics](#) stack."

The newly announced Qualcomm Snapdragon Sense ID 3D from Qualcomm Technologies was talked up on the Snapdragon blog on Monday. Qualcomm's Brent Sammons, senior manager, marketing, called it the first comprehensive mobile biometric solution based on ultrasonic [technology](#).

Traditional fingerprint authentication has relied on capacitive touch-based sensors, but the Snapdragon solution features ultrasonic-based technology, which is engineered to capture three-dimensional acoustic detail within the outer layers of skin. "The resulting image data is much less likely to be spoofed, which is a common challenge for capacitive-based sensors," said Sammons. Also, Snapdragon Sense ID was designed to scan through most device materials including cover glass, aluminum, stainless steel, sapphire and plastics.

The company said the tech consists of a Qualcomm biometric integrated circuit (QBIC), custom sensor technology, and algorithms managed by SecureMSM technology. The Snapdragon Sense ID 3D fingerprint technology is

designed to be compatible with Snapdragon 400 series, 600 series and 800 series processors.

*Ars Technica's* Sebastian Anthony said Qualcomm was showing off Sense ID at Mobile World Congress, via a prototype smartphone with Sense ID [beneath](#) the front cover glass.

Qualcomm Snapdragon Sense ID 3D fingerprint [technology](#) is expected to be available in commercial devices later this year, said the company, and it is in various sampling [stages](#) with most major OEMs.

**More information:**

[www.qualcomm.com/products/snapdragon/security/sense-id](http://www.qualcomm.com/products/snapdragon/security/sense-id)

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