

New CMOS image sensor created with on-circuit color noise reduction lowers pixel noise and improves image quality

November 29 2012



Toshiba America Electronic Components announced a new [13 mega pixel, 1.12 micrometer, CMOS image sensor](#) delivering high-image quality equivalent to a 1.4 micrometer pixel image sensor. Toshiba implemented back side illumination (BSI) technology and integrated

color noise reduction (CNR) to develop its newest CMOS image sensor that fits into an 8.5mm x 8.5mm size camera module and enables high-quality pictures even in low-light conditions.

"As mobile devices like smartphones and tablets get smaller and thinner, the pixel size of image sensors needs to shrink accordingly," said Andrew Burt, vice president of the Analog and Imaging Business Unit, [System LSI](#) Group at TAEC. "However, the miniaturization of pixel size reduces the amount of light entering into the pixel which impacts image quality. Toshiba addresses the challenge of pixel miniaturization with its newest CMOS image sensor."

The miniaturization of pixel size impacts performance of [light sensitivity](#) and [signal to noise ratio](#) (SNR) in today's 1.12 [micrometer](#) pixel image sensors. BSI technology helps improve sensitivity, but falls short on elevating image quality. Leveraging its innovation and technology expertise, Toshiba developed its newest CMOS image sensor with BSI and CNR integrated on the sensor to address both low-light sensitivity and SNR. As a result, the Toshiba CMOS image sensor provides approximately 1 ½ times higher SNR value than a 1.12 micrometer pixel image sensor with no CNR feature allowing manufacturers to deliver products with high-quality imagery, even in low-light conditions.

Samples of the Toshiba 13 mega pixel, 1.12 micrometer CMOS image sensor, part number T4K37, will be available in December 2012 . Sample pricing begins at \$ 20.00 (U.S.). For more information go to: www.toshiba.com/taec/adinfo/cmos/

Provided by Toshiba

Citation: New CMOS image sensor created with on-circuit color noise reduction lowers pixel noise and improves image quality (2012, November 29) retrieved 25 April 2024 from

<https://phys.org/news/2012-11-cmos-image-sensor-on-circuit-noise.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.