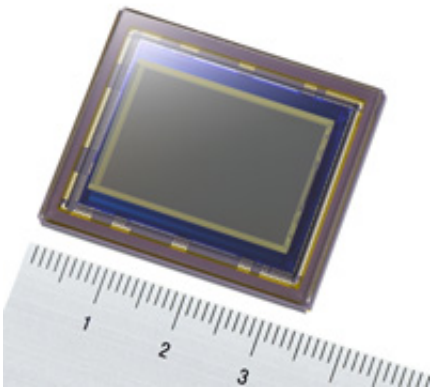


# **Sony Commercializes APS-C size CMOS Image Sensor with Industry-leading 12.47 Effective Megapixel Resolution**

August 20 2007

---



"IMX021" CMOS Image Sensor

Sony today announced the commercialization of "IMX021", an APS-C size (diagonal: 28.40mm/Type 1.8) 12.47 effective megapixel ultra-high speed, high image quality CMOS image sensor designed to meet the increasing requirement for rapid image capture and advanced picture quality within digital SLR cameras. Sony will position "IMX021" as a key device capable of generating new added value in the high-growth digital SLR camera market, actively promoting its use within Sony and externally.

One of the main strengths of CMOS image sensors is their potential for system integration, enabling both analog and digital circuits to be

combined on the same chip. "IMX021" maximizes these advantages, while also incorporating Sony's newly developed "Column-Parallel A/D Conversion Technique", providing each column within the sensor with its own A/D converter.

This system enables analog signals transferred from the Sensor's vertical signal lines to be A/D converted directly, over the shortest possible distance. It also minimizes image degradation caused by the noise that arises during analog processing, while at the same time delivering an extremely high signal conversion speed (in all-pixel scan mode) of 10.39 frame/s (12 bit).

Furthermore, since processing is performed in parallel for each column, even if the number of pixels or the frame rate increases, A/D conversion can be performed at significantly lower frequencies than with conventional non-parallel circuit structures. Consequently, high picture quality digital signals can be processed without the noise interference that results from high frequency signals.

The "Column-Parallel A/D Conversion Technique" aligns both digital and CDS circuits alongside each column. Column-parallel digital CDS circuits reduce not only pixel noise, but also the noise and inter-column processing variations that can affect analog CDS circuits. These circuits also limit A/D converter fluctuations. With this dual noise cancelling technology realizing high-precision noise reduction across both analog and digital circuits, the "IMX021" image sensor allows signals to be transferred, with limited noise, to the image processing circuits of the camera unit itself. This makes it ideally suited for the development of high image quality digital SLR cameras.

The enhanced quality images generated by "IMX021" are the result of its advanced noise cancelling features based on a unique circuit structure, its pixel array micro-fabrication technologies, and its cleaning and color-

filtering capabilities - encapsulating the range of imaging expertise that Sony has accumulated throughout its history of CCD development.

"IMX021" production will be carried out at Sony Semiconductor Kyushu Corporation's Kumamoto Technology Center.

Source: Sony

Citation: Sony Commercializes APS-C size CMOS Image Sensor with Industry-leading 12.47 Effective Megapixel Resolution (2007, August 20) retrieved 27 April 2024 from <https://phys.org/news/2007-08-sony-commercializes-aps-c-size-cmos.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.