

Low-Noise Logarithmic Active Pixel Sensor Using a Gate/N-Well-Tied PMOSFET-Type Photodetector

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A logarithmic active pixel sensor (APS) was designed as an image sensor. In the image sensor, a simplified correlated-double-sampling (SCDS) technique was applied to effectively reduce fixed pattern noise (FPN). In addition, a gate/n-well-tied p-channel metal-oxide-semiconductor (MOS)-type photodetector (PMOSPD) was used to obtain a large output swing. The measurement of the image sensor for image acquisition was carried out using a data acquisition (DAQ) card and LabVIEW system. From the experimental results, it was confirmed that the operation of the image sensor with noise reduction circuit is effective for reducing FPN.

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