

We propose a pixel-level automatic calibration circuit scheme that initializes a capacitive fingerprint sensor LSI to eliminate the influence of the sensor surface's degradation. The calibration is executed by adjusting variable capacitance in each pixel to make the sensed signals of all pixels the same. A fingerprint sensor using the 0.5- μm CMOS process/sensor process demonstrates that clear fingerprint images are always obtained by the scheme. The proposed scheme ensures consistent clear image capture during long-term usage.