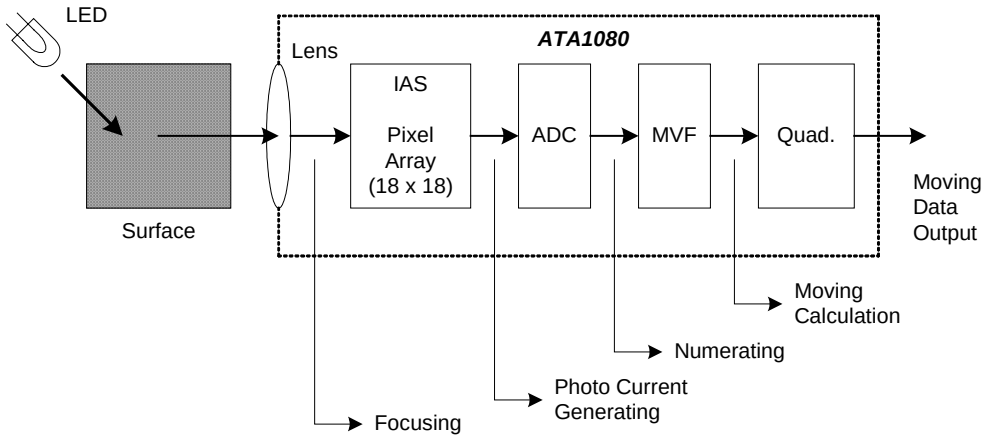
## OPERATIONS

### Theory of Operation




ATA1060XA is based on Optical Navigation Technology. It contains an Image Acquisition System (IAS), a Motion Vector Finding Processor (MVFP), a two-channel quadrature output.

The IAS acquires microscopic surface images via the lens and illumination system provided by other parts. These images are processed by the MVF processor to determine the direction and distance of motion. The MVF processor generates the $\Delta x$ and $\Delta y$ relative displacement values that are converted into two-channel quadrature signals.

### Description of Operation

Once power is up, it requires 75.3 msec to be stabilized in Motion mode. In order to minimize the power consumption, when there is no motion in the sensor, ATA1060XA turns its operation into no-motion mode. That is, when there is no motion for one second (default time period) in Motion mode, ATA1060XA turns into No-Motion mode.

In default, from No-Motion mode, ATA1060XA wakes up every 10.9 msec for one report time (588 usec) and compares with the previous wake-up in order to check whether there is any movement.