OmniVision's 13-megapixel OV13853 is a PureCel® image sensor that brings DSLR-quality images and features to mainstream mobile devices. Utilizing OmniVision's advanced 1.12-micron pixel technology, the OV13853 can achieve best-in-class high and low-light performance, while delivering support for advanced features such as phase detection autofocus (PDAF).

The 1/3.06-inch OV13853 supports an active array of 4224 x 3136 pixels (13.2-megapixels) operating at 30 frames per second (fps) with zero shutter lag, enabling seamless transition between recording video and still images. The sensor supports 4K2K ultra-high definition video at 30 fps with full-horizontal field of view (FOV) and electronic image stabilization (EIS). The OV13853 can also record high frame rate 1080p HD video at 60 fps with EIS to enable high quality video recording.

The OV13853 fits into a compact 8.5 mm x 8.5 mm module with a z-height of less than 5 mm.

Find out more at www.ovt.com.
Product Features

- PureCel® image sensor
- 1.12 µm x 1.12 µm pixel
- optical size of 1/3.06" x 1/3.06" (4224 x 3136)
- programmable controls for frame rate, mirror and flip, cropping, and windowing
- support for image sizes: 13.2MP (4224x3136), 10MP (16:9 - 4224x2376), 4K2 (3840x2160), EIS 1080p (2112x1188), EIS 720p (1366x720), and more
- 13.2MP at 30 fps
- two-wire serial bus control (SCCB)
- strahe output to control flash
- 8 kbits of embedded one-time programmable (OTP) memory
- support for PDAF
- two on-chip phase lock loops (PLLs)
- programmable controls: gain, exposure, frame rate, image size, horizontal mirror, vertical flip, cropping, and panning
- image quality controls: defect pixel correction, automatic black level calibration, lens shading correction, and alternate row HDR
- built-in temperature sensor
- suitable for module size of 8.5 x 8.5 x 0.5 mm

Product Specifications

- active array size: 4224 x 3136
- power supply:
  - core: 1.14 - 1.26V (1.2V nominal)
  - analog: 2.6 - 3.0V (2.8V nominal)
  - VDD: 1.7 - 3.0V (1.8V or 2.8V nominal)
- power requirements:
  - active: 1.199mW (33MP @ 30 fps, ISP off)
  - standby: 300 µW
  - XSHUTDOWN: 1 µW
- input clock frequency: 6 - 64 MHz
- scan mode: progressive
- sensitivity: 450 mV/lux-sec
- max S/N ratio: 36.4 dB
- dynamic range: 63.4 dB @ 1x gain
- pixel size: 1.12 µm x 1.12 µm
- image area: 4815 µm x 3678.3 µm
- die dimensions: 6210 µm x 5517 µm

Functional Block Diagram