

## **Development of CMOS imager block for capsule endoscope**

### **ABSTRACT**

This paper presents the development of imager block to be associated in a capsule endoscopy system. Since the capsule endoscope is used to diagnose gastrointestinal diseases, the imager block must be in small size which is comfortable for the patients to swallow. In this project, a small size 1.5V button battery is used as the power supply while the voltage supply requirements for other components such as microcontroller and CMOS image sensor are higher. Therefore, a voltage booster circuit is proposed to boost up the voltage supply from 1.5V to 3.3V. A low power microcontroller is used to generate control pulses for the CMOS image sensor and to convert the 8-bits parallel data output to serial data to be transmitted to the display panel. The results show that the voltage booster circuit was able to boost the voltage supply from 1.5V to 3.3V. The microcontroller precisely controls the CMOS image sensor to produce parallel data which is then serialized again by the microcontroller. The serial data is then successfully translated to 2fps image and displayed on computer.

**Keyword:** CMOS image sensor; Capsule endoscopy; Capsule endoscopes