

The Characterization of Power Supply Noise for Optical Mouse Sensor

Abstract:

The induced power supply noise (sinusoidal waveform) that injected to Vdd pin will cause unwanted spike at the positive amplitude and negative amplitude to the DC input voltage. At certain limit this spike will cause the mouse sensor unable to function properly and it may interrupt the communication line for read and write operation between mouse sensor and microcontroller. In this paper we report the characterization results of power supply noise for optical mouse sensor. A laboratory test setups that consist of digital oscilloscope, function generator and VEE-Pro software are used to evaluate three different samples of optical mouse sensor known as SS skew, FF skew and nominal skew. Results suggest that the all mouse sensor with different skew was able to withstand beyond of 100 mVpp power supply noise without any interruption.