

A Modularized Sensing Platform for Sensor Design Demonstration

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Abstract : The market of wearable devices has been growing rapidly in two years. The integration of sensors and wearable devices has become the trend of the next technology products. Thus, the academics and industries are eager to cultivate talented persons in sensing technology. Currently, academic and industries have more and more demands on the integrations of versatile sensors and applications, especially for the teams who focus on the development of sensor circuit architectures. These teams tape-out many MEMs sensors chips through the chip fabrication service from National Chip Implementation Center (CIC). However, most of these teams are only able to focus on the circuit design of MEMs sensors; they lack the key support of further system demonstration. This paper follows the CIC's main mission of promoting the chip/system advanced design technology and aims to establish the environments of the modularized sensing system platform and the system design flow with the measurement and calibration technology. These developed environments are used to support these research teams and help academically advanced sensor designs to perform the system demonstration. Thus, the research groups can promote and transfer their advanced sensor designs to industrial and further derive the industrial economic values. In this paper, the modularized sensing platform is proposed to enable the system demonstration for advanced sensor chip design. The environment of sensor measurement and calibration is established for academic to achieve an accurate sensor result. Two reference sensor designs cooperated with the modularized sensing platform are given to show the sensing system integration and demonstration. These developed environments and platforms are currently provided to academics in Taiwan, and so that the academics can obtain a better environment to perform the system demonstration and improve the research and teaching quality.

Keywords : modularized sensing platform, sensor design and calibration, sensor system, sensor system design flow

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