

Radiation Hardened Power Management for Nanosatellites: Intelligent Monolithic Point-of-Load DC/DC-cum-Single Event Latchup Protection (iMPDCSELP)

Principal Investigator: Prof Joseph Chang

The objective is to address space-industry's radiation-hardened power-management for nanosatellites whose solutions hitherto are unavailable and/or unsatisfactory today. The proposed power-management is an intelligent radiation-hardened power-management IC -cum- efficacious latchup-protection for nanosatellites. It provides unprecedented higher protection than the state-of-the-art, thereby allowing highly reliable application of non-radiation-hardened Commercial-Off-The-Shelf ICs. Further, it enables power-management redundancy, yet substantially smaller circuit-footprint, hence higher reliability. The deliverables include two versions, full-CMOS and the emerging CMOS-on-GaN (with MIT).