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A NEW DISTRIBUTED MICROSATELLITE AND NANOSATELLITE SYSTEM FOR PRECISE ATMOSPHERIC DENSITY MEASUREMENT

Abstract

A new formation flying mission, which aims to obtain the precise atmospheric density around 300km-450km altitude, is carrying out by DFH Satellite Co.Ltd. The mission will launch one microsatellite(21kg) and three nanosatellite (8kg), using newly designed DFH mini BUS in about July 2015. An Atmospheric Densitometer, a GNSS (Global Navigation Satellite System) receiver, a VLBI (Very Long Baseline Interferometry) and a Laser Retroreflector are selected as payloads. The microsatellite and nanosatellite products family adopt standardized and modularized design methods, and utilizes a variety of MEMS (Micro-electromechanical Systems) and COTS (Commercial of the Shelf) technologies with characteristics like low power consumption, small volume, light weight, and simple interface. As a collaboration mission, scientific data obtained by the 4 satellites will be shared many international research institutes. This paper presents technical and mission details concerning the mission design, the newly developed DFH mini BUS and the satellite payloads.